Rancho Cañada Village Specific Plan

Draft Environmental Impact Report

SCH# 2006081150

Prepared for:

Monterey County

Prepared by:

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Acronyms and Abbreviations

µ/m3	micrograms per cubic meter
µP	micro-Pascals
AB	Assembly Bill
ADT	Average daily traffic
AMBAG	Association of Monterey Bay Area Governments
APN	Assessor Parcel Number
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
Area Plan	Greater Monterey Peninsula Area Plan
Area Plan	Greater Monterey Peninsula Area Plan
ASTM	American Society for Testing and Materials
BA	Biological assessment
BMP	best management practices
Board	County Board of Supervisors
CAA	federal Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	state ambient air quality standards
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAWD	Carmel Area Wastewater District
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCR	California Code of Regulations
CCRWQCB	Central Coast Regional Water Quality Control Board
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act

CESA	California Endangered Species Act
CF	Code of Federal Regulations
CFPD	Cypress Fire Protection District
cfs	Cubic feet per second
CH4	methane
CIP	Capital Improvement Projects
CLOMR	Conditional Letter of Map Revision
CMI	County Median Income
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CORTESE	Cortese Hazardous Waste and Subastance Site List
County	Monterey County
CRHR	California Register of Historical Resources
CRLF	California Red-Legged Frog
CSD	Community Services District
CT	Census Tract
CUSD	Carmel Unified School District
CVMP	Carmel Valley Master Plan
CVSIM	Carmel Valley Simulation Model
CVTIP	Carmel Valley Traffic Improvement Plan
CWA	Clean Water Act
CWA	Clean Water Act
CY	cubic yards
DA 26	Drainage Area 26
DA 27	Drainage Area 27
dB	decibels
dBA	A-weighted decibels
DEIR	Draft Environmental Impact Report
DFG	California Department of Fish and Game
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources

Earthquake Fault Zones	corridors along active faults
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
ESA	Federal Endangered Species Act
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System
fps	Feet per second
FR	Federal Register
General Plan	Monterey County General Plan
GHGs	Greenhouse gases
GMPAP	Greater Monterey Peninsula Area Plan
GP 2007	General Plan Update
Gt	metric tons
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HIST UST	Hazardous Substance Storage Container Database
HOA	Homeowners Association
HWCA	Hazardous Waste Control Act
Hwy 101	U.S. Highway 101
Hz	Hertz
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
ITP	Incidental take permit
kHz	kilohertz
LAFCO	Local Agency Formation Commission
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
LUST	Leaking Underground Storage Tank Information System
Lx	Percentile-Exceeded Sound Level
Master Plan	Carmel Valley Master Plan

MBTA	Migratory Bird Treaty Act
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCWRA	Monterey County Water Resources Agency
mg/L	Milligrams per liter
MMT-CO2 eq	Million Metric tons of carbon dioxide-equivalent
MPWMD	Monterey Peninsula Water Management District
MRWPCA	Monterey Regional Water Pollution Control Agency
MS4s	municipal separate storm sewer systems
MST	Monterey-Salinas Transit
MUTCD	Manual on Uniform Traffic Control Devices
Mw	moment magnitude
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NCCAB	North Central Coast Air Basin
NFIP	National Flood Insurance Program
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO_X	oxides of nitrogen
NTU	Nephlometric turbidity units
NWP	Nationwide permit
OES	California Office of Emergency Services
PCWQCA	Porter-Cologne Water Quality Control Act of 1969
PM10	particulate matter smaller than 10 microns or less in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
ppm	parts per million
PRC	Public Resources Code
PRG	Preliminary Remedial Goals
Proposed Project	Rancho Cañada Village Specific Plan
RCRA	Resource Conservation and Recovery Act
RCRA Info database	Resource Conservation and Recovery Act
RCSP	Rancho Canada Specific Plan
RCV	Rancho Cañada Village

RCVSP or Specific Plan	Rancho Cañada Village Specific Plan
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SARA	Superfund Amendment and Reauthorization Act
SEIR	Subsequent Environmental Impact Report
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPL	sound pressure level
SR	State Route
SWMP	Storm water management program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TAMC	Transportation Agency for Monterey County
TCM	traffic control measure
TMDL	Total maximum daily load
UBC	Uniform Building Code
UFC	Uniform Fire Code
uS/cm	microSiemens/cm
USACE	U.S. Army Corps of Engineers
USC	U.S. Government Code
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
USTs	underground storage tanks
VOC	volatile organic compounds
WSEL	Water surface elevation

Executive Summary

Introduction

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

- A brief overview of the Rancho Cañada Community Partners' Rancho Cañada Village Specific Plan (Proposed Project);
- Discussion of areas of known controversy;
- A description of the alternatives considered and their impacts; and
- A summary of impacts and mitigation measures.

Project Overview

Project Location

The Proposed Project would be located within Monterey County's unincorporated Carmel Valley area. The Rancho Cañada Village (RCV) would be located at the mouth of the Carmel Valley along Carmel Valley Road, just east of the intersection of Carmel Valley Road and Highway 1 (Figure ES-1). The project area consists of portions of two parcels north of and immediately adjacent to the west course of the Rancho Cañada Golf Club, which is located at 4860 Carmel Valley Drive in Carmel, Monterey County, California (Figure ES-2). Figure ES-3 depicts the project setting.

Project Background

The currently Proposed Project is not the first proposal for redevelopment of the existing golf course. The applicant and the County have already considered a number of alternatives prior to developing the current project. These are summarized below:

- **Visitor-Serving Development** – Prior to the current application, the owner of the property had considered developing a resort/hotel complex in the location of the current project that included 175 visitor-serving units
- **Development in Floodway –** The original application proposed development in the designated floodway of the Carmel River. This application was rejected by the County due to inconsistency with County policies for flood protection. The application was revised to move development out of the floodway for the currently proposed project.
- **Rio Road Extension** – The current CVMP circulation element includes an extension of Rio Road from its existing terminus eastward and northward to link with Carmel Valley Road. The County has no current planning to complete this extension. This extension is not included in the proposed Carmel Valley Traffic Improvement Program which is under consideration by the County.

Project Goals and Objectives

As stated in the application materials, the Proposed Project has the following goals:

Economic Goals

- Create Affordable and Workforce housing that remains affordable for as long as possible.
- Create a mixed-income community with a range of housing opportunities across the economic spectrum
- Ensure that new development pays for 100% of infrastructure and services needed to support the new neighborhood.
- Establish mechanisms for maintaining and operating private infrastructure.

Environmental Goals

- Create a compact, efficient community that will minimize impacts on the environment.
- Integrate the surrounding native habitats into the open spaces within the community.
- Create buffers around the community that help transition from a native habitat/ecosystem to an urban habitat/ecosystem.
- Encourage multi-modal transportation opportunities, especially bicycle, pedestrian, and transit by creating small blocks, interconnected streets, sidewalks, and bicycle paths and through the use of traffic-calming measures appropriate for a residential neighborhood.

Social Goals

- Create a diverse, mixed-income community with a full spectrum of life cycle housing opportunities.
- Provide 50% Workforce and Affordable Housing units to serve the housing needs of people employed within the boundaries of the local Carmel Valley and Monterey Peninsula area

Project Description

The proposed project application consists of a Combined Development Permit for the creation of a new, 281-unit, sustainable mixed-use residential neighborhood. The elements of the design proposal include a mix of "Smart Growth" and "Traditional" neighborhood principles that involve the incorporation of established shopping facilities, schools, open space, and churches. Additionally, the development proposal attempts to meet the need for affordable housing in Carmel Valley. Fifty percent of the homes (140 units) are proposed to be deed-restricted as affordable and workforce units (per the pricing and eligibility requirements of Monterey County's Housing Ordinance). The proposed project also includes an evaluation of a possible extension of Rio Road.

Rancho Cañada Community Partners LLC (the applicant) has applied to the Monterey County (County) for approval of the following:

- general development plan amendment to allow the preparation of a specific plan;
- amendment to the Greater Monterey Peninsula Area Plan and Carmel Valley Master Plan;
- rezoning to Title 21 to incorporate new regulations allowing mixed-use zoning districts and new regulations in the Specific Plan area;
- combined development permit consisting of a vesting tentative standard subdivision to create 281-mixed-use residential units consisting of single-family dwellings, townhomes, and condominium/flats;
- use permit to allow development in the floodway and construction of a levee;
- use permit for movement/placement of 200,000 cubic yards of soil;
- use permit for the development of public facilities and installation of infrastructure.

Development

Project development would include:

- 281 residential units on 40 acres of land, of which 182 would be single-family homes, 64 townhomes, and 35 condominiums/flats. Half (50%) of the residences (140 units) would be deed-restricted Affordable and Workforce units, and the other units would be market rate.
- 2.5- acres of neighborhood parks in various locations; and
- 39 acres of permanent open space to include a habitat preserve, active recreation areas, and trails.

Road, Infrastructure, and Trail Improvements

Road, infrastructure and trail improvements would include:

- Improvements to the Carmel Valley Road intersection with the Rancho Canada Golf Course entrance;
- Creation of a private, internal street network between Carmel Valley Road and Rio Road;
- Rio Road Extension into the Proposed Project neighborhood;
- Sanitary sewer, potable water, joint utilities, and stormwater drainage extensions in and around project development sites;
- Creation of a pedestrian system plan to accommodate the needs of pedestrians and bicyclists. This network would connect residences with neighborhood parks and extend to the nearby networks and trails planned and existing within the greater project area; and
- Creation of a trail system within the proposed habitat preserve that would connect into the Carmel Valley Trail System's planned regional trail.

Preservation and Conservation

The proposed project includes the creation of a permanent 31-acre habitat preserve between the Carmel River and the proposed residential development. The preserve would contain low-impact improvements including trail systems, seating areas, and native landscaping.

Maintenance and Operations

The project would not require net funding from the County General Fund or any enterprise funds to finance operations and maintenance of the Rancho Canada Village infrastructure. The maintenance of roads, parks, and open space would be funded through a combination of Community Services District, County Services Area, Landscaping and Lighting District, and/or Homeowners Association fees and assessments. Some maintenance and operations functions would be

performed by County staff however, they would be reimbursed by these special assessments and/or fees. Utilities would be maintained by the appropriate service providers.

Areas of Known Controversy and Concern

This section discusses the key issues of public and agency concern relative to the Proposed Project and the conclusions of this DEIR regarding those issues. This is not a comprehensive discussion of impacts of the Proposed Project, of which the reader is directed to discussion below in Table ES-1 at the end of this Chapter, and Chapter 3 and 4 of this DEIR.

- **Land Use** – The project is not consistent with the Carmel Valley Master Plan land use designations and zoning for the project site which designated for public-quasi-public use. This is a significant impact that can be remedied through amendment of the CVMP and the Greater Monterey Peninsula Area Plan, and the General Plan. The project is otherwise consistent with the policies of the CVMP, the GMPAP, and the General Plan. While the densities proposed are higher than is often seen in Carmel Valley, the densities are not unprecedented for this type of development and the compact development allows for retention of other areas of open space and habitat. The project residential development can be implemented without creating land use incompatibilities with adjacent land uses and without significant aesthetic impacts.
- **Traffic** – The project would increase local traffic (on Rio Road and Carmel Valley Road in particular) and contribute to regional traffic. These increases would cause some intersections and roadway segments to significantly decrease their level of service either directly or in combination with cumulative development. Project traffic impacts can be mitigated to a less than significant level through the mitigation identified in this document, except for contributions to cumulative traffic impacts to Carmel Valley Road through the Village. At this location, the cumulative impacts are considered significant and unavoidable due to the unavailability of feasible mitigation to improve traffic flow through the Village without resulting in significant secondary impacts and fundamental inconsistency with the overall intent of the CVMP relative to the Village area.
- **Visual Aesthetics** – The residential development would change the aesthetic features relative to the existing golf course. Given the setback distances from Carmel Valley Road, mitigating landscape measures, and the developed character of adjacent uses, visual impacts can be mitigated to a less than significant level.
- **Hydrology** – The project would be built partially within the 100-year floodplain of the Carmel River (but not in the floodway). The project could alter the level and character of flood events upstream and downstream. However, based on the flood studies completed, with mitigation, the project

would not a significant impact on flooding. Project drainage designs are capable of handling local drainage and runoff and in promoting recharge.

- **Water Supply** – The new residence would have a demand for potable water. However, the project would shift use of water from golf course irrigation to residential use, which will result in a reduced withdrawal of water from the Carmel River aquifer. This reduced withdraw from the aquifer will also benefit biological resources in the area. The applicant's water rights have been confirmed by the appropriate authorities and the prior water use documented by data presented in this document.
- **Biological Resources** – The project would remove native and non-native vegetation that may support several special-status species but would also restore native vegetation and wildlife habitat along the Carmel River in areas that are presently golf course. Overall, with the proposed habitat restoration and mitigation, the project would result in less than significant impacts to biological resources.
- **Geology and Soils** – The project would require extensive (approx. 200,000 cubic yards [CY]) of excavation and transport by truck. Excavation may result in unstable soils, erosion, and sedimentation; however this is a temporary significant impact. The project soils at the residential site may be subject to liquefaction but these can be addressed through proper site engineering and best management practices during construction activities.
- **Population/Housing –** The project is a housing project and thus would result in increased housing availability. However, these 281-units would be deducted from the remaining CVMP housing unit quota of an estimated 513 units. Thus, the project would not result in the creation of excess units above what is currently allowed by the CVMP. By developing units planned under the CVMP, the project would accommodate the population projected by AMBAG and would not induce unplanned growth.
- **Construction Disruption** – Construction may temporarily affect air quality, and noise. These impacts could be significant, but can be addressed through mitigation in this document.
- **Water Quality** –While the project would increase residential runoff, it would also reduce the existing amount of pesticides, herbicides, and fertilizer used for golf course landscaping. Project construction may result in runoff and sedimentation. However, these effects would be mitigable to a less than significant level through best management practices.
- **Operational Noise** – Traffic noise would increase locally resultant from the new residences, however these increases would not exceed local standards. On-site noise impacts to new residences can be addressed through mitigation identified in this document.
- **Operational Air Quality Emissions** – Traffic air quality emissions would be increased with increased residential traffic but were found to be less than significant based on the analysis in this document.
- **Public Services and Utilities** – The project would increase demand for public services, though these would be accommodated by existing services

and utilities and not require expansion of public infrastructure offsite. Mitigation is included to reduce impacts on police services. New utility extensions on site would be paid for by the new development itself.

- **Hazards and Hazardous Materials** – The project would result in public exposure to petroleum and hazardous materials during construction and operation but these impacts can be mitigated to a less-than-significant level with mitigation identified in this document.
- **Cultural Resources** – The project could disturb undiscovered buried cultural resources. These potential impacts can be mitigated to a less-than-significant level with mitigation identified in this document.

Alternatives Considered

A range of alternative options was identified with the potential to avoid or substantially reduce the significant impacts of the project. While the number of conceivable alternatives that might be considered for a project of this nature is vast, the range of alternatives considered was determined to represent a reasonable range for the purposes of the analysis, considering the nature of development proposed and the significant impacts identified for the Proposed Project.

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 project.

The following alternatives were initially considered but dismissed from more detailed impact analysis:

- **Compliance with Existing Zoning Alternative** - This alternative would not meet most of the project objectives because it would not provide housing.
- **Care Facilities Prohibition Alternative –** This alternative does not avoid or substantially lessen any of the identified significant or cumulative impacts of the Proposed Project.
- **Floodway Development** Alternative– This alternative is not considered feasible as it violates County flood control policies
- **Lower Carmel Valley Flood Control Alternatives -** While additional flood control improvements might be feasible that could also have benefit to other adjacent properties, such improvements are not necessary to address the impacts of this project, and thus would be in excess of mitigation proportionality and nexus allowed by CEQA.
- **Floodwall/Levee Alternative -** Because the only impact reduced by this alternative (construction emissions) can be readily mitigated through proposed mitigation in the Draft EIR, this alternative was not considered further.

- **Reclaimed Water Reuse Alternative** – This alternative would not avoid or substantially lessen a significant adverse impact of the Proposed Project.
- **Rio Road Extension Alternative** – Because this alternative would not avoid or substantially reduce any significant impacts of the Proposed Project and has been determined to not be necessary as part of the CVMP circulation program, this alternative was dismissed from further consideration.
- **Traffic/Transit Improvements Alternative -** While feasible, these suggestions were not carried forward for further analysis as they do not avoid or substantially reduce significant impacts of the Proposed Project.
- **Visitor-Serving Development** – This alternative would not meet most of the project objectives because it would not provide housing, and thus it was dismissed from further consideration.

The remaining alternatives were analyzed further in the document. A summary of analysis is provided below. Unless otherwise noted, aspects of the alternatives outside the locations specifically discussed are the same as in the Proposed Project.

Alternative 1 – No Project

Alternative Characteristics

Under the No-Project Alternative, no improvements are anticipated. The site would remain a public golf course on the western portion of the Rancho Canada Golf Club.

Feasibility and Ability to Meet Project Objectives

This alternative is considered feasible to avoid or substantially lessen significant effects of the Proposed Project at the site, but would not meet the project objectives or goals.

Impact Analysis

No changes to the existing environment at the project site would result under this alternative.

Under the No Project Alternative, 281 residential units would not be located on the west course of the Rancho Canada Golf Club. Instead, these units would be developed elsewhere in the Valley in accordance with the residential buildout quota allowed under the CVMP. Accordingly, the development of these 281 units elsewhere in the valley would likely result in greater impacts on the following resource areas:

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Hydrology and Water Quality
- Land Use, Population and Housing
- Public Services, Recreation, and Utilities

These increased impacts are primarily due to the likelihood that these residential units would be developed in a less compact and more upscale fashion, similar to the current development patterns that exist within the Valley.

Alternative 2 – East Golf Course

Alternative Characteristics

This alternative would locate the 40-acre residential area along the East Golf Course east of the Rancho Canada clubhouse oriented closer to Carmel Valley Road. The habitat /open space area would be located along the Carmel River in the adjacent area to the south. Presuming the need for a similar amount of area, it was not considered feasible to locate the development entirely outside the 100-year floodplain, as the area outside the floodplain was too narrow to accommodate the 40-acre development. Access would be via a combined access road to the clubhouse from Rio Road or directly from Carmel Valley Road via a new intersection. No connection to Rio Road to the west would be included in the proposed project

This alternative was developed to examine the potential to avoid impacts related to proximity to the middle school, the church, and the residential developments west along Rio Road.

Feasibility and Ability to Meet Project Objectives

This alternative is considered feasible to avoid or substantially lessen significant effects of the Proposed Project at the site. Due to it's proximity to the original project site, this alternative would meet most of the project objectives or goals with the exception of fulfilling the environmental goal for multi-modal transportation.

Impact Analysis

The relocation of the project site further to the west and closer to Carmel Valley Road would result in greater adverse impacts on the following resource areas compared to the proposed project:

- Aesthetics and Visual Resources
- Noise
- Transportation and Traffic

Compared to the proposed project, this alternative would lessen air quality impacts during the construction period on the schoolyard.

Under this alternative, 281 residential units would still be located on the Rancho Canada Golf Club. As such, cumulative impacts are nearly the same as the Proposed Project with one exception. This alternative would likely have less construction-period particulate emissions exposure to the middle school locations given that the construction location and access are not as close to the school as the Proposed Project.

Alternative 3 – Medium Density

Alternative Characteristics

This alternative would include 186 residential units on the 40-acre residential site (gross density of 4.5 units/acre). This gross density would be considered medium density (1–5 units/acre) in the CVMP although specific densities within the Village could be high-density in certain locations. The open space area and preserve would be the same as the Proposed Project.

In order to ensure that this alternative was economically feasible, this alternative was designed to include as many market-rate units as the Proposed Project (141 units), would require the mandated percentage of affordable units (20% or 37 units in this alternative), with only a minimal amount of workforce housing (4% or 7 units). The general amount of infrastructure needed to support this alternative was presumed to be the similar to the Proposed Project, although specific housing unit utilities and streets would be less.

Feasibility and Ability to Meet Project Objectives

This alternative is considered feasible to avoid or substantially lessen significant effects of the Proposed Project at the site, however, no economic study has been conducted to verify the economic feasibility of this alternative. If this alternative were advanced, it is suggested that an economic feasibility study be conducted.

This alternative would satisfy the project's economic and social goals for creating a community that supports a full spectrum of housing opportunities, but not as well as the Proposed Project. Thus, the Medium Density Alternative would meet most, but not all of the project goals and objectives.

Impact Analysis

The reduced density of units under this alternative would result in lessened impacts on all of the resource areas, however it would not likely change the significance of impacts identified for the proposed project.

Under this alternative, 186 residential units would be located on the Rancho Canada Golf Club. Similar to the Proposed Project, within the CVMP residential quota, this would mean lesser residential development in other locations in Carmel Valley as long as the quota is in place. Similar to the No Project Alternative, the "other" 95 units not built with this alternative would be spread throughout Carmel Valley on residentially designated sites and result in similar impacts as the No Project Alternative but on a smaller scale.

Alternative 4- Low Density

Alternative Characteristics

This alternative would include 40 residential units on the same 40-acre residential site (gross density of 1 unit/acre). The open space area would be the same as the Proposed Project. This alternative would include 33 market rate units, 7 affordable units and no workforce units (as they are not mandatory). The percentage of affordable units in the development would be 20% in compliance with Monterey County minimal requirements. This gross density would be considered low density (1 unit/acre) in Carmel Valley although specific densities within the Village could be medium density in certain locations.

Feasibility and Ability to Meet Project Objectives

This alternative is considered potentially feasible to avoid or substantially lessen significant effects of the Proposed Project at the site, however, no economic study has been conducted to verify the economic feasibility of this alternative. If this alternative were advanced, it is suggested that an economic feasibility study be conducted.

While this alternative would satisfy all of the Project's environmental goals, it would not satisfy all of the Project's Economic Goals, or any of the Project's Social Goals.

Thus, while this alternative is feasible, it does not meet most of the project objectives.

Impact Analysis

This Low Density Alternative would result in similar direct and indirect impacts described above for the Medium Density Alternative. Impacts would be lessened, but significance would likely remain unchanged with the further reduction of residential units on the parcel.

Under this alternative, 40 residential units would be located on the Rancho Canada Golf Club. Similar to the Proposed Project, within the CVMP residential quota, this would mean lesser residential development in other locations in Carmel Valley as long as the quota is in place. Similar to the No Project Alternative, the "other" 241 units not built with this alternative would be spread throughout Carmel Valley on residentially designated sites and result in similar impacts as the No Project Alternative but on a smaller scale.

Alternative 5 – Rio Road Extension Emergency Access Only

Alternative Characteristics

This alternative would be the same as the Proposed Project, but would have site access via Rio Road to the east to Carmel Valley Road. This alternative would provide for pedestrian, bicycle, and emergency access along the Rio Road tieback levee between Rancho Canada Village and the current terminus of Rio Road at Val Verde Street. Public vehicle access would be restricted to emergency access only with a locked gate.

Feasibility and Ability to Meet Project Objectives

This alternative is feasible alternative since access would still be provided via Carmel Valley Road and a secondary emergency access route would be available. Emergency providers would be able to use access from the west or the east so that adequate service ratios can be maintained for the development.

This alternative would result in the creation of all the key features of the Proposed Project in the same location on the west course of the Rancho Canada Golf Club. The restriction of site access to Rio Road would not impede or restrict the attainment of Project objectives or goals.

Impact Analysis

With the exception of Traffic, this alternative would result in similar impacts described for the proposed project. Impacts traffic would be significant, but mitigable to levels below significance. This alternative would have similar cumulative impacts as described for the proposed project.

Alternative 6—Stemple Property Avoidance Alternative

Alternative Characteristics

A portion of the Specific Plan Area is on a property not owned by the project applicant, referred to as the "Stemple Property". The Proposed Project includes the northernmost roadway in the development on this property. This alternative, as shown in Figure 5-1, would redesign the project so that it would not include any permanent development on the Stemple Property. This would reduce the area of the development by several acres, would require realignment of the east-west road on the northern side of the development, and would increase the density of the development slightly.

The Lombardo Land Group has an access easement, as shown on Figure 5-1 on part of the Stemple Property, but this alternative would not use the Stemple Property for new roadways or residences.

Feasibility

In concept this alternative is feasible as it is similar to the proposed project, but in a slightly smaller area.

Ability to Meet Project Objectives

This alternative would meet the objectives of the project.

Impact Analysis

This alternative would have virtually the same impacts as the Proposed Project as it is expected to have the same number of units and other infrastructure, with only a slight reduction in project area. The residential area would be slightly more dense than the Proposed Project.

Environmentally Superior Alternative

For direct and indirect impacts, the Medium-Density Alternative would be the environmentally superior alternative compared because it would have a somewhat lessened aesthetic impact and would have a substantially less indirect effect on traffic generation.

However, for Carmel Valley as a whole, cumulatively the Medium-Density Alternative would *not* be environmentally superior to the Proposed Project as it would cumulatively result in a more highly-dispersed pattern of residential

development that would require more land, more vehicular travel, and likely more extensive infrastructure (in particular concerning water supply) than the Proposed Project and Alternatives 5 and 6.

For Carmel Valley as a whole, cumulatively the Proposed Project/Alternative 6 *would be* environmentally superior to the No Project Alternative and the other feasible alternatives as it would result in a less dispersed pattern of residential development that would require less land, less vehicular travel, and likely less overall infrastructure. In particular, the Proposed Project/Alternative 6 would result in a net decrease in withdrawals from the Carmel River, whereas assured water supplies in other parts of Carmel Valley are uncertain.

Summary of Impacts and Mitigation Measures and Levels of Significance

The impacts of the Proposed Project, proposed mitigation, and significance conclusions are discussed in detail in Chapter 3 and Chapter 4 of this DEIR. Table ES-1 summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Table ES-1 Summary of Impacts

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
3.1 Geology and Soils			
A. Seismic Hazards			
GEO-1: Substantial Adverse Effects Resulting From Fault Rupture	NI	None Required	–
GEO-2: Substantial Adverse Effects Resulting From Earthquake-Induced Ground Shaking	LTS	None Required	–
GEO-3: Substantial Adverse Effects Resulting From Seismic-Related Ground Settlement	Potentially Significant	GEO-1: Design All Proposed Structures in Accordance with the Requirements of the California Building Code, Current Edition, and Recommendations Contained in the Site-Specific Geologic and Geotechnical Reports	LTS
GEO-4: Substantial Adverse Effects Resulting From Earthquake-Induced Liquefaction	LTS	None Required	–
B. Landslides and Slope Stability			
GEO-5: Substantial Adverse Effects Resulting From Landsliding	Potentially Significant	GEO-2: Implement Recommended Grading and Slope Design Criteria of the Site-Specific Geotechnical Reports	LTS
C. Erosion			
GEO-6: Accelerated Soil Erosion and Sedimentation	Potentially Significant	GEO-3: Prepare and Implement an Erosion and Sediment Control Plan	LTS
D. Soil Constraints			
GEO-7: Substantial Adverse Effects Resulting from Expansive Soils	Potentially Significant	GEO-4: Remove Localized Zones of Overly Loose Materials	LTS
GEO-8: Substantial Adverse Effects Resulting from Loss of Topsoil	LTS	None Required	–
GEO-9: Effects of Septic Systems on Soils	NI	None Required	–

LTCC=Less-than-Considerable
LTS = Less-than-Significant
NI= No Impact

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Cumulative Impacts			
GEO-C1: Cumulative Impacts of Development on Geologically Hazardous Areas	LTC	None Required	–
GEO-C2: Cumulative Accelerated Runoff, Erosion, and Sedimentation	Potentially Significant	GEO-1 through GEO-4 [see above]	LTC
3.2 Hydrology			
A. Alteration of Drainage Patterns			
HYD-1: Change in Local Drainage Patterns	Potentially Significant	HYD-1: Implement Recommendations of Preliminary Stormwater Management Plan	LTS
HYD-2: Increase in Localized Velocities in the Carmel River	Potentially significant	BIO-8 [See Chapter 3.3]	LTS
B. Stormwater Runoff and Drainage Infrastructure			
HYD-3: Impacts to Groundwater and Surface Water from Infrastructure Failure	LTS	None Required	–
C. Water Quality			
Impact HYD-4: Construction-Related Impacts to Surface Water Quality and Groundwater Quality	Potentially Significant	HYD-2: Comply with NPDES General Construction Permit HYD-3: Implement a Spill Prevention and Control Program HYD-4: Implement Measures to Maintain Surface Water or Groundwater Quality	LTS
HYD-5: Water Quality Impacts from Construction Below the Water Table	Potentially Significant	HYD-5: Provisions for Dewatering	LTS

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
HYD-6: Water Quality Impacts from Increased Runoff	Potentially Significant	HYD-6: Best Management Practices to Maximize Stormwater Quality HYD-7: Comply with Monterey Regional Storm Water Management Program	LTS
D. Groundwater Supply			
HYD-7: Substantially Deplete Groundwater Supplies or Interfere with Groundwater Recharge	LTS	None Required	–
E. Risk of Flooding			
HYD-8: Flood Hazard Associated with Placement of Fill in Floodplain	LTS	None Required	–
HYD-9: Flood Hazards Associated with Redirection of River Flows	Potentially significant	HYD-8: Protect Eastern Slope of Excavated Basin HYD-9: Construct Floodwall and/or Reinforce Berm at Western Edge of Project	LTS
F. Risk of Inundation by Seiche, Tsunami, or Mudflow			–
HYD-10: Seiche, Tsunami, or Mudflow Hazards	LTS	None Required	LTS
Cumulative Impacts			–
HYD-C1: Cumulative Impacts to Hydrology and Water Quality	Potentially significant	HYD-1 though HYD-9 [see above]	LTC
3.3 Biological Resources			
A. Impacts to Vegetation			
BIO-1: Loss of Coyote Brush Scrub Habitat	LTS	None Required	–

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
BIO-2: Loss of Monterey Pine Stands	Potentially Significant	BIO-1: Avoid Impacts on Monterey Pine Stand if Feasible	LTS
		BIO-2: Conserve 0.6 Acres of Monterey Pine Forest to Mitigate for Loss of a Potentially Native Stand	
BIO-3: Loss or Disturbance of Special-Status Plant Occurrences	Potentially Significant	BIO-3: Conduct a Survey for Summer Blooming Special-Status Plant Species	LTS
		BIO-4: Avoid or Minimize Impacts on Special-Status Plant Species Populations by Redesigning the Project, Protecting Populations, and Implementing a Compensation Plan (If Necessary)	
		BIO-5: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel	
BIO-4: Loss of Riparian Forest and Woodland Habitat	Potentially Significant	BIO- 5: [See above]	LTS
		BIO-6: Minimize Disturbance of Riparian Forest and Woodland	
		BIO-7. Restore Riparian Forest to Compensate for the Loss of Riparian Forest Habitat	
		BIO-8. Monitor Bank Erosion in Project Reach and Restore Riparian Vegetation and River Bank if Disturbed Due to Increased Velocities	
BIO-5: Loss of Wetlands and Other Waters of the United States	Potentially Significant	BIO-6, BIO-7, BIO-8 [see above]	LTS
		HYD-1, HYD-2, HYD-3, HYD-4 [see Chapter 3.2]	
		BIO-9. Delineate Waters of the U.S. and Waters of the State in the Project Area	
		BIO-10: Restore or Create Waters of the U.S. and State to Mitigate Permanent Loss of Wetland and Pond Habitat	
BIO-6: Loss of Protected Trees	Potentially Significant	BIO-11: Redesign Project or Compensate for Removal of Protected Trees	LTS
B. Impacts to Wildlife			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
BIO-7: Loss or Disturbance of California Red-Legged Frog Aquatic Habitat and Potential Loss of California Red-Legged Frog Adults, Larvae, or Eggs	Potentially Significant	BIO-12: Conduct Formal Site Assessment and Consult with U.S. Fish and Wildlife Service to Determine if Protocol-Level Surveys are Necessary BIO-13: Restrict Filling of Ponds/Wetlands and Initial Ground-Disturbing Activities in California Red-Legged Frog and California Tiger Salamander Habitat to the Dry Season (May 1 to October 15) BIO-14: Conduct a Preconstruction Survey for California Tiger Salamander and California Red-Legged Frog BIO-15: Monitor Initial Ground Disturbing Construction Activities within California Red-Legged Frog and California Tiger Salamander Habitat BIO-16: Compensate for the Removal and Disturbance of California Tiger Salamander and California Red-Legged Frog Breeding and Upland Habitat	LTS
BIO-8: Loss or Disturbance of California Tiger Salamander Aquatic Habitat and Potential Loss of California Tiger Salamander Adults, Larvae, or Eggs	Potentially Significant	BIO-17: Conduct Site Assessment and Consult with U.S. Fish and Wildlife Service to Determine if Interim Presence/Negative Finding Surveys are Necessary BIO-13, 14, 15, and 16 [See above]	LTS
BIO-9: Loss or Disturbance of Southwestern Pond Turtle Aquatic Habitat and Potential Loss or Disturbance of Southwestern Pond Turtles	Potentially Significant	BIO-18: Conduct a Preconstruction Survey for Southwestern Pond Turtles and Monitor Construction Activities within Suitable Aquatic Habitat	LTS
BIO-10: Potential Loss or Disturbance of Breeding or Wintering Western Burrowing Owls and Their Burrows	Potentially Significant	BIO-19: Conduct a Survey for Suitable Burrows for Western Burrowing Owls BIO-20: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the CDFG Guidelines for Burrowing Owl Mitigation, if Burrows are Detected in the Survey Area	LTS

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
BIO-11: Potential Loss or Disturbance of Tricolored Blackbirds and Their Breeding Habitat	Potentially Significant	BIO-21: Conduct Surveys for Breeding Tricolored Blackbirds	LTS
BIO-12: Potential Loss or Disturbance of Monterey Dusky-Footed Woodrat or Their Nests	Potentially Significant	BIO-22: Conduct Surveys for Woodrat Middens and Relocate Woodrats and Middens Prior to Construction Activity	LTS
BIO-13: Potential Loss or Disturbance of Tree and Shrub Nesting Migratory Birds and Raptors	Potentially Significant	BIO-23: Remove Vegetation During the Nonbreeding Season and Avoid Disturbance of Nesting Migratory Birds and Raptors	LTS
BIO-14: Potential Loss or Disturbance of Pallid Bat, Hoary Bat, and Non-Special-Status Bats Species	Potentially Significant	BIO-24: Conduct a Survey for Suitable Roosting Habitat and Evidence of Roosting Bats and Avoid Disturbing Them	LTS
BIO-15: Temporary and Permanent Impacts to Steelhead Trout and other Carmel River Fish	Potentially Significant	HYD-1 through HYD-7 [See Section 3.2] BIO-8: [See above] BIO-25: Rescue Steelhead, if Stranded in Site Basin, during high-flow events	LTS
Cumulative Impacts			
BIO-C1: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	Potentially Significant	BIO-1 through BIO-25 [see above]	LTC
3.4 Aesthetics			
A. Visual Character and Quality			
AES-1: Conversion of Recreational Open Space to Residential Use	LTS	None Required.	–
AES-2: Changes in Views from Existing Residences and Other Public Viewpoints	Potentially Significant	AES-1: Implement Measures to Reduce Visual Intrusion for Existing Residences and Other Public Viewpoints	LTS
B. Scenic Vistas and Corridors			
AES-3: Changes in Views from Existing Scenic Routes	LTS	None Required.	–

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
C. Light and Glare			
AES-4: Create a New Source of Light and Glare	Potentially Significant	AES-2: Implement Measures to Reduce Light or Glare for Existing Residences	LTS
Cumulative Impacts			
AES-C1: Cumulative Degradation of the Existing Visual Character of the Region	Potentially Significant	AES-1 and AES-2 [see above]	LTC
3.5 Land Use			
A. Land Use Compatibility			
LU-1: Construction-Related Land Use Impacts	LTS	None Required	_
B. Plan/Policy Consistency			
LU-2: Conflicts with Land Use Plans, Policies, or Regulations	Potentially Significant	LU-1: Change Land Use Designations and Site Zoning	LTS
LU-3: Conflicts with Habitat Conservation Plans	NI	None Required	_
C. Division of an Established Community			
LU-4: Physically Divide a Community	LTS	None Required	_
Cumulative Impacts			
LU-C1: Cumulative Local Land Use Impacts	Potentially Significant	LU-1 [see above]	LTC
3.6 Hazards and Hazardous Materials			
A. Public Exposure			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
HAZ-1: Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment	Potentially Significant	HAZ-1: Follow Cypress Fire Protection District and Other Guidelines for Storage and Handling of Hazardous Materials HAZ-2: Immediately Contain Spills, Excavate Spill-Contaminated Soil, and Disposal at an Approved Facility HAZ-3: Develop and Implement Plans to Reduce Exposure of People and the Environment to Hazardous Conditions During Construction Activities AIR-2 and AIR-3: [See Chapter 3.8] PSU-3 [See Chapter 3.10]	LTS
HAZ-2: Routine Transport, Use, or Disposal of Hazardous Materials	Potentially Significant	HAZ-4: Participate in the local HHW Collection Program	LTS
HAZ-3: Hazardous Emissions or Hazardous Materials, Substances, or Waste Handling Within One-Quarter Mile of a School	Potentially Significant	HAZ-1 through HAZ-4 [see above]	LTS
HAZ-4: Location of the Project on a Known Hazardous Material Site	LTS	None Required	–
B. Airport Vicinity			
HAZ-5: Potential Exposure of Hazardous Materials in the Vicinity of an Airport or Airstrip	LTS	None Required	–
Cumulative Impacts			
HAZ-C1: Cumulative Significant Hazards to the Public or Environment	Potentially Significant	HAZ-1 through HAZ-4 [see above]	LTC
3.7 Transportation and Circulation			
A. Signalized Intersections			
TR-1: LOS Decrease at Signalized Intersections	LTS	None Required	–

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
B. Unsignalized Intersections			
TR-2: LOS Decrease at Unsignalized Intersections	Potentially Significant	TR-1: Contribute Fair-Share to Signalization (or All-Way Stop) of Laureles Grade and Carmel Valley Road	LTS
C. Roadway Segments			
TR-3: Peak Hour LOS Decrease for Two-Lane and Multi-Lane Portions of Carmel Valley Road	LTS	None Required	–
TR-4: Peak Hour LOS Decrease for Portions of Highway 1 and 68	Potentially Significant	TR-2: Contribute Fair-Share Regional Impact Fee for Improvements to Highway 1 and Highway 68	LTS
D. Access, Circulation and Safety			
TR-5: Adequate Sight Distance	LTS	None Required	–
TR-6: Adequate Project Access	LTS	None Required	–
E. Transit and Bicycle Travel			
TR-7: Changes to Traffic and Bicycle Travel	LTS	None Required	–
F. Construction Traffic			
TR-8: Construction Traffic	LTS	None Required	–
Cumulative Impacts			
TR-C1: LOS Decrease at Signalized Intersections	Potentially Significant	TR-C1: Contribute Fair-Share Impact Fee for Improvement of Laureles Grade / Highway 68 Intersection TR-2 [see above]	LTC
TR-C2: LOS Decrease at Unsignalized Intersections	Potentially Significant	TR-C2: Contribute Fair-Share to Signalization of Rio Road and Carmel Valley Road TR-1 [see above]	LTC

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
TR-C3: Peak Hour LOS Decrease for Two-Lane and Multi-Lane Portions of Carmel Valley Road	Potentially Significant	TR-C3: Contribute Fair-Share Impact Fee to Improvement of Carmel Valley Road Segment Operations	LTC for all Segments Except Segment 3. Segment 3 Contribution would be Considerable and Unavoidable
TR-C4: Peak Hour LOS Decrease for Portions of Highway 1 and 68	Potentially Significant	TR-2 [see above]	LTC
TR-C5: Adequate Sight Distance	LTC	None Required	–
TR-C6: Adequate Project Access	LTC	None Required	–
TR-C7: Changes to Transit and Bicycle Travel Access	LTC	None Required	–
TR-C8: Construction Traffic	LTC	None Required	–
3.8 Air Quality			
A. Air Quality Plan Consistency			
AIR-1: Consistency with the Local Air Quality Management Plan	LTS	None Required	–
B. Long-Term Emissions			
AIR-2: Generation of ROG and NOX, CO, and PM10 Emissions in Excess of MBUAPCD Thresholds	LTS	None Required	–
C. Construction Emissions			
AIR-3: Generation of Construction Emissions in Excess of MBUAPCD Thresholds	Potentially Significant	AIR-1: Limit Construction Activities AIR-2: Implement MBUAPCD Mitigation Measures for Construction PM10 Emissions	LTS
AIR-4: Elevated Health Risk from Exposure to Construction-Related Emissions	Potentially Significant	AIR-3: Implement MBUAPCD Mitigation Measures for Off-Road Mobile Source and Heavy Duty Equipment Emissions	LTS
D. Sensitive Receptors			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
AIR-5: Exposure of Sensitive Receptors to Substantial Concentrations of CO	LTS	None Required	–
E. Odors			
AIR-6: Generation of Objectionable Odors Affecting a Substantial Number of People During Construction Activities	LTS	None Required	–
AIR-7: Long-Term Generation of Objectionable Odors Affecting a Substantial Number of People	LTS	None Required	–
Cumulative Impacts			
AIR-C1: Cumulative Effect on Air Quality	LTC	None Required	–
AIR-C2: Cumulative Elevated Health Risk from Exposure to Construction-Related Emissions	Potentially Significant	AIR-1 through AIR-3 [see above]	LTC
AIR-C3: Increased Project Greenhouse Gas Emissions May Contribute to Climate Change	Significance Undeterminable	None Proposed	Significance Undeterminable

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
3.9 Noise			
A. Long-Term Increases in Noise			
NOI-1: Exposure of On-Site Noise Sensitive Land Use to Noise	Potentially Significant	NOI-1: Implement Noise Reducing Treatments at Residences Located Near the Batting Practice Area	LTS
NOI-2: Exposure of Off-Site Noise Sensitive Land Uses to Increased Noise	LTS	None Required	–
B. Short-Term Increases in Noise			
NOI-3: Exposure of Noise Sensitive Land Uses to Construction Noise	Potentially Significant	NOI-2: Employ Noise-Reducing Construction Practices	LTS
C. Vibration			
NOI-4: Exposure of Sensitive Land Uses to Vibration from Construction Activity	LTS	None Required	–
Cumulative Impacts			
NOI-C1: Exposure of Noise-Sensitive Land Uses to Cumulative Traffic Noise that Exceed County Noise Compatibility Standards	LTC	None Required	–
3.10 Public Services, Utilities, and Recreation			
A. Fire and Police Services			
PSU-1: Increased Demand for Fire and First Responder Emergency Medical Services	LTS	None Required	--
PSU-2: Increased Demand for Police Services	Potentially Significant	PSU-1: Ensure Adequate Police Funding	LTS
B. Emergency Access			
PSU-3: Interference with Emergency Access Routes or Adopted Emergency Access Plans	LTS	None Required	–

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
C. Wildland Fire Hazard			
PSU-4: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires	LTS	None Required	–
D. Water Demand			
PSU-5: Increased Water Supply Demand	LTS	None Required	–
E. Infrastructure Capacities			
PSU-6: Increased Demand for Water and Sewer Infrastructure	Potentially Significant	PSU-2: Test Well Supply, Identify Water Treatment and Distribution Facilities, and Avoid Impacts on Biological Resources	LTS
F. Wastewater Treatment Capacity			
PSU-7: Increased Wastewater Treatment Capacities	LTS	None Required	–
G. Utility Disruption			
PSU-8: Construction-Related Service Disruptions	Potentially Significant	PSU-3: Coordinate with Appropriate Utility Service Providers and Related Agencies to Reduce Service Interruptions	LTS
H. School Enrollments			
PSU-9: Increased Student Enrollments	LTS	None Required	–
I. Recreational Demand			
PSU-10: Increased Use of Existing Neighborhood and Regional Parks	LTS	None Required	–
J. Open Space			
PSU-11: Quality and Quantity of Open Space Used for Recreation	LTS	None Required	–
K. Landfill Capacity			

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
PSU-12: Increased Demand for Solid Waste, Green Waste, and Recycling Disposal Needs	LTS	None Required	–
Cumulative Impacts			
PSU-C1: Cumulative Increase in Demand for Public Services and Utility Infrastructure and Capacities	LTC	None Required	–
3.11 Cultural Resources			
A. Historical Resources			
CR-1: Demolition, Destruction, Relocation, or Alteration of Historic Resources	LTS	None Required	–
B., C., and D. Archaeological Resources, Human Remains, and Paleontological Resources			
CR-2: Ground Disturbing Activities, Such As Grading, Trenching, or Excavation	Potentially Significant	CR-1: Archaeological Resources- Stop Work if Buried Cultural Deposits are Encountered During Construction Activities CR-2: Archaeological Monitoring During Ground Disturbing Activities Within the Project Area During Construction CR-3: Archaeological Resources- Stop Work if Human Remains are Encountered During Construction Activities CR-4: Paleontological Resources- Stop Work if Vertebrate Remains are Encountered During Construction	LTS
CR-3: Erosion or Usage of the Project Area That Could Expose Buried Archaeological Resources Due to Long-Term Use of the Area	Potentially Significant	CR-5: Consult With a Qualified Archaeologist to Identify Resources and Assess Impacts	LTS

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Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Cumulative Impacts			
CR-C1: Cumulative Impacts on Unknown and Undiscovered Cultural Resources	Potentially Significant	CR-1 through CR-5 [see above]	LTC
3.12 Population and Housing			
A. Induce Population Growth			
POP-1: Induce Substantial Population Growth	LTS	None Required	–
B. Cause Displacement of People or Housing			
POP-2: Displacement of Existing Housing or Population	LTS	None Required	–
Cumulative Impacts			
POP-C1: Cumulative Impacts on Population and Housing	LTS	None Required	–

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Chapter 1
Introduction

Purpose of the EIR

The County of Monterey (County) has prepared this Draft Environmental Impact Report (DEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Rancho Cañada Village Specific Plan (Project or Proposed Project). This DEIR 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 environmental impact report (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 Rancho Cañada Village development 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]).

Scope and Organization of the EIR

This DEIR contains a description of the Proposed Project, a description of the environmental setting, discussions of project impacts, discussions of measures to be implemented to mitigate impacts found to be significant, as well as an analysis of project alternatives.

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 Project 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 Project 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 DEIR.

This DEIR evaluates the potential impacts of the Proposed Project in relation to the following:

- geology and soils;
- hydrology and water quality;
- biological resources;
- aesthetics;
- land use;
- hazards and hazardous substances;
- transportation and circulation;
- air quality;
- noise;
- public services, utilities, and recreation;
- cultural resources; and
- population and housing

This DEIR also analyzes the following:

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

Impact Terminology

This DEIR uses the following terminology to describe environmental effects of the Proposed Project.

- **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.
- **Beneficial Impact:** A project impact is considered beneficial if it would result in the improvement of an existing physical condition in the environment (no mitigation required).
- **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.

Approval 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 DEIR should be directed to the name and address listed below.

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

Jacqueline R. Onciano
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Monterey County Resource Management Agency
Planning Department
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Salinas, CA 93901-2487
(831) 755-5193
(831) 757-9516 (fax)
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All documents mentioned herein or related to this project can be reviewed any Monterey County business day between the hours of 7:30 A.M. and 5:00 P.M. Monday through Friday at the Monterey County Resource Management Agency - Salinas Permit Center, located at the following address:

168 West Alisal Street at Capitol, 2nd Floor
Salinas, CA 93901-2487

Written comments received in response to the DEIR will be addressed in a Response to Comments addendum document, which, together with the DEIR, 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

Project Description

Project Location

The Rancho Cañada Village (RCV) development would be located at the mouth of Carmel Valley along Carmel Valley Road, just east of the intersection of Carmel Valley Road and Highway 1 (Figure 2-1). Carmel Valley is a major northwest-southeast trending valley bounded by ridges of the Santa Lucia Mountains in the California coastal range, located west of Carmel-by-the-Sea and south of the City of Monterey, and north and east of the City of Carmel. Elevations range from just above sea level on the valley floor near the ocean to over 2000 feet on some of the ridgelines. The climate is Mediterranean, with warm, dry summers and mild, wet winters. Daily variations in temperature are moderated by the Pacific Ocean. Maritime and continental air masses create up-valley winds during the day and weak down-valley breezes at night and in the early morning (Monterey County 1986).

The site of the proposed development is comprised of five parcels and a portion of a sixth parcel. Four parcels are currently part of the Rancho Cañada West Golf Course: Assessor Parcel Numbers (APNs) 015-162-016-000, 015-162-017-000, 015-162-025-000, 015-162-026-000, and 015-162-039-000. The project also includes the Hatton parcel (APN 015-162-040-000), north of and immediately adjacent to the west course of the Rancho Cañada Golf Club, which is located at 4860 Carmel Valley Drive in Carmel, Monterey County, California (Figure 2-2). The project area includes a linear portion of the Stemple parcel (APN 015-162-016-000) running from Carmel Valley Road south and west to the northwest corner of the original development area. The only structures on the site are a restroom facility, proposed for removal and a cart bridge associated with the golf course. Figure 2-3 depicts the project setting.

Project Objectives and Goals

The Rancho Cañada Village Specific Plan (RCVSP or Specific Plan) (see Appendix B) lists the following goals for the Proposed Project.

Economic Goals

- Create Affordable (Inclusionary) and Workforce housing that remains affordable for as long as possible.
- Create a mixed-income community with a range of housing opportunities across the economic spectrum.
- Ensure that new development pays for 100% of infrastructure and services needed to support the new neighborhood.
- Establish mechanisms for maintaining and operating private infrastructure.

Environmental Goals

- Create a compact, efficient community that will minimize impacts on the environment.
- Integrate the surrounding native habitats into the open spaces within the community.
- Create buffers around the community that help transition from a native habitat/ecosystem to an urban habitat/ecosystem.
- Encourage multi-modal transportation opportunities, especially bicycle, pedestrian, and transit by creating small blocks, interconnected streets, sidewalks, and bicycle paths and through the use of traffic-calming measures appropriate for a residential neighborhood.

Social Goals

- Create a diverse, mixed-income community with a full spectrum of life cycle housing opportunities.
- Provide 50% Workforce and Affordable Housing units to serve the housing needs of people employed within the boundaries of the local Carmel Valley and Monterey Peninsula area.

Project Description

Overview

The Proposed Project application consists of a Combined Development Permit for the creation of a new, 281-unit, sustainable mixed-use residential neighborhood. The elements of the design proposal include a mix of “Smart Growth” and “Traditional” neighborhood principles that involve the incorporation of established shopping facilities, schools, open space, and

churches. Additionally, the development proposal attempts to meet the need for affordable housing in Carmel Valley. Fifty percent of the homes (140 units) are proposed to be deed-restricted as affordable and workforce units per the Rancho Cañada Village Affordable and Workforce Housing Program. The proposed project would also include an extension of Rio Road, if required by the County, through a network of local neighborhood streets to allow safe ingress and egress for residents and public safety vehicles only. In addition, the project would create approximately 39 acres of permanent open space. The open space includes two neighborhood parks and a habitat preserve located along the north side of Carmel River.

Proposed Development

Specific Plan

A specific plan is a tool for the systematic implementation of the general plan. It effectively establishes a link between implementing policies of the general plan and the individual development proposals in a defined area. The County's authority to adopt a specific plan is set forth in the California Planning and Zoning Law, Section 65000, et seq. of the California Government Code. This law governs the enactment and implementation of general, community, and specific land use plans.

Specific plans may be used in all or part of the County to ensure systematic execution of the General Plan. A specific plan must include all detailed regulations, conditions, programs, and proposed legislation to implement each of the required General Plan elements. The Carmel Valley Master Plan (CVMP) was enacted as part of the Greater Monterey Peninsula Area Plan and the Monterey County General Plan; therefore, the purpose of a specific plan within the CVMP area is to systematically implement the CVMP.

A pattern book (architectural and site design guidelines) is included as part of the Rancho Cañada Village Specific Plan (Appendix B) to regulate the design of all buildings and ensure that the Carmel Valley Road viewshed is protected. The pattern book illustrates and defines the basic parameters of all private development in the Specific Plan area. The pattern book defines appropriate architectural styles as well as traditional zoning criteria for height, setbacks, and parking. The pattern book also establishes development standards and land use designations for Rancho Cañada Village and is part of the administrative document governing the development. Tentative vesting maps for the Rancho Cañada Village Specific Plan are included as Figures 2-4 through 2-9 at the end of this Chapter.

Next Steps

Following certification of this EIR, the RCVSP must be adopted by the County Board of Supervisors (Board) following a series of public meetings before the

Carmel Valley Land Use Advisory Committee, Subdivision Committee, and Planning Commission. Additional discretionary approvals are required for a Combined Development Permit and Vesting Tentative Map. Once approved, the design guidelines in the Rancho Cañada Village Pattern Book of the Specific Plan would supersede the County's zoning ordinance in the event of conflicting provisions.

The developer would establish a formal design review process for the architecture to be carried out by an appropriate entity designated by the developer, such as a Community Services District (CSD) or Homeowners Association (HOA). The County would not be involved with the formal design review process. Written design review approval from the entity designated by the developer would be required and would be submitted to the County as part of an application for a building permit. The County would ensure conformance with the RCVSP design standards prior to issuing building permits.

State law sets forth procedures for amending the RCVSP (California Government Code Sections 65453, 65454, and 65456). The Planning Commission, after at least one noticed public hearing, provides recommendations to the Board regarding any proposed amendments. Upon receipt of recommendations from the Planning Commission, the Board sets the matter for public hearing and gives notice of the hearing. After the hearing, the Board may deny, adopt, or adopt any part of the proposed amendment.

Specific Plan amendments are subject to CEQA. It is the intent of the Specific Plan that this EIR, once certified, would serve, without further environmental studies, as the environmental documentation for Specific Plan amendments, other than major amendments, as appropriate under CEQA. Where an application for amendment is denied by the Board, no new application for an amendment substantially the same as the one denied may be submitted for a period of one year from the date of denial.

The Proposed Project is subject to the building moratorium adopted by the County Board of Supervisors in Resolution No. 02-024 on January 22, 2002. Resolution No. 02-024 states that it is the policy of the Board of Supervisors 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, 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 relating to Level of Service on Carmel Valley Road.

As of January 1, 2008 buildout of the CVMP is currently restricted to 513 residential units that are remaining from the 1,310 units allowed under the CVMP (Policy 27.3.5) after taking into account approved units from 1987 to 2007 (see Appendix E). The Specific Plan would not increase the allowable quota of new residential units. The proposed project would create 281 new units, which would be deducted from the remaining 513 allowable units leaving a balance of 232 units that could be built in the CVMP area under the existing master plan.

Housing

The project site is located within the 81-plus-acre proposed Specific Plan area, the majority of which is currently part of the West Course at Rancho Cañada Golf Club. The development plan includes a mix of residential and recreational uses. The plan would accommodate approximately 39 acres of permanent open space (the majority of which would be dedicated to a habitat preserve) and 281 residential units. Fifty percent of these proposed units (140 units) would be affordable/workforce per the Rancho Cañada Village Affordable and Workforce Housing Program, which is included as Appendix L of the Specific Plan and is available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, 168 West Alisal Street, Salinas, California. The creation of these Affordable units would be consistent with the County's Inclusionary Ordinance.

The objective of the Rancho Cañada Affordable and Workforce Housing program is to provide a mechanism to assist qualified persons working in Carmel, Carmel Valley, and the Monterey Peninsula area to purchase or rent a house at Rancho Cañada Village. The program also seeks to provide ongoing affordability as houses are sold within the designated portions of the community to qualifying persons in the future. Detailed pricing, selection criteria, and management for the project may be found in the Rancho Cañada Village Affordable and Workforce Housing Program.

The exterior appearance of the inclusionary units must be compatible with the market rate units. Compatibility includes the architectural style and detailing, but not necessarily the quality of materials or size of structures. The inclusionary units should be similar in number of bedrooms as the market rate units (up to four bedrooms). To the extent feasible, the inclusionary units should be scattered throughout the development that also includes market rate units. However, inclusionary units may be clustered if it is found that such an arrangement better meets the objectives of the program. The inclusionary units must be developed either prior to or concurrent with the development of the market rate units.

Houses in Rancho Cañada Village would be located on the northern portion of the site, separated from the Carmel River by an open space buffer and levee. The Specific Plan calls for a mix of housing types, including compact single-family houses, townhouses, and condominiums/flats. Of the proposed 281 housing units, 140 would be Affordable and Workforce units. Although the County has not yet adopted a Workforce Housing program, these units would be made available by the project in order to support a range of housing opportunities across the economic spectrum. Affordable and Workforce units include 56 (20% of the total of 281 units) dedicated to inclusionary housing (6% of houses for very low-income, 6% of houses for low-income, and 8% of houses for moderate-income households) and 84 units (30% of the total) dedicated to Workforce I and II housing. Workforce I units would be affordable for households earning between 120% and 140% of the County Median Income (CMI), while Workforce II units would be affordable to those earning between 140% and 180% off the CMI. Affordable and Workforce units would be marketed to those working within the Carmel Unified School District (CUSD) boundaries. Fifty percent of units would

be market rate. Table 2-1 contains the proposed housing mix for Rancho Cañada Village.

Table 2-1 Rancho Cañada Village Housing Mix

Unit Type	Number of Units	Percent of Total Units	Income Level
Condominiums	17	6%	Very Low
Condominiums	18	6%	Low
Townhouses	21	8%	Moderate
Townhouses	43	15.4%	Workforce I
Small Lot Single Family	41	15%	Workforce II
Subtotal	**140**	**50%**	
Small Lot Single Family	26	9%	Market Rate
Other Single Family	115	41%	Market Rate
Subtotal	**141**	**50%**	
Total	**281**	**100%**	

Circulation

The proposed development plan would provide a Rio Road connection as a through a network of local neighborhood streets with the goal of allowing safe ingress and egress for residents and public safety vehicles, but to discourage "cut-through" traffic. (See Figure 2-4 and Appendix B, RCVSP Section 4)

The land use concept for RCV contains a framework for circulation consisting of a small-scale internal street network, which feeds into the primary street network of the area. Primary access to RCV would be provided by an extension of the street that currently serves as the entrance to the Community Church and the Rancho Cañada Golf Club. The extension of the street would lead directly into the new residential neighborhood, and wind through to the extension of Rio Road on the western end of the neighborhood. The access from Rio Road and the neighborhoods to the west would be by a small-scale extension of Rio Road at the top of a new levee. (See Figure 2-4 and Appendix B, RCVSP Section 4)

The portion of Rio Road west of the proposed development is currently in private ownership and the proposed improvements to Rio Road outside of the project area would require permission of the property owners or purchase of the right-of-way needed for the proposed improvements. Rio Road could be developed as either a through road, a local access road, or as an emergency access road.

A through road would allow access to all vehicles. A local access road would restrict access at the west side of the proposed development to residents of Rancho Cañada Village through the use of a gate or similar facility. For an emergency access road configuration, a gate would be employed to prevent

through traffic with the exception of emergency vehicles possessing the appropriate code or key.

A small-scale grid pattern of different street types would serve the community. All streets would conform to County standards and would have sidewalks. Some streets would have designated bikeways. All streets would have a 20-foot-wide "clear zone" designated to accommodate movement of emergency vehicles. The clear zone would be located in the roadway section. Most neighborhood streets would be designed for 25 mph. All streets would contain irrigated landscape shoulders (verges) with street trees. The verges would be maintained by the CSD and/or the HOA. All of the roads within the new development would be privately owned and maintained by a CSD or homeowners association. (See Appendix B, RCVSP Section 4)

The community would be served by Monterey-Salinas Transit. All residences would be located within walking distance of the existing transit stop at the entrance to Rancho Cañada Golf Club on Carmel Valley Road.

Carmel Valley Road would have a new traffic signal at the entrance to the neighborhood, between the signals currently existing at the entrance to the Carmel Valley Middle School to the west and the entrance to the Hacienda Carmel residential development to the east.

The RCVSP calls for a diverse and well-developed pedestrian circulation network enhanced by traffic calming strategies at critical locations. All streets within the community would have sidewalks on both sides. The network of sidewalks and paths would connect the residential uses to the neighborhood parks and to amenities outside of the neighborhood such as the Crossroads Shopping Center, Carmel Valley Middle School, Rancho Cañada Village, and the natural habitat preserve. The pedestrian plan would connect into the Carmel Valley trail system's planned regional trail system and would provide a link along the Carmel River, including a crossing that would provide access into Palo Corona Ranch Regional Park. (See Appendix B, RCVSP Section 4)

Rancho Cañada Village includes a Class 1 bicycle trail that would connect to the Class 2 bicycle trail along Carmel Valley Road and to the planned regional Carmel Valley trail. The Rancho Cañada Village bicycle trail would connect to the proposed extension of Rio Road, providing access for neighborhood residents to the shopping and neighborhood amenities available to the west of the Village. The proposed bicycle trails are shown in Appendix B, on Figure 4.20 of the RCVSP.

Open Space and Recreation

Approximately 50% (39 acres) of the site would be preserved in permanent open space with passive and active areas for both residents and the general public. The designated habitat preserve area is at the southerly portion of the site abutting the Big Sur Land Trust's Palo Corona Ranch Regional Park property (Figure 2-5).

The habitat preserve would continue to maintain riparian and steelhead habitat along approximately 3,000 linear feet of Carmel River bank within the development plan area. To protect habitat areas, a network of multi-use public trails would be constructed to channel users through the habitat preserve. One of the existing golf bridges would be dedicated for trail access across the Carmel River connecting to Rio Road. Trail access would also be provided to the Carmel Valley Middle School and Carmel Valley Road.

The proposed habitat preserve comprises 31.35 acres, of which 20.8 acres would be a restored to mitigate for impacts of development on woodlands and wetland vegetation. An erosion control and restoration plan has been developed to restore the riparian habitat and corridor to an ecologically functioning condition. The intent of the plan is to:

- Contain sediments and pollutants on-site through revegetation and erosion control,
- Mitigate loss of native vegetation as a result of the development,
- Control exotic pest plants on-site that may interfere with the establishment of native species, and
- Develop performance standards and monitoring protocols to assure project success.

The habitat preserve, drainage areas, and surrounding disturbed areas would be planted with a diverse assemblage of native species found within the Carmel River riparian corridor. The restored habitat would consist of a series of riparian meanders along the drainage gradient, fresh water detention basins, and riverbank. The basins and flow channels would be stabilized with engineered rock outfalls with emergent vegetation, willows and other riparian plants native to the site. Slopes and banks would be stabilized with erosion control blankets, slope breakers and straw wattles.

The ground plain sites would be planted with California perennial grasses, riparian tree species, and riparian understory plants and shrubs. As a result of the planting and management of the site, overall the amount and quality of the native riparian habitat would be increased and enhanced. Oaks would be planted on dryer sites, and sycamores and willows would be planted near the channel. Figure 2-7 shows the location of the proposed drainage areas and basins.

The open space system also includes a pair of active neighborhood parks, one at the northern edge of the habitat preserve and one in the center of the neighborhood. The first park would be 2.09 acres in size and would be characterized by lawn area for informal active recreation. The 0.41-acre neighborhood center park would be more formal in character and would include a tot lot.

The remaining golf holes at Rancho Cañada would be rerouted to create one 18-hole championship golf course and a 6-hole practice course (not part of the Proposed Project).

Utilities

The project has existing water rights and will use approximately 69 acre-feet of water per year, which is approximately 100 acre feet per year savings from the current golf course irrigation use (See Chapter 3.10, *Public Services, Utilities, and Recreation*). Water would be supplied to the homes either through the Cal-Am distribution system by assigning a portion of Rancho Cañada's water rights to Cal-Am for delivery back to the Rancho Cañada Village homes, or through the creation of a newly formed, private community services district or water company to use the existing Rancho Cañada wells to pump, treat, and purvey the amount of water necessary for the project.

AT&T (newly merged with SBC) would provide telecommunication and Internet services, while cable television services would be provided by Comcast Cable. It is anticipated that a fiber-optic telephone distribution system would be installed in a common joint trench adjacent to roadways along with gas, electric, and cable TV facilities. In addition, expansion and/or upgrading of existing transmission facilities outside of Rancho Cañada Village may be required. The need for these improvements would be made by SBC.

PG&E would provide gas and electrical service to the Proposed Project. Construction of the project would include installation of gas mains and/or electrical distribution systems to serve the project area. All new facilities would be constructed underground. Existing PG&E gas mains would be extended and new distribution mains would be installed in the joint trench. The need for new transmission facilities would be determined by PG&E.

The Carmel Area Wastewater District (CAWD) provides wastewater collection, treatment and disposal services to the project area. The project would connect to an existing 12-inch sewer trunk line that runs westerly, parallel, and about 60 feet north of the northern boundary line of the Proposed Project site.

The solid waste and recycling program in Rancho Cañada Village would be managed by the Rancho Cañada Village CSD or HOA in conjunction with Monterey County. Rancho Cañada Village is within the Monterey Regional Waste Management District and is governed by the provisions of Chapter 10.41 of the Monterey County Code of Ordinances. All residences and businesses are required to store trash in approved containers and to have it removed weekly. Solid waste pick-up services would be provided by Waste Management, Inc. and transferred to the Monterey Peninsula Landfill and Recycling Facility.

Drainage

The project site is located within the lower reaches of the Carmel River Basin and is subject to flooding during severe storms. Approximately 20.1 acres of the project area is within the FEMA-designated 100-year floodplain of the Carmel River.

The project would place fill in the Rancho Cañada Village project area so that no lot or street would be in the Special Flood Hazard Area. The project would remove approximately 120,000 cubic yards of fill from the current golf course to create a passive river basin park area.

A portion of the northern Carmel River floodplain will be excavated to provide fill material for a building pad; all structures will be placed on this building pad above the Base Flood Elevation. A Conditional Letter of Map Revision has been approved by the Army Corps of Engineers, effectively moving the floodplain and floodway boundaries so that none of the development area would be located within the floodway or floodplain. The preliminary grading and drainage plan is shown in Figure 2-7.

Within the existing golf course, there are several minor drainage structures and storm drain lines that would be removed in the construction process. New storm drainage facilities, including conventional drainage facilities and storm water infiltration areas would be constructed to serve the Proposed Project. The conventional storm drainage facilities would intercept storm water flows at the project boundaries, collect the water within the development and convey it to a controlled point of discharge. The conventional facilities would include earth swales, lined ditches, concrete curb and gutter, manholes, catch basins and underground storm drain pipes.

The Monterey County Water Resources Agency (MCWRA) has an unwritten policy that requires that the post-project, 100-year flow rate not exceed the pre-project, 10-year flow rate. Because the project is so near the downstream end of the watershed, this policy is not practical. Storm water infiltration areas would collect and store storm water run-off for percolation and release into new outfall pipes in severe storms and in accordance with the MCWRA and State agency policy.

Best Management Practices (BMPs) used for storm water quality treatment are classified as structural and non-structural. Structural measures may include biofilters, wetlands, infiltration basins or mechanical structures, and are designed to remove pollutants from the storm water. Non-structural measures, such as street sweeping, public education or hazardous substance/recycling centers, are preventative measures intended to control the source of pollutants. Rancho Cañada Village would include both types of BMPs.

The primary structural BMP would be the storm water infiltration areas. These areas should be designed to take advantage of the high percolation rates of the native soils. This would promote infiltration and allow for the removal of pollutants as storm water percolates down through the soil. Because these areas drain the entire site, they would be effective in improving the storm water quality at this portion of Carmel River.

Non-structural BMPs to be used at Rancho Cañada Village would include an ongoing street sweeping program as part of the maintenance of the private streets, a public information package to be distributed to homeowners upon

purchase of their house, and catch basins stenciled with the words “No Dumping – Drains to River."

The proposed storm drainage facilities are shown in Figure 2-7.

Construction

Construction of the Proposed Project is anticipated to take place over a period of several years, depending on a number of factors. The project would be constructed in four phases. The first phase includes 98 residential units and is planned for completion in 2007. The second phase would include 96 residential units and the completion of South Neighborhood Park and North Neighborhood Park. The third phase consists of 87 residential units. The fourth phase consists of the completion of the habitat preserve. Timing of phases 2 through 4 is not discussed in the Specific Plan. It is assumed therefore that the entire project would be constructed within five years of project approval.

Construction of infrastructure (roads and utilities) would be phased in accordance with the needs of the development plan. The final infrastructure plan will detail the improvements, their timing, and their relationship to each other and the development plan.

Grading of the project site would occur concurrently for all phases. Grading would include the movement of approximately 200,000 cubic yards of fill, of which 100,000 would be imported from off site. The Applicant estimates that importation of fill would occur over a period of 28 days and would require 7,200 truckloads of fill material.

Intended Uses of EIR

As indicated above, the EIR is an informational document for decision-makers. CEQA requires that decision-makers review and consider the EIR in their consideration of this project. The County is the lead agency responsible for certifying the EIR and for approving the local land use permits related to the project. Agencies with permit review or approval authority over the project are summarized in Table 2-2. The agencies in Table 2-2 are the responsible agencies under CEQA and will use the EIR as the environmental basis of their decisions.

Table 2-2. Summary of Local, State, and Federal Discretionary Actions

Agency	Permit/Review Required
County of Monterey	CEQA Lead Agency
	Amendment to the Carmel Valley Master Plan, Greater Monterey Peninsula Area Plan, and General Plan related to land use designation and zoning.
	Approval of Specific Plan and Pattern Book.
	Rezoning to Title 21 to incorporate new regulations allowing mixed-use zoning districts and new regulations in the Specific Plan area.
	Combined development permit consisting of a vesting tentative standard subdivision to create 281 mixed-use residential units consisting of 182 single-family dwellings, 64 town-homes, and 35 condominium/flats; approximately 34 acres of open space including two parks and a habitat preserve.
	Use permit for movement/placement of 200,000 cubic yards of soil.
	Use permit for the development of public facilities and installation of infrastructure.
	Monterey County Water Resources Agency approval concerning floodplain management and drainage facilities.
	Monterey County Public Works approval for road improvements
Monterey Peninsula Water Management District (MPWMD)	Potential approval of Cal-Am connection, if pursued. Potential approval of mutual water company.
Monterey County Local Agency Formation Commission (LAFCO)	Creation of a Community Services District (CSD)
State Water Resources Control Board (SWRCB)	Potential approval of assignment of water right from applicant to Cal-Am, if pursued. Potential approval of assignment of water right to Specific Plan development.
California Department of Fish and Game (DFG)	Incidental take permit, if state-listed species affected
	Streambed Alteration Permit, if required
	Trustee agency for biological resources.
Regional Water Quality Control Board (RWQCB)	Waste discharge requirements for Section 402 of the Federal Clean Water Act (CWA); Section 401 of Clean Water Act certification or waiver; General construction stormwater discharge permit
Federal Emergency Management Agency (FEMA)	Approval of Conditional Letter of Map Revision (CLOMR)
U.S. Army Corps of Engineers (USACE)	Permit under Section 404 of the Clean Water Act if jurisdictional waters or wetlands affected
U.S. Fish & Wildlife Service (USFWS)	Approval of incidental take permit if potential for effect on listed wildlife species; consultation under Section 7 of the federal ESA if USACE permit required.

Chapter 3.0
Environmental Analysis

Introduction to the Analysis

Chapter 3 of this Draft EIR contains individual subchapters that describe the potential environmental impacts of the Proposed Project. Each topical section (Chapters 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 Project. In addition, each section includes a discussion of the criteria used in determining the significance levels of the Proposed Project's environmental impacts. Finally, each section recommends mitigation measures, where possible, for significant impacts identified.

Significance of Environmental Impacts

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 project would result in a significant environmental impact when evaluated against the environmental setting baseline conditions. The significance criteria vary depending on the environmental category. In general, effects can be either significant (above threshold) or less than significant (below threshold). In some cases a significant impact may be identified as significant and unavoidable if no feasible mitigation measure(s) is/are available to reduce the impact to a less-than-significant level. If a project is subsequently adopted despite identified significant impacts that would result from the project, CEQA requires the lead agency to prepare and disclose a statement of overriding considerations describing the social, economic, and other reasons for adoption.

Chapter 3.1

Geology, Seismicity, and Soils

Introduction

This chapter provides a discussion of the geology, seismicity, and soils issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of local, state and federal policies and regulations related to geology, seismicity, and soils; and an analysis of direct, indirect, and cumulative environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

The geology, seismicity, and soils impacts from the Proposed Project are summarized in Table 3.1-1 below. The Proposed Project would not have any significant short- or long- term adverse impacts related to geologic, seismic, and soil conditions and hazards in the project area. The project would be designed in accordance with applicable seismic design standards to reduce the risk of damage during an earthquake. Likewise, standard engineering practices would be used to overcome the geologic constraints associated with the expansive soils and unstable hillslopes that were identified in the project area during recent geotechnical investigations performed for the project (ENGEO 2005).

Table 3.1-1 Geology, Seismicity, and Soils Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Seismic Hazards			
GEO-1: Substantial Adverse Effects Resulting From Fault Rupture	NI	None Required	–
GEO-2: Substantial Adverse Effects Resulting From Earthquake-Induced Ground Shaking	LTS	None Required	–
GEO-3: Substantial Adverse Effects Resulting From Seismic-Related Ground Settlement	Potentially Significant	GEO-1: Design All Proposed Structures in Accordance with the Requirements of the California Building Code, Current Edition, and Recommendations Contained in the Site-Specific Geologic and Geotechnical Reports	LTS
GEO-4: Substantial Adverse Effects Resulting From Earthquake-Induced Liquefaction	LTS	None Required	–
B. Landslides and Slope Stability			
GEO-5: Substantial Adverse Effects Resulting From Landsliding	Potentially Significant	GEO-2: Implement Recommended Grading and Slope Design Criteria of the Site-Specific Geotechnical Reports	LTS
C. Erosion			
GEO-6: Accelerated Soil Erosion and Sedimentation	Potentially Significant	GEO-3: Prepare and Implement an Erosion and Sediment Control Plan	LTS
D. Soil Constraints			
GEO-7: Substantial Adverse Effects Resulting from Expansive Soils	Potentially Significant	GEO-4: Remove Localized Zones of Overly Loose Materials	LTS
GEO-8: Substantial Adverse Effects Resulting from Loss of Topsoil	LTS	None Required	–
GEO-9: Effects of Septic Systems on Soils	NI	None Required	-

Note: LTS=Less than Significant, NI=No Impact

Environmental Setting

The following sections describe existing conditions in the project study area with regard to geology, soils, and seismicity. Information in the following sections

was derived from sources in the published geologic and soils literature and from the soils (geotechnical) report prepared for the project. No additional fieldwork was performed for this Draft EIR.

Methodology

Literature Reviewed

The following literature was reviewed for analysis of geologic, seismic, and soil conditions found in the proposed Rancho Cañada Village project area.

- California Division of Mines and Geology. 2000. Digital images of official maps of the Alquist-Priolo earthquake fault zones of California, Central Coast Region. (DMG CD 2000-04) (CD-ROM version).
- California Geological Survey. Seismic Hazards Mapping Program website. Accessed June 2006, < http://www.conservation.ca.gov/cgs/shzp>. 2006.
- ENGEO. 2004. Geotechnical Exploration, Rancho Cañada Village, Carmel Valley, California. Prepared for Lombardo Land Group-1.San Ramon, CA.
- Hart, E. W., Bryant, W.A. 1997. Fault-Rupture Hazard Zones in California – Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. (Special Publication 42.) Sacramento, CA: California Division of Mines and Geology.
- International Conference of Building Officials. 1998. Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada.
- International Conference of Building Officials. 1997. Uniform Building Code. Whittier, CA.
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- Monterey, County of. 1984. Greater Monterey Peninsula Area Plan. Monterey County, CA.
- Monterey, County of. 1982. Monterey County General Plan. Monterey County, CA.
- Norris, R. M., Webb, R. W. 1990. Geology of California, 2nd Ed. New York: John Wiley and Sons, Inc.
- U.S. Department of Agriculture Soil Conservation Service. 1978. Soil Survey: Monterey County, California.

Geotechnical Investigations

In order to obtain baseline information on existing geologic, seismic, and soil conditions, a series of site-specific geotechnical investigations was conducted by ENGEO on October 20, 2003, March 3, 2004, and July 22 and 23, 2004. The

resulting geotechnical report, prepared by ENGEO on April 20, 2004 and subsequently revised on September 14, 2005, is summarized and supplemented with additional information herein.

Existing Conditions

Geologic Setting

The project study area is located in the Carmel Valley, a broad alluvial low that drains westward via the Carmel River into the Pacific Ocean. The rolling hills that immediately surround the valley lie within the Coast Ranges geomorphic province, which is characterized by a series of northwest trending mountains and valleys (Norris and Webb 1990).

The Coast Range province is geologically complex. Regional geomorphic features within the Carmel and Monterey areas are related to complex tectonics of the San Andreas fault/plate boundary system. West of the San Andreas fault zone, the core of the Coast Range Mountains is underlain by Cretaceous granitic basement rock referred to as the Salinian block. Overlying the Salinian Block is a thick layer of Cretaceous and Tertiary sedimentary rocks, which is in turn overlain by late Pleistocene or early Holocene alluvial deposits consisting of poorly consolidated clay, silt, sand, and gravel (ENGEO 2004).

Soils

Soils on the project site have been mapped primarily as Pico fine sandy loam. Floodplain areas adjacent to the river channel are situated on Metz fine sandy loam and Tujunga fine sand, 0 to 5 percent slopes, while areas located nearer to Carmel Valley Road consist of Santa Ynez fine sandy loam, 2 to 9 percent slopes. The following sections provide additional information on the soil units of the project study area.

Pico fine sandy loam

Pico fine sandy loam is a nearly level soil that is found primarily on flood plains. The surface layer typically consists of a grayish-brown, mildly to moderately alkaline fine sandy loam about 18 inches thick. Soils in this series are well-drained; permeability is moderately rapid and runoff is slow. The shrink-swell potential of Pico fine sandy loam is typically low. Risk of corrosion is high for uncoated steel and low for concrete (SCS 1978).

Metz fine sandy loam

Metz fine sandy loam is a nearly level soil on flood plains. The surface layer typically consists of light brownish gray, moderately alkaline, stratified fine sand, sand, and very fine sandy loam extending to a depth of more than 60 inches. Soils of this series have a moderate permeability in the upper layers, but drain more rapidly at depths of 48 inches or more in some places. Runoff is typically slow, and erosion hazard is slight. The shrink-swell potential of Metz fine sandy loam is typically low. Risk of corrosion is high for uncoated steel and low for concrete (SCS 1978).

Tujunga fine sand, 0 to 5 percent slopes

Soils in the vicinity of the Carmel River are mapped as Tujunga fine sand, 0 to 5 percent slopes, which typically occurs on flood plains and alluvial fans, mainly in small, narrow areas along drainage ways. The surface layer consists of light brownish gray, slightly acid fine sand about 10 inches thick, which is underlain by pale brown and light gray, slightly acid and mildly alkaline fine sand and sand that extends to a depth of more than 60 inches. Tujunga fine sand is somewhat excessively drained; runoff is very slow, and the erosion hazard is slight, but some channel erosion does occur. The shrink-swell potential of Tujunga fine sand, 0 to 5 percent slopes is typically low. Risk of corrosion is low for uncoated steel and low for concrete (SCS 1978).

Santa Ynez fine sandy loam, 2 to 9 percent slopes

The Santa Ynez soil series consists of moderately well drained soils on alluvial terraces. The surface layer is grayish brown and gray, medium acid fine sandy loam about 20 to 30 inches thick and is underlain by a 2-inch subsurface layer of light brownish gray, medium acid fine sandy loam. Runoff is slow or medium, and the erosion hazard is slight or moderate. The shrink-swell potential of Santa Ynez fine sandy loam, 2 to 9 percent slopes is typically low. Risk of corrosion is moderate for uncoated steel and low for concrete (SCS 1978).

Seismicity

Primary Seismic Hazards – Surface Fault Rupture and Groundshaking

Numerous active[1] faults have been mapped in the regional vicinity of the project study area; and the project study area lies within the 'Low to Very High' seismic hazard zone in Figure 5 of the Greater Monterey Peninsula Area Plan (GMPAP 1984). The Uniform Building Code (ICBO 1997), which recognizes as active

[1] An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (defined by the State as including about the last 11,000 years) (Hart 1992).

some faults that are not currently included under the Alquist-Priolo Act, shows no active faults in the immediate site vicinity. The risk of surface rupture in the project study area is thus considered minimal.

The project site does, however, have the potential to experience strong groundshaking as a result of seismic activity on any of the area's principal active faults; Figure 3.1-1 shows the position of the project study area in relation to principal faults of the Central Coast Region. Nearby active or potentially active faults include the Tularcitos fault, located about 3 miles northeast of the site; the San-Gregorio-Palo Colorado fault, located approximately 5 miles west of the site; and the Rinconada fault, located approximately 12 miles east of the site (ENGEO 2004). All of these faults are classified as Type B seismic sources, as defined in the 1997 UBC and the CBC (1998). These codes define three seismic source types: A, B, and C. Type A faults, such as the San Andreas Fault System, are those with an average annual sliprate greater than 5 mm per year and the potential to generate a moment magnitude (Mw) earthquake of at least 7.0. Type C faults are those with a slip rate of 2 mm or less per year and a maximum moment earthquake of less than 6.5. Type B faults, the largest grouping, are all active faults not defined as Type A or C (ICBO 1998).

Secondary Seismic Hazards – Liquefaction and Ground Settlement

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 conditions and certain 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 ground shaking potential (i.e., proximity to active faults).

The potential for liquefaction to occur in the Monterey region has not yet been evaluated directly by the U. S. Geological Survey or the California Geological Survey (CGS 2006). However, the site-specific geotechnical investigation performed for the Proposed Project suggests that most soils and sediments underlying the site do not have a high susceptibility to liquefaction or liquefaction-induced ground failure. In one area south of the proposed development envelope, the investigation encountered a thick liquefiable subsurface layer, overlain by an insufficient layer of nonliquefiable surface materials, that was judged as having the potential to induce ground failure during a very strong seismic groundshaking event. However, the location of the deposit was determined to be of little consequence to the Proposed Project, since ground failure in that location would primarily affect an area of open space (ENGEO 2004).

In addition to the liquefaction hazards discussed previously, the investigation found that densification of the sandy soils above and below groundwater levels could result in ground settlement 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 within the residential development area (ENGEO 2004).

Landslide Hazards

As stated above, the State of California has not yet issued seismic hazard maps for the Monterey 7.5′ quadrangle (see CGS 2006). However, slope gradients in the immediate vicinity of the project study area are gentle, and existing risk of slope failure, including seismically induced landslides, is low. Figure 2-9 in Chapter 2, *Project Description* depicts existing slope gradients in the project area, which are generally between 0 and 19%. A few areas on the project area have slopes between 20 and 30%, which correspond to the riverbanks and other water features of the existing golf course. Very few areas have slopes with gradients above 30%.

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of geology, seismicity, and soils impacts of the Proposed Project.

Federal Policies and Regulations

There are no relevant federal policies that regulate geologic, soils or seismic related resources that would apply to the Proposed Project.

State Policies and Regulations

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning 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 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).

California Building Code

The California Building Code is included in Title 24 of the California Code of Regulations (CCR), and composes part of the California Building Standards Code. The California Building Code incorporates the Uniform Building Code (UBC), a widely adopted model building code in the United States. The California Building Code also includes necessary California amendments and expands on the UBC by providing more stringent standards addressing reduction of earthquake risk to structures in this seismically active state.

Chapter 16 of the CBC deals with General Design Requirements, including (but not limited to) regulations governing seismically resistant construction (Chapter 16, Division IV) and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapters 18 and A33 deal with site demolition, excavations, foundations, retaining walls, and grading, including requirements for seismically resistant design, foundation investigations, stable cut and fill slopes, and drainage and erosion control. Among other things, the CBC defines different building regions in the state and ranks them according to their seismic hazard potential. There are four types of these regions: Seismic Zones 1 through 4, with Zone 1 having the least seismic potential and Zone 4 having the highest seismic potential. The project site is located within Zone 4, as is much of western California. Of the four seismic zones designated in the United States, Zone 4 is expected to experience the greatest effects from earthquake ground shaking and therefore has the most stringent requirements for seismic design.

Other Laws and Regulations

Other laws pertaining to hazardous materials include the Safe Drinking Water and Toxic Enforcement Act (Proposition 65) and the California Government Code, Section 2.65962.5, which require the Office of Permit Assistance to compile a list of potentially contaminated sites throughout the state.

Local Policies and Regulations

Monterey County General Plan

The Monterey County General Plan contains the following policies that are intended to help avoid or mitigate geologic and seismic hazards.

Geology, Minerals, and Soils

Policies:

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

3.1.2: The County shall support and encourage existing special district, state, and federal soil conservation and restoration programs within its borders.

3.1.3: In the absence of more detailed site specific studies, determinations of soil suitability for particular land uses shall be made according to the Soil Conservation Service's Soil Survey of Monterey County.

Seismic and Other Geologic Hazards

Policies:

15.1.3: Lands within 1/8 mile of active or potentially active faults shall be treated as a fault zone until accepted geo-technical investigations indicate otherwise.

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.

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.

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.

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.

15.1.13: The County shall require septic leachfields and drainage plans to direct runoff and drainage away from unstable slopes.

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.

Monterey County Building Code

The California Building Code, 2001 Edition, Volumes 1 and 2, published by the California Building Standards Commission and the International Conference of Building Officials, is adopted and incorporated, with subsequent amendments, into the Monterey County Building Code. All building guidelines used for the Proposed Project will be dictated by the Monterey County Building Code.

Monterey County Grading Regulations

The County has a grading and erosion control ordinance to guide proper construction practice, limit erosion, and ensure safety for construction-related activities. A grading permit is typically required for most construction-related projects within Monterey County, as required by Monterey County Code Chapter 16.08. Exceptions include excavations and fills not exceeding the County's specified thresholds; excavations and fills for basements and footings of a building as authorized by a valid building permit; and excavations required for cemetery graves; permitted refuse disposal sites, utility trenches and wells; mining, soil testing, and agricultural work.

As part of this permit, the project applicant is required to submit a grading and erosion control plan, vicinity and site maps, and other supplemental information. Standard conditions in the grading permit include an extensive list of best management practices (BMPs) similar to those contained in a stormwater pollution prevention plan (SWPPP). All grading operations for which a permit is required are subject to inspection by the Director of Building Inspection, or an engineer responsible for field inspection of his or her approved plans. In addition to meeting the conditions of the grading permit, the project applicant is required to uphold specific design standards, as adopted and/or amended by the County from the CBC, related to cuts and fills, erosion control devices or methods, and drainage facilities.

Carmel Valley Master Plan

The Carmel Valley Master Plan is part of the Monterey County General Plan. As such, the policies outline in the CVMP and summarized below must be considered in conjunction with the Monterey County General Plan.

Natural Resources: Geology, Minerals, and Soils

Policies:

3.1.1.1: 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.

3.1.1.2: 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.

3.1.1.3: 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).

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

3.1.5: 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.

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

Emergency Response Planning

The County has adopted a comprehensive plan dealing with emergency response, including response to emergency earthquake, major fire, and flooding situations. The current Monterey County Emergency Plan is reviewed and updated yearly.

Impact Analysis

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:

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%.

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 California Building Code (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.
- Result in substantial soil erosion or the loss of topsoil.
- 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.

Assessment Methodology

Potential impacts related to geology, seismicity, and soils were analyzed qualitatively, based on a review of available data and information for the Proposed Project area. Analysis focused on the Proposed Project's potential to increase the risk of personal injury, loss of life, and damage to property,

including project facilities, as a result of existing or reasonably foreseeable geologic, seismic, and soil conditions in the project area.

Impacts and Mitigation Measures

A. Seismic Hazards

Impact GEO-1: Substantial Adverse Effects Resulting From Fault Rupture (No Impact)

No active or inactive faults cross the Proposed Project site; the site is not within any Earthquake Fault Zone designated by the state under the Alquist-Priolo Earthquake Fault Zoning Act (CDMG 2000); and the Uniform Building Code (ICBO 1998) shows no active faults in the immediate site vicinity. Consequently, the Proposed Project is unlikely to increase exposure of people or structures to hazards related to surface fault rupture. Therefore, *no impact* is anticipated, and no mitigation is required.

Impact GEO-2: Substantial Adverse Effects Resulting From Earthquake-Induced Ground Shaking (Less than Significant)

The project site has the potential to experience strong groundshaking as a result of seismic activity on any of the region's principal active faults, and could expose people or structures to potential substantial adverse effects. All structures are required to be designed to meet or exceed the Monterey County Building Code requirements as adopted from the CBC. These codes include a wide variety of stipulations relevant to reducing earthquake-related risk, including foundation and structural design, and structural tolerances. Conformance to these codes does not constitute a guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake, but it would reduce the potential for structural damage resulting from a major earthquake to a less-significant level. Therefore, this impact is anticipated to be *less than significant.* No mitigation is required.

Impact GEO-3: Substantial Adverse Effects Resulting From Seismic-Related Ground Settlement (Less than Significant with Mitigation)

As discussed in the setting, site settlement due to densification of sandy soils onsite could result in differential settlement of up to 4 inches within the residential development area. This is considered to be a *potentially significant* impact. However, with the implementation of the following mitigation measure, this impact would be reduced to l*ess-than-significant* levels.

Mitigation Measure GEO-1: Design All Proposed Structures in Accordance with the Requirements of the California Building Code, Current Edition, and Recommendations Contained in the Site-Specific Geologic and Geotechnical Reports

To minimize the potential for damage from seismic-related ground settlement, the applicant will assure that all proposed structures are designed in accordance with the most current and appropriate California Building Code standards and with recommendations made by the geotechnical reports prepared for the project (ENGEO 2006). In addition, the applicant shall implement any recommendations made by the engineer of record during the final stages of project design.

Impact GEO-4: Substantial Adverse Effects Resulting From Earthquake-Induced Liquefaction (Less than Significant)

As discussed in the setting section, one area south of the proposed development envelope contains a thick liquefiable subsurface layer, overlain by an insufficient layer of nonliquefiable surface materials, that has the potential to induce ground failure during a very strong seismic groundshaking event. However, the location of the deposit was determined to be of little consequence to the Proposed Project, since ground failure in that location would primarily affect an area of open space and would not pose a substantial risk to any habitable structures. This impact would be *less-than-significant*.

B. Landslides and Slope Stability

Impact GEO-5: Substantial Adverse Effects Resulting From Landsliding (Less than Significant with Mitigation)

Slope gradients in the immediate vicinity of the Proposed Project site are gentle, and no existing landslide hazard has been identified. Creation of cut slopes and fill embankments during project construction could, however, lead to a risk of localized slope failure if the slopes are improperly designed or implemented. Potential construction and placement of structures on steep slopes and manufacture of steep slopes are considered significant impacts, however they would be mitigated to a *less-than-significant* level with the implementation of the following mitigation measure.

Mitigation Measure GEO-2: Implement Recommended Grading and Slope Design Criteria of the Site-Specific Geotechnical Reports

In order to reduce the potential for slope failure to occur, specific design measures, as recommended in the geotechnical investigation (ENGEO 2005), shall be incorporated into the project by the applicant. Such measures shall include:

- the removal of loose or compressible surface soils from all areas to receive fill, followed by scarification, moisture conditioning, and recompaction to create a firm, non-yielding base, and replacement with engineered backfill;
- grading operations shall meet the requirements of the Guide Contract Specifications included in the geotechnical report (ENGEO 2005)
- the grading of cut and fill slopes to a gradient of no steeper than 2:1;
- construction of a subdrained keyway[2] system;
- and implementation of a site drainage plan to divert surface drainage away from potentially unstable foundation systems

In addition to incorporating the recommendations of the site-specific geotechnical studies, all earthwork shall conform with applicable design standards of the UBC and the County. All design and construction activities shall be conducted by or under the supervision of a registered geological engineer or engineering geologist, and are subject to review by the County through the grading permit and construction oversight process.

C. Erosion

Impact GEO-6: Accelerated Soil Erosion and Sedimentation (Less than Significant with Mitigation)

Implementation of the Proposed Project would involve a substantial amount of earthwork to create the proposed subdivision lots and install necessary utilities. This earthwork would result in extensive soil and vegetation disturbance that would increase the potential for accelerated runoff, erosion, and sedimentation during project construction. This is considered to be a *potentially significant* impact but would be reduced to a *less-than-significant* level with the implementation of the following mitigation measure.

Mitigation Measure GEO-3: Prepare and Implement an Erosion and Sediment Control Plan

The applicant, or a qualified consultant acting on behalf of the applicant, shall prepare and implement an erosion and sediment control plan. The plan shall be prepared in accordance with the requirements of the local erosion and sediment control ordinances. The plan shall contain details and specifications for a variety of standard and site-specific BMP's that will be implemented to control wind and water erosion, stormwater runoff, sediment, and other construction-related pollutants during project construction. The Erosion and Sediment Control Plan shall remain in effect until all areas disturbed during construction have been revegetated or otherwise permanently stabilized. Additional measures may be prescribed during the final stages of project design and construction. The Erosion and Sediment Control Plan for the Proposed Project shall be submitted to

[2] A "keyway" is an excavated & backfilled trench beneath the toe of a proposed fill slope. It serves to anchor and support the fill slope.

Monterey County Planning and Building Inspection Department for review and approval prior to issuance of any grading permit. This measure can be combined with requirements of Mitigation Measure HYD-2 (see Chapter 3.2, *Hydrology and Water Quality*) to prepare a SWPPP in compliance with NPDES general construction permit requirements.

D. Soil Constraints

Impact GEO-7: Substantial Adverse Effects Resulting from Expansive Soils (Less than Significant with Mitigation)

Although the shrink-swell potential of the native soil and bedrock materials is typically low within the project area, the presence of slightly more expansive soils may be encountered as the golf course topographic mounds and swales are disturbed during grading, or if imported soils are used to establish finished building pad grades above potential flood elevations. Loose or compressible surface soils encountered during grading should be addressed and mitigated in order to create a suitable base for building pads, areas to receive fill, or for shallow cut areas that do not extend below this zone. The inclusion of the following mitigation measure in conjunction with Mitigation Measure GEO-1 would reduce this impact to a *less-than-significant* level.

Mitigation Measure GEO-4: Remove Localized Zones of Overly Loose Materials

The applicant shall implement the recommended design criteria of the geotechnical report prepared for the project (ENGEO 2005). These criteria relating to include the following measures:

- Localized zones of overly loose materials shall be removed to a firm, non-yielding base, then scarified, moisture condition, if necessary, and recompacted to create a suitable foundation soil prior to fill placement.
- The spatial extent shall include at least the area encompassed by the building footprint plus a horizontal buffer of 5 feet surrounding the building footprint.
- The actual depth for reworking should be determined by a qualified geotechnical engineer at the time of grading.

The applicant shall also implement all other relevant soil recommendations detailed in the geotechnical report.

Impact GEO-8: Substantial Adverse Effects Resulting from Loss of Topsoil (Less than Significant)

Surface soils on the existing site have undergone varying degrees of disturbance and thus offer little topsoil value. In addition to having numerous artificial

mounds and depressions, the site landscaping consists of many non-native species of trees, shrubs, and grasses. Given the highly disturbed nature of the site, further disturbance by construction activities would not result in a significant loss of topsoil. Therefore, this impact is expected to be *less than significant,* and no mitigation is required.

Impact GEO-9: Effects of Septic Systems on Soils (No Impact)

Septic systems, including the use of tanks and alternative disposal systems, are not included as part of the project design. New sewer connections to the main sewer trunk located near the project area would serve the proposed housing development Soils needed to adequately support wastewater disposal would not be required. Therefore, the project would have *no impact,* and no mitigation is required.

Chapter 3.2

Hydrology and Water Quality

Introduction

This chapter provides a discussion of the hydrology and water quality issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of local, state, and federal policies and regulations related to hydrology and water quality; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

The hydrology and water quality impacts of the Proposed Project are summarized in Table 3.2-1 below

Table 3.2-1. Hydrology and Water Quality Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Alteration of Drainage Patterns			
HYD-1: Change in Local Drainage Patterns	Potentially Significant	HYD-1: Implement Recommendations of Preliminary Stormwater Management Plan	LTS
HYD-2: Increase in Localized Velocities in the Carmel River	Potentially Significant	BIO-8 [See Chapter 3.3]	LTS
B. Stormwater Runoff and Drainage Infrastructure			
HYD-3: Impacts to Groundwater and Surface Water from Infrastructure Failure	LTS	None Required	

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
C. Water Quality			
HYD-4: Construction-Related Impacts to Surface Water Quality and Groundwater Quality	Potentially Significant	HYD-2: Comply with NPDES General Construction Permit HYD-3: Implement a Spill Prevention and Control Program HYD-4: Implement Measures to Maintain Surface Water or Groundwater Quality	LTS
HYD-5: Water Quality Impacts from Construction Below the Water Table	Potentially Significant	HYD-5: Provisions for Dewatering	LTS
HYD-6: Water Quality Impacts from Increased Runoff	Potentially Significant	HYD-6: Best Management Practices to Maximize Stormwater Quality HYD-7: Comply with Monterey Regional Storm Water Management Program	
D. Groundwater Supply			
HYD-7: Substantially Deplete Groundwater Supplies or Interfere with Groundwater Recharge	LTS	None Required	
E. Risk of Flooding			
HYD-8: Flood Hazard Associated with Placement of Fill in Floodplain	LTS	None Required	
HYD-9: Flood Hazards Associated with Redirection of River Flows	Potentially Significant	HYD-8: Protect Eastern Slope of Excavated Basin HYD-9: Construct Floodwall and/or Reinforce Berm at Western Edge of Project	LTS
F. Risk of Inundation by Seiche, Tsunami, or Mudflow			
HYD-10: Seiche, Tsunami, or Mudflow Hazards	LTS	None Required	LTS

LTS=Less than Significant

Environmental Setting

This section discusses existing conditions related to hydrology and water quality in the project area.

Methodology

The following literature was reviewed for analysis of hydrology and water quality in the proposed Rancho Cañada Village Specific Plan project area.

- Balance Hydrologics, Inc. 2005. Preliminary stormwater management plan for Rancho Cañada, County of Monterey, California. Prepared for Carlson, Barbee & Gibson, Inc., San Ramon, California.
- Balance Hydrologics, Inc. 2005a. Request for conditional letter of map revision, Carmel River, County of Monterey, California.
- Balance Hydrologics, Inc. January 2006. Additional information requested for case number 05-09-2100A444-R, Carmel River, County of Monterey, California.
- Balance Hydrologics, Inc. May 2006. Additional information requested for case number 05-09-A444-R, Carmel River, County of Monterey, California.
- Balance Hydrologics, Inc. June 2006. Public notice of regulatory floodway change and changes to the BFEs on the Carmel River per the Conditional Letter of Map Revision request for Rancho Cañada (FEMA Case Number 05-09-A444R).
- California Department of Boating and Waterways and State Coastal Conservancy. 2002. California beach restoration study. Sacramento, California.
- Carmel River Watershed Conservancy, Inc. 2004. Watershed assessment and action plan of the Carmel River watershed, California.
- Cities of Monterey, Sand City, Del Rey Oaks, Marina, Seaside, and Pacific Grove and the County of Monterey. 2006. Monterey Regional Storm Water Management Program. Revised June 1, 2006. Downloaded from http://www.waterboards.ca.gov/rwqcb3/Public%20Notice/index.htm on September 22, 2006.
- Department of Water Resources (DWR). 2003. California's Groundwater, Bulletin 118 – Update 2003.
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- ENTRIX, Inc. 2006. Draft Environmental Impact Statement/Report for the San Clemente Dam Seismic Retrofit Project. Walnut Creek, California.

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- Monterey Peninsula Water Management District (MPWMD). 2002. 2002 annual report.
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Existing Conditions

General Climate

The Carmel Valley is located 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 high 60s in the summer. Average annual precipitation is 18 to 20 inches, and the majority falls in the winter as rain (Balance Hydrologics 2005a).

Surface Water

The primary surface water feature in the project area is the Carmel River, which borders approximately 1900 feet of the southern edge of the project (Balance Hydrologics 2005a). Figure 3.2-1 depicts the watershed of the project area. The Carmel River originates in the Santa Lucia Range of the Coast Mountains and flows generally north and west. It has a watershed area of 246 square miles at Via Mallorca, about one mile upstream of the project (Balance Hydrologics 2005a). Watershed elevations vary from sea level to 4965 feet at the highest peak, and vegetation consists of primarily chaparral, grasslands and oak woodlands (CRWC 2004).

Peak flows on the Carmel River typically occur between January and March, and large flood events are driven by seasonal storm patterns. There are two dams on the Carmel River: San Clemente and Los Padres. These dams provide limited flood control, as they have about 10% (ENTRIX 2006) and 67% (CDBW and SCC 2002) of their original capacities remaining, respectively, due to sedimentation. They are also operated primarily for water supply, not flood control (CDBW and SCC 2002). Although the river has a fairly large watershed, the lowest reaches of the river often go dry in the late summer months due to water supply withdrawals (ENTRIX 2006). Table 3.2-2 presents the 10-year through 500-year Carmel River flows near the project area (FEMA 1991).

Table 3.2-2. FEMA Flood Insurance Flows

Return Period	10-Year	50-year	100-year	500-year
Flow (cubic feet per second [cfs])	11,000	23,000	29,100	45,000
At USGS Gage Near Carmel				

Project area topography is divided between floodplain and terrace (Figure 3.2-1). Two-thirds of the site consists of floodplain immediately adjacent to the river,

while one-third consists of a terrace in the northwest corner. Project area soils have relatively high infiltration rates, ranging from 2 to 6 inches/hour over most of the site, and from 6 to 20 inches/hour over a small portion of the site. As a result, there appears to have been insufficient overland flow to establish a defined drainage pattern (Figure 2-5). Any existing drainage patterns were likely also altered by construction of golf course topography for the Rancho Cañada Golf Club. Local runoff is currently routed through a series of swales and drainage pipe, and all project area runoff ultimately drains to the Carmel River (Balance Hydrologics 2005a).

Additional site runoff is generated upslope from the project area in two drainages: the eastern drainage is referred to as Drainage Area 26 (DA 26) and the western drainage is referred to as Drainage Area 27 (DA 27) (Balance Hydrologics 2005a).

DA 26 is 199 acres, and runoff travels south to a detention basin system located on Carmel Valley Middle School property adjacent to the project area. The 10-year discharge on DA 26 is estimated to be 28 cfs, while the 100-year discharge is estimated to be 78 cfs. DA 27 is 578 acres, and runoff travels south under Carmel Valley Road to a ditch along the west side of the school property. The ditch ends at a large swale north of the project area, where flows continue to the west towards Val Verde Drive. The 10-year discharge on DA 27 is estimated to be 86 cfs and the 100-year discharge is estimated to be 217 cfs (Balance Hydrologics 2005a).

Groundwater

The project lies within the Carmel Valley Aquifer system, which functions as a water supply source for a large portion of the local area (MCWRA 2002 in Balance Hydrologics 2005a). The California-American Water Company utilizes this aquifer to provide water to 112,000 residents and 3,200 businesses in the greater Monterey Peninsula, and numerous private wells also access the aquifer (MPWMD 2003 in Balance Hydrologics 2005a). Additional new wells must be permitted by the Monterey Peninsula Water Management District (MPWMD 2002).

The aquifer is formed from alluvial material along the Carmel River Valley, and extends from San Clemente Dam to the Carmel River Lagoon at the Pacific Ocean (Balance Hydrologics 2005a). Lowered groundwater levels have been identified as the cause of several negative effects along the river: loss of riparian vegetation and associated bank stability, and reduced steelhead habitat due to low river levels (Balance Hydrologics 2005a). Water levels are typically 5 to 30 feet below the ground surface, and increase rapidly during periods of recharge by the Carmel River (DWR 2003). Water level elevations within the basin fluctuate by 5 to 15 feet during normal water years, and may decline by as much as 50 feet during drought years (DWR 2003).

One of the California-American Water Company wells is located in the project area. Of the 21 wells that the California-American Water Company has along the Carmel River, the Rancho Cañada well is the farthest downstream. The Rancho Cañada well was drilled in 1981. At this well, the groundwater is 15 feet below the surface and pumping occurs at 49 feet below the surface (SWRCB 1995).

In 1995, the SWRCB found that Cal-Am did not have sufficient water rights for its existing water diversions from the Carmel River. SWRCB found that Cal-Am had rights to only 3,376 AFY. SWRCB ordered Cal-Am to do the following: reduce its diversion from the Carmel River to 14,106 AFY immediately; obtain appropriative permits for its diversions; obtain water from other sources to make 1:1 reductions in unlawful diversions; and/or contract with another agency having rights to divert and use water from the Carmel River. Cal-Am was also ordered to implement a water conservation plan to further reduce diversions and to maintain a water conservation program with the goal of limiting annual diversions to 11,285 AFY until full compliance with the order was achieved (SWRCB 1995). SWRCB (in Decision D-1632, as amended in Order WR 98-04) has also determined that the Carmel River is a "fully appropriated stream" from the mouth of the river upstream to the Sleepy Hollow Gage (RM 17.2) between May 1 through December 31 and that SWRCB has permit authority in this reach. Certain existing diversions present prior to Decision D-1632 are allowed to apply for a permit to allow diversion between May and December; all other applicants must limit their diversions to between January and April.

Water supply related to the proposed project is discussed further in Section 3.10, *Public Services, Utilities, and Recreation*.

Flooding

Major flood events have occurred in Monterey County during 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 [MCWRA] 2003). Flooding has occurred along the Carmel River on multiple occasions. Some private levees have been constructed along the Carmel River downstream of the project area, although they are not adequate to hold the 100-year flood (FEMA 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 cfs was spilling over San Clemente Dam), and in 1958 (numerous homes along the Carmel River were flooded) (FEMA 1991).

In more recent history, two flooding events occurred along the Carmel River in 1995, one in January and one in March. 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 (MCWRA 2003). Aerial photographs taken in March 1995 (MCWRA 2006) and February 1998 (MCWRA 2003) indicate that during both

of these most recent flooding events, flooding occurred on the Rancho Cañada golf course.

At the USGS gage near Carmel, the 100-year flow has been estimated to be 29,100 cfs. Within the project area, the water surface elevations at the 100-year flow (the Base Flood Elevations) range from 34 feet NGVD at the downstream end of the project area to 40.5 feet NGVD at the upstream end of the project area (Balance Hydrologics 2005b). As shown in 3.2-2 approximately 58 acres of the project area is within the FEMA-designated 100-year floodplain of the Carmel River (Balance Hydrologics 2005b). In addition, 36 of these 58 acres are located within the regulatory floodway (Balance Hydrologics 2005b). 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).

A Conditional Letter of Map Revision has been approved by the Army Corps of Engineers, effectively moving the floodplain and floodway boundaries so that none of the development area would be located within the floodway or floodplain. A portion of the northern Carmel River floodplain will be excavated to provide fill material for a building pad; all structures will be placed on this building pad above the Base Flood Elevation and therefore outside of the 100-year floodplain. In addition, no fill will be placed within the regulatory floodway. (Balance Hydrologics 2005b.)

Water Quality

Surface Water Quality

The Carmel River is not listed by the State as an impaired water body pursuant to the Clean Water Act Section 303(d). Water quality in the Carmel River has been measured by the 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 (in ºF), dissolved oxygen (in milligrams per liter [mg/L]), pH, carbon dioxide (in mg/L), specific conductance (in microSiemens/cm [uS/cm]) and turbidity (in nephelometric turbidity units [NTU])(MPWMD 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 (MPWMD 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 uS/cm, with an average of 267 uS/cm over the sampling period (MPWMD 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(MPWMD 2004).

No water quality data are available for local project area runoff. The project site is currently in use as a golf course, and local runoff is likely to contain phosphorus, nitrogen, and fine sediments.

Groundwater Quality

Groundwater quality constituents of concern in the Carmel Valley Groundwater Basin are nitrates from septic tanks, iron and manganese. Data collected by MPWMD in 1995–1996 indicated that nitrate concentrations in the basin, however, are actually much lower than State drinking water standards (MPWMD 1997 in DWR 2003). Groundwater withdrawals for water supply in the lower portion of the basin must be treated for iron and manganese prior to distribution. (EIP Associates 1993 in DWR 2003).

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of hydrology and water quality in the Proposed Project area being considered by Monterey County.

Local Policies and Regulations

Monterey County General Plan

Objectives and policies defined in the Monterey County General Plan and relevant to the project 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.

Policy 16.2.3: All new development for which a discretionary permit is required, including filling, grading, and construction, shall be prohibited within 200 feet of the riverbank or within the 100-year floodway except as permitted by ordinance. No new development, including structural flood control projects, shall be allowed within the riparian corridor. However, improvements to existing dikes and levees shall be allowed if riparian vegetation damage can be minimized and at least an equivalent amount and quality of replacement is planted. In addition, exceptions may be made for carefully sited recreational trails.

Policy 16.2.4: All new development, including filling, grading, and construction, within designated 100-year floodplain areas shall conform to the guidelines of the National Flood Insurance Program and policies established by the County Board of Supervisors, with the advice of the Monterey County Flood Control and Water Conservation District.

Policy 16.2.5: All new development, including filling, grading, and construction, proposed within designated floodplains shall require submission of a written assessment prepared by a qualified hydrologist/engineer on whether the development will significantly contribute to the existing flood hazard. Development shall be conditioned on receiving approval of this assessment by the County Flood Control and Water Conservation District.

Objective 21.1: 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 21.2.3: Residential, commercial, and industrial developments which require 20 or more parking spaces shall include oil, grease, and silt traps, or other suitable means, as approved by the Monterey County Surveyor, to protect water quality; a condition of maintenance and operation shall be placed upon the development.

Policy 21.2.4: The County shall require the installation and maintenance of appropriate check valves on irrigation systems where liquid fertilizers are dispensed.

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 project 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. As such, the policies outlined in the Carmel Valley Master Plan and summarized below must be considered in conjunction with the Monterey County General Plan.

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 3.1.11 (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 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 16.2.3.1 (CV) In order to protect the public health, welfare, and safety, development of land within 200 feet of the nominal Carmel River bank or 30 feet from any tributary bank as shown on the latest United States Geological Survey Topographic Maps shall require a special permit as set forth in the Carmel Valley Floodplain Ordinance. Where development of such an area may not be feasible due to public health, welfare and safety consideration. Density may be transferred from this area to other areas within a parcel.

Policy 16.2.10 (CV) No changes in zoning from FP-2 (stream overflow and backwater areas) to FP-3 (areas protected by dikes or levees) will be permitted except in areas with existing dikes. Also, no new FP-3 District shall be created.

Policy 35.1.3 (CV) Development shall be so designed that additional runoff, additional erosion or additional sedimentation will not occur off of the development site.

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.

Monterey County Floodplain Ordinance

Regulations for floodplains in Monterey County are contained in Chapter 16.16 of Monterey County Code.

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' located within the area of Special Flood Hazard. There are more restrictive regulations for development within the FEMA-defined floodway.

State Policies and Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, passed in 1969, articulates with the federal CWA (see the *Clean Water Act* section above). It established the SWRCB and divided the state into nine regions, each overseen by an RWQCB. The SWRCB 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 SWRCB 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) (CCRWQCB 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 material, suspended material, 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.

Beneficial uses of groundwater in the project area include domestic and municipal use, agricultural supply and industrial use. Water quality objectives have been set for groundwater regarding bacteria, chemical constituents, organic chemicals, radioactivity, and tastes and odors.

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 storm water pollution prevention plan (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.

Coverage under both the General Construction Permit is expected to be required as part of the Proposed Project.

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 Project 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 is applicable to the Rancho Cañada Village development if there will be any excavation below the water table where dewatering activities will 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 storm water 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 storm water program.

To obtain an MS4 permit, it is necessary for operators of small MS4s to create a storm water 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 (RWQCB 2006a). The SWMP includes unincorporated urban areas of Monterey County. The Rancho Cañada project is located within Monterey County urbanized area C (RWQCB 2006b) and would be subject to following the SWMP guidelines.

Other NPDES Permits

All point source discharges to waters of the United States not covered by a general permit are required to apply for an individual NPDES permit with the RWQCB. The RWQCB then issues WDRs and monitoring provisions to ensure compliance with the CWA standards. For the Proposed Project, brine disposal is

anticipated to require an individual NPDES permit. Brine disposal may be conducted through connection to the MRWPCA outfall in the Monterey Bay, or through installation of brine disposal wells at the former Fort Ord. The MRWPCA outfall is already covered under an individual NPDES permit and WDRs. If MPWMD were to choose this disposal option, the project would need to amend MRWPCA's permit to accommodate the discharge from the desalination plant. Under the brine disposal well option, MPWMD would need to obtain a new NPDES permit and WDRs directly from the RWQCB.

Section 1600-1607 of the California Fish and Game Code

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.

Federal Policies and Regulations

Clean Water Act

The California SWRCB 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 SWRCB through regional boards established throughout the state. The Central Coast Regional Water Quality Control Board (CCRWQCB) is the agency responsible for regulating discharges in the Carmel River Valley.

The Clean Water Act (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 of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the Porter-Cologne Water Quality Control Act of 1969 (PCWQCA). 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 project 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 Regional Water Quality Control Boards (RWQCBs) in California. Under the CWA, the state (via 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 SWRCB 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. Project proponents must obtain a permit from the USACE 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 USACE protocols in order to determine whether the project 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 Rancho Cañada Village development involves dumping any fill material, then this permit will be applicable.

Regulations Covering 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. The locations of FEMA-designated floodplains in the project area are included in the discussion of physical setting above.

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, and
- restore and preserve natural and beneficial floodplain values.

Impact Analysis

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 under the following conditions:

A. Alteration of Drainage Patterns

- Substantially alter the existing drainage pattern of the site or area, including changes that result in substantial erosion or siltation on- or off-site.

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.
- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade groundwater quality.

D. 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.

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

- Expose people, structures, or facilities to increased risk of inundation by seiche, tsunami, or mudflow.

Assessment Methodology

The evaluation of hydrology and water quality effects is based on professional standards and the conclusions of technical reports prepared for the project area. The key effects were identified and evaluated based on the physical characteristics of the project area and the magnitude, intensity and duration of activities. It is assumed that the Rancho Cañada Specific Plan will conform to County building standards, grading permit requirements and erosion control requirements.

Impacts and Mitigation Measures

A. Alteration of Drainage Patterns

Impact HYD-1: Change in Local Drainage Patterns (Less than Significant with Mitigation)

The project area is currently a golf course, with open space and generally pervious surfaces. Implementation of the Proposed Project would result in the construction of impervious surfaces associated with the creation of housing and vehicle access, thereby preventing precipitation from infiltrating and causing it to pond or runoff. Development would therefore increase runoff, potentially causing flooding on site.

In addition, two off-site watersheds generate flows that pass through or immediately adjacent to the project area. Implementation of the project could create flooding hazards associated with flows originating in these drainages. A preliminary stormwater management plan (Balance Hydrologics 2005a) has been prepared to address stormwater requirements for the project. This report covers the following topics:

- Calculation of pre-development runoff conditions and post-development runoff scenarios using appropriate engineering methods. The model accounted for increased surface runoff.
- Calculation of groundwater recharge rates.
- Description of the proposed stormwater management infrastructure.
- Description of methods to manage stormwater quality and groundwater recharge, and approach to controlling peak flows.

This impact is considered *potentially significant*. Implementation of Mitigation Measure HYD-1 would ensure that the impact would be lowered *below significance thresholds*.

Mitigation Measure HYD-1: Implement Recommendations of Preliminary Stormwater Management Plan

The measures identified in the preliminary stormwater management plan will be implemented to maintain on-site infiltration and control peak flows.

Flows originating in Drainage Area 26 (DA 26) will be collected downstream of the existing detention basin system on the Carmel Valley Middle School property and routed through the project area in a new storm drain line. This line will also collect runoff from the eastern portion of the developed area. A second on-site drainage line will be installed to collect runoff from the western portion of the developed area; both lines will be routed to stormwater infiltration areas in the southern portion of the project. Flows generated in Drainage Area 27 (DA 27) will be collected in a new 84-inch diameter regional storm drain line near the northwest corner of the project area and routed under the Rio Road extension to the Carmel River.

Stormwater from the project will be routed to two stormwater infiltration areas located on the northern Carmel River floodplain. The infiltration system will be designed to infiltrate runoff from small to moderate rainfall events, for a total of at least 85 percent of annual stormwater runoff volume.

Peak flows generated within the eastern portion of the project area will increase from 5 cfs to 21 cfs for the 10-year storm, and from 8 cfs to 31 cfs for the 100-year storm. Peak flows generated within the western portion of the project area will increase from 9 cfs to 36 cfs for the 10-year storm, and from 13 cfs to 54 cfs for the 100-year storm. Peak stormwater flows generated within the project area will be routed directly to the Carmel River without detention. Peak flows on the Carmel River generally occur several hours later than local runoff peak flows at this location. Utilizing direct conveyance of local runoff to the river ensures that the two peak flows are not coincident and that stormwater produced within the project area does not increase peak flows on the Carmel River.

Impact HYD-2: Increase in Localized Velocities in the Carmel River (Less than Significant with Mitigation)

Placing fill in a portion of the northern Carmel River floodplain as part of the Rancho Cañada project will affect velocities during flood flows in both the main river channel and along the right overbank.

Based on a relatively frequent 10-year recurrence interval flow, velocities in the main channel will increase markedly for a short distance (about 100 feet) at a location roughly parallel with the eastern end of the proposed development. Velocities in this area increase from 4 feet per second (fps) in the pre-project condition to 8 fps under post-project conditions. This would cause a corresponding increase in shear stress, which in turn indicates that movement of larger sediment size is possible under post-project conditions. Based on the critical shear stress diagram, bed material up to 70 mm in diameter can move under existing conditions and bed material greater than 100 mm in diameter

could move under post-project conditions. This indicates that some local scouring of the river channel may occur at this location, but extensive channel adjustment (degradation or erosion) is not expected because of the limited extents of increased velocities. The channel is expected to adjust to the change in velocities, eventually reaching a new equilibrium. Local bank erosion could occur during this period. If this occurs, then there could be loss of riparian vegetation along the eroded bank. These impacts are considered *potentially significant*. Implementation of Mitigation Measure BIO-8 described in Chapter 3.3, *Biological Resources*, would ensure that this impact would be lowered to *less-than-significant* levels.

Velocities in the right overbank increase substantially in one location under post-project conditions: at the eastern end of the proposed excavated basin. Velocities in this area increase from 1.5 fps to 3.7 fps. This creates a corresponding increase in shear stress. Based on the critical shear stress diagram, bed material up to 4 mm in diameter can move under existing conditions, while bed material up to 42 mm in diameter can move under post-project conditions. This indicates that erosion could occur in the right overbank at this location under bare-earth conditions. Maintenance of vegetation in this area would reduce the potential for erosion. Application of the planting plan defined in the Rancho Cañada Village Draft Restoration and Mitigation Plan for this area would ensure that this potential impact would be lowered to *less-than-significant* levels.

Impact HYD-9 below, considers impacts to infrastructure (such as project detention basins and an adjacent berm west of the project) outside the channel related to flood flows separately.

B. Stormwater Runoff and Drainage Infrastructure

Impact HYD-3: Impacts to Groundwater and Surface Water from Infrastructure Failure (Less than Significant)

The project will include the installation of infrastructure such as water supply and wastewater pipelines. The possibility of a pipeline rupturing due to exceedances of pipeline or tank capacity, improper design, installation, maintenance, seismic activity, or other catastrophic events could pose a negative impact on water quality resulting from increased erosion and sediment, as well as discharge of any contaminants contained in the water released from the pipeline (e.g., sewage from influent pipelines). The infrastructure system(s) would be designed and engineered with sufficient capacity to accommodate anticipated peak flows, minimizing the potential for upset. In addition, infrastructure would be designed to relevant seismic and other standards to minimize the potential for upset from seismic activity or other geologic hazards. Because all facilities would be adequately sized, and designed and constructed to current standards which are considered adequately protective (i.e., the Uniform Building Code), including standards related to seismic safety and geologic hazards, impacts are considered less than significant.

Impacts are considered to be *less than significant*. No mitigation is required.

C. Water Quality

Impact HYD-4: Construction-Related Impacts to Surface Water Quality and Groundwater Quality (Less than Significant with Mitigation)

Construction-related earth disturbing activities will occur in the development of the Rancho Cañada Village project. These activities could cause soil erosion and sedimentation to local waterways. Construction of new sewer pipelines and grading will require heavy equipment such as earth moving devices. Large trucks will be used in the transportation of construction materials to the site. Such machines have potential to leak hazardous materials that may include oil and gasoline. In addition, improper use of fuels, oils, and other construction-related hazardous materials, such as pipe sealant, may also pose a threat to surface or groundwater quality.

These impacts are considered *potentially significant*. Implementation of Mitigation Measures GEO-3 (Prepare and Implement an Erosion and Sediment Control Plan, refer to Chapter 3.1, *Geology, Seismicity and Soils*), HYD-2, HYD-3, and HYD-4 would ensure that impacts would be lowered to *less-than-significant* levels.

Mitigation Measure HYD-2: Comply with NPDES General Construction Permit

To reduce or eliminate construction-related water quality effects, before onset of any construction activities, the project proponent shall demonstrate coverage under the NPDES General Construction Permit. Monterey County will be responsible to ensure that construction activities comply with conditions in this permit, which will require development of a SWPPP, implementation of BMPs identified in the SWPPP, and monitoring to ensure that effects on water quality are minimized.

As part of this process, the project proponent will implement multiple erosion and sediment control BMPs in areas with potential to drain to surface water. These BMPs will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure may include, but are not limited to, the following measures:

- Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary re-vegetation or other ground cover) will be employed to control erosion from disturbed areas.
- Drainage facilities in downstream offsite areas will be protected from sediment using BMPs acceptable to the County and the RWQCB.

- Grass or other vegetative cover will be established on the construction site as soon as possible after disturbance.

Final selection of BMPs will be subject to review by the County. The County will verify that an NOI and a SWPPP have been filed before allowing construction to begin. The County or its agent shall perform routine inspections of the construction area to verify that the BMPs specified in the SWPPP are properly implemented and maintained. The County will notify contractors immediately if there is a noncompliance issue and will require compliance.

Mitigation Measure HYD-3: Implement a Spill Prevention and Control Program

The project proponent shall develop and implement a spill prevention and control program to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. The program shall be completed before any construction activities begin. Implementation of this measure would comply with state and federal water quality regulations and reduce the impact to a less-than-significant level.

The County shall review and approve the spill prevention and control program before onset of construction activities. The County will routinely inspect the construction area to verify that the measures specified in the spill prevention and control program are properly implemented and maintained. The County will notify contractors immediately if there is a noncompliance issue and will require compliance.

The federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If an appreciable spill has occurred and is reportable, the contractor's superintendent shall notify Monterey County and the County will need to take action to contact the appropriate safety and clean-up crews to ensure the spill prevention plan is followed. A written description of reportable releases must be submitted to the RWQCB. This submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form.

If surface water or groundwater quality levels have been degraded in excess of water quality standards, Mitigation Measure HYD-4 would be required and would reduce this impact to a *less-than-significant* level.

Mitigation Measure HYD-4: Implement Measures to Maintain Surface Water or Groundwater Quality

If an appreciable spill has occurred and results determine that project activities have adversely affected surface water or groundwater quality, a detailed analysis

will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards, and will include recommendations for reducing or eliminating the source of mechanisms of contamination. Based on this analysis, the project proponent will select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by Monterey County.

Impact HYD-5: Water Quality Impacts from Construction Below the Water Table (Less than Significant with Mitigation)

Trenching and excavation associated with the Proposed Project may reach a depth that can expose the water table, in which a path to the groundwater basin may become available for contaminants to enter the groundwater system. Primary construction-related contaminants that could reach groundwater would include oil and grease, and construction-related hazardous materials. In addition, discharge of construction-related dewatering effluent could result in the release of contaminants to surface water.

These impacts are considered *potentially significant*. Implementation of Mitigation Measure HYD-5 would ensure that impacts would be lowered *below significance thresholds*.

Mitigation Measure HYD-5: Provisions for Dewatering

Before discharging any dewatered effluent to surface water, the project proponent shall obtain an NPDES permit and WDRs from the RWQCB. Depending on the volume and characteristics of the discharge, coverage under the RWQCB's General Construction Permit or General Dewatering Permit is possible. As part of the permit, the permittee will design and implement measures as necessary so that the discharge limits identified in the relevant permit are met. As a performance standard, these measures will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. Implemented measures may include retention of dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the County.

The County will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. The County or its agent shall perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. The County will notify contractors immediately if there is a noncompliance issue and will require compliance.

Impact HYD-6: Water Quality Impacts from Increased Runoff (Less than Significant with Mitigation)

As discussed in Impact HYD-1, the project facilities are expected to result in an increase in impervious surfaces. As such, the Proposed Project could increase stormwater and non-stormwater runoff, transporting contaminants to adjacent receiving waters. Contaminated runoff waters could flow into the Carmel River and further downstream into the Carmel Lagoon, and could degrade the water quality of these water bodies.

During the dry season, vehicles release contaminants onto the impervious surfaces where they will accumulate until the first storm event. During this initial storm event or "first flush," the concentrated pollutants will be transported via runoff to stormwater drainage systems. Anticipated runoff contaminants associated with the Proposed Project include sediment, pesticides, oil and grease, metals, bacteria, and trash.

This impact is considered *potentially significant*. Implementation of Mitigation Measures HYD-6 and HYD-7 would ensure that the impact would be lowered *to a less-than-significant level*.

Mitigation Measure HYD-6: Best Management Practices to Maximize Stormwater Quality

The preliminary stormwater management plan described above in Mitigation Measure HYD-1 will include BMPs to maximize stormwater quality. The BMPs will include a combination of source control, structural improvements, and site design to the extent required to ensure compliance with the CWA and regulations noted above.

Prior to filling the final map, the applicant shall submit a drainage plan to the Water Resources Agency for review and approval. The plan shall be prepared by a registered civil engineer and include, but not be limited to, the following BMPs:

- To minimize the amount of pollutants entering the storm drain system, project roadways and other paved areas shall be cleaned regularly using street sweeping equipment. Additionally, litter and debris that may accumulate on the streets of the project site shall be regularly collected and properly disposed. These activities shall be the responsibility of Rancho Cañada Village and/or its contractors.
- Grass strips, high infiltration substrates, and grassy swales shall be used where feasible throughout the project site to reduce runoff, serve as bio-filters, and provide initial stormwater treatment. This type of treatment would apply particularly to parking lots.
- Physical devices shall be placed at outlets of pipes and channels to reduce the velocity or the energy of exiting water. Outlet protection helps to prevent scour and to minimize the potential for downstream erosion by reducing the velocity or energy of concentrated stormwater flows.

Prior to final inspection, the applicant shall provide the Water Resources Agency certification from a registered civil engineer that all drainage and erosion control improvements were constructed in accordance with approved plans.

Mitigation Measure HYD-7: Comply with Monterey Regional Storm Water Management Program

The proposed development is located in an area identified as "Urbanized Area C" in the Monterey Regional SWMP. The adoption of the SWMP by the RWQCB in September of 2006 allows coverage under the statewide general permit for MS4s provided that the SWMP guidelines are followed. Compliance with the SWMP guidelines will help to minimize water quality impacts associated with stormwater runoff. The six major components of a SWMP are:

- Public education and outreach
- Public participation/involvement
- Illicit discharge detection and elimination
- Construction site runoff control
- Post-Construction runoff control, and
- Pollution prevention/good housekeeping.

A homeowner's association, community services district, or similar entity shall be formed for the maintenance of roads, drainage facilities, erosion control improvements, and open spaces. Prior to filing the final map, the Director of Public Works, Director of Planning and Building Inspection, and General Manager of the Water Resources Agency shall approve documents for formation of association, The covenants, conditions and restrictions shall include provisions for annual drainage and erosion control reports, to be prepared by a registered civil engineer, to analyze the condition of subdivision drainage and erosion control improvements. The reports shall include recommendations for any necessary maintenance, and they shall be submitted to the Monterey County Water Resources Agency for review and approval.

The applicant shall enter into a Road and Drainage Systems Agreement with Monterey County. The Agreement shall include requirements for the type and frequency of cleaning and maintenance of catch basins, sediment traps, stormwater inlets, and other drainage facilities. The storm drainage system shall be maintained on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, and maintain the catch basins sediment trapping capacity. The homeowner's association, or similar responsible entity, shall provide an annual drainage report to the Water Resources Agency for review and approval. The annual drainage report shall be prepared by a registered civil engineer and submitted to the Water Resources Agency by August 15th, and all required maintenance must be performed prior to October 15th. The annual erosion control report, analyzing Carmel River bank erosion adjacent to the project site, shall be submitted to the Water Resources Agency by May 15th, and all recommended improvements shall be constructed prior to October 15th.

D. Groundwater Supply

Impact HYD-7: Substantially Deplete Groundwater Supplies or Interfere with Groundwater Recharge (Less than Significant)

The Proposed Project is anticipated to use groundwater as a supply, but would result in a reduction in withdrawals over current usage (see Chapter 3.10, *Public Services, Utilities, and Recreation*). The project will result in a substantial increase in impervious surfaces at buildout. However, stormwater runoff from small to moderate rainfall events would be infiltrated on-site, providing recharge of approximately 85 percent of annual runoff volumes during dry and average years (Balance Hydrologics 2005a).

Annual post-project groundwater recharge at the project site has been estimated to be 33.2 acre-feet (Balance Hydrologics 2005a). Average annual pre-project groundwater recharge can be estimated using the following assumptions:

- Average rainfall = 19.7 inches (Balance Hydrologics 2005a). Rainfall covers the entire project area of 80.1 acres.
- Average annual irrigation = 2.4 acre-feet/acre. Irrigation is only applied to the turf area of 57.4 acres.
- Annual evapotranspiration = 48.0 inches (average of MPWMD ETO zones 3 and 6). Evapotranspiration was assumed to occur predominantly in the turf and pond/wetland areas totaling 58.6 acres, not the natural cover and impervious areas.

These assumptions lead to an estimated annual total runoff and recharge of 34.9 acre-feet for pre-project conditions, with much of this volume going to recharge. This value is only 1.7 acre-feet greater than the estimated recharge of 33.2 acre-feet for post-project conditions estimated by Balance Hydrologics.

The reduction in water supply withdrawals discussed in Chapter 3.10 combined with the estimated minimal change in recharge will improve conditions in the aquifer. For this reason, impacts to groundwater supplies are considered less than significant.

E. Risk of Flooding

Impact HYD-8: Flood Hazard Associated with Placement of Fill in Floodplain (Less than Significant)

Areas along the Carmel River could be inundated during high flow events. The Proposed Project is to be built within the current 100-year floodplain. However, as part of the project, the land where structures are built will be raised sufficiently to keep structures above the 100-year flood elevation, reducing the likelihood of flooding in the Rancho Cañada development.

While the houses in Rancho Cañada are unlikely to be flooded, the fill they are built on has the potential to cause a constriction in the river channel during high flow events, which could raise water levels upstream.

Monterey County floodplain regulations allows fill in the floodway fringe, which is the area within the 100-year floodplain but outside of the floodway. The floodway limit is defined such that, if fill intruded on the floodway, there would be potential for the river upstream of the fill to rise more than a foot. Because the Rancho Cañada project will not be intruding on the floodway, this project is acceptable under FEMA guidelines and Monterey County floodplain regulations.

The Rancho Cañada project is expected to have a relatively small effect on water surface elevations during flood events. A hydraulic model analysis of existing and post-project water surface elevations indicates that a maximum increase of 0.75 feet occurs approximately 700 feet upstream of the downstream end of the project area. This value was determined by comparing the post-project water surface elevation at Cross-Section 52 reported in Balance Hydrologics' May 2006 model results to the existing conditions water surface elevation at the same location as reported in Balance Hydrologics' January 2006 model results. This increase is located within the project boundary, and all project structures will be placed above the post-project water surface elevation at this location (36.6 feet).

The maximum post-project increase at the upstream limit of the hydraulic model is 0.11 feet, based on the same model comparison described above. Given that the upstream limit of the model is in the middle of the Rancho Cañada golf course, it is expected that the difference in water surface elevations would attenuate to essentially zero at the upstream end of the golf course. Downstream of the project area, 100-year water surface elevations are unchanged. Rio Road will be extended and raised by 4 feet as part of the Rancho Cañada project. The modeled existing and post-project 100-year water surface elevations at the proposed Rio Road location are 33.8 feet (Balance Hydrologics 2006a and 2006b), while the existing ground elevation at the same location is 35.5 feet. Raising Rio Road to 39.5 feet will therefore not have an effect on flow patterns during the 100-year flood.

Based on the referenced model results, this impact is considered *less-than-significant*.

Impact HYD-9: Flood Hazards Associated with Redirection of River Flows (Less than Significant with Mitigation)

During some flood events, the Carmel River is expected to rise high enough to spread onto the right bank in the project area (Figure 3.2-2). At the upstream (east) end of the project area, such flood flows would likely enter the excavated basin along its eastern edge, spilling over a drop of about 8-10 feet. It is possible that flows spilling over this drop could scour the steep slope, causing a headcut back toward the river. If the headcut extends far enough, the channel may shift course and end up flowing through the excavated area. This would be undesirable

because it would bring the river close to the houses adjacent to the excavated area and possibly redirect the river downstream of the project area. This impact is considered *potentially significant*. Implementation of Mitigation Measure HYD-8 would ensure that the impact would be lowered *below significance thresholds*.

Even if the river does not shift to the north, fill placed on the northern overbank as part of the Rancho Cañada project may concentrate and redirect overbank flows towards an existing structure located immediately downstream of the project area. This structure is currently surrounded by an unconsolidated soil berm, which would likely be susceptible to erosion during a high flow event. This impact is considered *potentially significant*. Implementation of Mitigation Measure HYD-9 would ensure that the impact would be lowered *below significance thresholds*.

Mitigation HYD-8: Protect Eastern Slope of Excavated Basin

If the eastern edge of the excavated area is protected with rock or some similar hard substrate, the chance of scour will be reduced and channel shift will become less likely. No protection should be needed for the downstream portions of the excavated area because rapid movement of water over a drop is not expected to occur there.

Mitigation HYD-9: Construct Floodwall and/or Reinforce Berm at Western Edge of Project

Replacing the existing unconsolidated berm at the western edge of the project area with a floodwall or reinforcing the berm to withstand erosion would ensure that the existing structure's current level of protection would be unaffected by any redirection of flow caused by the Rancho Cañada project. Improvements at this location could be tied to the raised Rio Road to improve flood protection. Before any improvements are placed, hydraulic modeling would need to be completed to ensure that additional improvements would not increased flooding or result in increased erosion related to constriction of flood flows.

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

Impact HYD-10: Seiche, Tsunami, or Mudflow Hazards (Less than Significant)

The affect of tsunamis depends on elevation and proximity to the ocean. This project site is approximately 1 mile from the tidally affected portion of the Carmel River and the elevation of the houses will be at approximately 40 feet amsl. Tsunamis pose a negligible hazard to the project site because only a very large tsunami could impact the project area. It is unlikely a seiche would occur in the project area because no large water bodies are near the area. The project area is relatively flat (elevations range from 25 to 40 feet amsl), with little risk of mudflow.

This impact is therefore *less-than-significant* and no mitigation is required.

Chapter 3.3

Biological Resources

Introduction

This chapter presents an analysis of potential biological impacts of the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. Measures are included to avoid, reduce, and compensate for significant impacts. The setting and discussion of impacts are based on the Initial Biological Assessment prepared for Rancho Cañada Village (Rana Creek Habitat Restoration 2004), the Biological Assessment for the Hatton Parcel (Zander Associates 2005), and information obtained from a reconnaissance field visit conducted by Jones & Stokes.

Impact Summary

Table 3.3-1 lists the impacts and mitigation measures for the Proposed Project. As shown in Table 3.3-1, the Proposed Project would have some significant adverse impacts related to biological resources within the project area. However, with the implementation of the mitigation measures described within this administrative draft chapter, all of the impacts listed would be reduced to less-than-significant levels.

Table 3.3-1. Biological Resources Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Impacts on Vegetation			
BIO-1: Loss of Coyote Brush Scrub Habitat	LTS	None Required	--
BIO-2: Loss of Monterey Pine Stands	Potentially Significant	BIO-1: Avoid Impacts on Monterey Pine Stand if Feasible BIO-2: Conserve 0.6 Acres of Monterey Pine Forest to Mitigate for Loss of a Potentially Native Stand	LTS
BIO-3: Loss or Disturbance of	Potentially	BIO-3: Conduct a Survey for Summer	LTS

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Special-Status Plant Occurrences	Significant	Blooming Special-Status Plant Species	
		BIO-4: Avoid or Minimize Impacts on Special-Status Plant Species Populations by Redesigning the Project, Protecting Populations, and Implementing a Compensation Plan (If Necessary)	
		BIO-5: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel	
BIO-4: Loss of Riparian Forest and Woodland Habitat	Potentially Significant	BIO-5 [See above]	LTS
		BIO-6: Minimize Disturbance of Riparian Forest and Woodland	
		BIO-7: Restore Riparian Forest to Compensate for the Loss of Riparian Forest Habitat	
		BIO-8: Monitor Bank Erosion in Project Reach and Restore Riparian Vegetation and River Bank if Disturbed Due to Increased Velocities	
BIO-5: Loss of Wetlands and Other Waters of the United States	Potentially Significant	BIO-6, BIO-7, BIO-8, HYD-1, HYD-2, HYD-3, HYD-4 [See above and Chapter 3.2]	LTS
		BIO-9: Delineate Waters of the U.S. and Waters of the State in the Project Area	
		BIO-10: Restore or Create Waters of the U.S. and State to Mitigate Permanent Loss of Wetland and Pond Habitat	
BIO-6: Loss of Protected Trees	Potentially Significant	BIO-11: Redesign Project or Compensate for Removal of Protected Trees	LTS
B. Impacts on Wildlife			
BIO-7: Loss or Disturbance of California Red-Legged Frog Aquatic Habitat and Potential Loss of California Red-Legged Frog Adults, Larvae, or Eggs	Potentially Significant	BIO-12: Conduct Formal Site Assessment and Consult with U.S. Fish and Wildlife Service to Determine if Protocol-Level Surveys are Necessary	LTS
		BIO-13: Restrict Filling of Ponds/Wetlands and Initial Ground-Disturbing Activities in California Red-Legged Frog and California Tiger Salamander Habitat to the Dry Season (May 1 to October 15)	
		BIO-14: Conduct a Preconstruction Survey for California Tiger Salamander and California Red-Legged Frog	
		BIO-15: Monitor Initial Ground Disturbing Construction Activities within California	

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
		Red-Legged Frog and California Tiger Salamander Habitat	
		BIO-16: Compensate for the Removal and Disturbance of California Tiger Salamander and California Red-Legged Frog Breeding and Upland Habitat	
BIO-8: Loss or Disturbance of California Tiger Salamander Aquatic Habitat and Potential Loss of California Tiger Salamander Adults, Larvae, or Eggs	Potentially Significant	BIO-17: Conduct Formal Site Assessment and Consult with U.S. Fish and Wildlife Service to Determine if Interim Presence/Negative Finding Surveys are Necessary	LTS
		BIO-13, 14, 15, and 16 [See above]	
BIO-9: Loss or Disturbance of Southwestern Pond Turtle Aquatic Habitat and Potential Loss or Disturbance of Southwestern Pond Turtles	Potentially Significant	BIO-18: Conduct a Preconstruction Survey for Southwestern Pond Turtles and Monitor Construction Activities within Suitable Aquatic Habitat	LTS
BIO-10: Potential Loss or Disturbance of Breeding or Wintering Western Burrowing Owls and Their Burrows	Potentially Significant	BIO-19: Conduct a Survey for Suitable Burrows for Western Burrowing Owls	LTS
		BIO-20: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the CDFG Guidelines for Burrowing Owl Mitigation, if Burrows are Detected in the Survey Area	
BIO-11: Potential Loss or Disturbance of Tricolored Blackbirds and Their Breeding Habitat	Potentially Significant	BIO-21: Conduct Surveys for Breeding Tricolored Blackbirds	LTS
BIO-12: Potential Loss or Disturbance of Monterey Dusky-Footed Woodrat or Their Nests	Potentially Significant	BIO-22: Conduct Surveys for Woodrat Middens and Relocate Woodrats and Middens Prior to Construction Activity	LTS
BIO-13: Potential Loss or Disturbance of Tree and Shrub Nesting Migratory Birds and Raptors	Potentially Significant	BIO-23: Remove Vegetation During the Nonbreeding Season and Avoid Disturbance of Nesting Migratory Birds and Raptors	LTS
BIO-14: Potential Loss or Disturbance of Pallid Bat, Hoary Bat, and Non-Special-Status Bats Species	Potentially Significant	BIO-24: Conduct a Survey for Suitable Roosting Habitat and Evidence of Roosting Bats and Avoid Disturbing Them	LTS
BIO-15: Temporary and Permanent Impacts to Steelhead Trout and other Carmel River Fish	Potentially Significant	HYD-1 through HYD-7 [See Chapter 3.2]	LTS
		BIO-8 [See above]	
		BIO-25: Rescue Steelhead, if Stranded in Site Basin, During High-Flow Events	

S-significant, LTS-less than significant

Environmental Setting

The project site is situated in the Carmel Valley, in northern Monterey County, California. The 81+-acre site (Figures 2-1 and 2-2) is located on the existing West Course of the Rancho Cañada Golf Club, approximately 1.5-miles east of the Pacific Ocean and 1-mile west of Roach Canyon. The existing site, which lies adjacent to the Rancho Cañada East Course, is composed of traditional golf course design features, such as fairways, sand bunkers, water hazards, and landscaped rough areas (Figure 2-3). The Carmel River forms the southern boundary of the site; the remainder of the project site is bordered by existing development, including a substantial residential area on the site's western perimeter, and a church and school located to the north of the site.

Approach and Methodology

A Jones & Stokes botanist and wildlife biologist reviewed information from state and federal agencies and existing information related to the Proposed Project. Information from the following sources was reviewed and used to evaluate whether special-status species or other sensitive biological resources (e.g., wetlands) could occur in the project area:

- Initial Biological Assessment prepared for Rancho Cañada Village (Rana Creek Habitat Restoration 2004)
- Initial Biological Assessment for the Hatton Parcel (Zander Associates 2005)
- Forestry Report for Rancho Cañada Village (Staub 2004)
- A records search of the California Natural Diversity Database for the Monterey, Seaside, Mt. Carmel, and Soberanes Point U.S. Geological Survey (USGS) 7.5-minute quadrangles (California Natural Diversity Database 2007 a);
- The California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California records for the four quadrangles listed above (CNPS 2006); and
- The list of Listed, Proposed, and Candidate Species which may occur in Monterey County (USFWS 2008).

For the purpose of this analysis, the *project area* is defined as the area where construction and restoration activities (for the habitat preserve) will occur (Figure 3.3-1). The wildlife biologist and botanist conducted a brief reconnaissance level survey of the project area on October 6, 2005. The field survey focused on identifying and evaluating biological communities in the project area and determining their suitability for special-status plant and wildlife species. Jones & Stokes biologists traversed the project area on foot and in golf

carts. All areas supporting natural vegetation (*i.e.* not golf turf and landscaping) were surveyed on foot except for the cattail wetland near the center of the project area, which was not surveyed. A Rana Creek Habitat Restoration biologist also conducted biological surveys between October 30, 2003 and March 17, 2004; information from these surveys was also used in this report.

Common Vegetation and Wildlife

Table 3.3-2. Total Area of Vegetation by Community Type in the Project Area

Community Type	Area (Acres) within the Project Area
Golf Turf and Landscaping	57.4
Monterey Pine	0.2
Coyote Brush Scrub	11.8[1]
Wetland Vegetation	0.6
Ponds	0.6
Riparian Forest and Woodland	6.8
Total[2]	**77.4**

Includes 10.7 acres open/disturbed cover and 1.1 acres dense/intact cover

Does not include 2.7 acres of developed/disturbed habitat

The project area contains the following common vegetation types: golf turf and landscaping, Monterey pine (*Pinus radiata*) stand, coyote brush (*Baccharis pilularis*) scrub, cattail (*Typha spp*.) wetlands, and ponds. The distribution of these vegetation types is shown in Figure 3.3-1. General characteristics of each vegetation type are described below.

Golf Turf and Landscaping

Golf turf and ornamental landscaping occupy the majority of the project area. These areas are dominated by non-native annual bluegrass (*Poa annua*) and non-native kikuyu grass (*Pennisetum clandestinum*). Several landscaped areas near the existing restrooms and ponds are dominated by common non-native ornamental plants, such as New Zealand flax (*Phormium* spp.), African daisy (*Ostiosporum* spp.), New Zealand hebe (*Hebe* spp.), and English ivy (*Hedera helix*).

Several stands of trees are present within the golf turf area. Native species found on the course include riparian woodland species such as black cottonwood (*Populus blasamifera* ssp. *trichocarpa*) and western sycamore (*Platanus racemosa*), red alder (*Alnus rubra*) and arroyo willow (*Salix lasiolepis*). A 0.2-acre stand of western sycamore is also present in the northeast corner of the

project area (this area is called the Hatton parcel) (Figure 3.3-1). The understory of this stand consists of non-native weedy species, notably poison hemlock (*Conium maculatum*) and curly dock (*Rumex crispus*). Coast redwood stands are also present. These stands are probably planted because they are naturally found at higher elevations in this area, and would be unlikely to occur adjacent to the Carmel River (Rana Creek Habitat Restoration 2004). Non-native tree species present on the golf course include European white birch (*Betula pendula*) and non-native pines (*Pinus* spp.).

Golf turf and landscaped areas have lower value for wildlife because of the greater amount of human disturbance and maintenance of vegetation in these areas. Wildlife species that use these areas are typically adapted to human disturbance. Wildlife species associated with urban/suburban areas include western scrub jay (*Aphelocoma californica)*, northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), rock dove (*Columba livia*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), western fence lizard (*Sceloporus occidentalis*), and gopher snake (*Pituophis melanoleucus*) (Mayer and Laudenslayer 1988). Within the study area, the quality of the golf course as habitat for wildlife is improved due to the presence of large, mature trees, ponds, an adjacent creek with riparian vegetation, and patches of natural vegetation within the golf turf.

Monterey Pine Stands

Monterey pine is found in scattered stands in the golf course area and in a 0.2-acre stand on the Hatton parcel. The understory of the stand on the Hatton parcel consists of open coyote brush scrub (see description below), while the understory of the stands on the golf course consist of non-native grasses common in the golf turf areas.

Native Monterey pine forest is considered a sensitive community by the California Department of Fish and Game (CNDDB 2007). The stands located on the golf course may be native as their size suggests that they are older than the golf course itself which was built around 1970. However, these stands could also have been planted at an earlier point in time. The 0.2-acre stand on the Hatton Parcel may consist of native trees or may have been planted for landscaping as it is not clear whether or not this area has been previously disturbed or graded. Mapping of Monterey pine forest conducted in 1994 (Jones & Stokes 1994) reports that the study area and vicinity contain scattered Monterey pine with up to 20% canopy cover as an overstory in golf courses, urban parks, and other developed areas. Small and fragmented Monterey pine stands in golf courses and urban areas have greatly reduced conservation value relative to large areas of Monterey pine forest. Their small size and the nature of the surrounding land use disrupt natural disturbance regimes, such as fire, and increase the influx of non-native invasive species. However, the overstory trees in these stands may retain valuable genetic diversity that can be valuable to the conservation of Monterey pine genetic diversity at the species level (Rogers 2002).

Because the Monterey pine stands are scattered and limited in size, habitat suitability for wildlife species in this vegetation community is similar to that described above for golf turf and landscaped areas. Wildlife species that would occur in the golf turf and landscaped areas vegetation community would also occur in the Monterey pine stands within and adjacent to golf turf and landscaped areas.

Coyote Brush Scrub

Coyote brush scrub is primarily found along the northern edge and northeast corner (Hatton parcel) of the project area (Figure 3.3-1). Two distinct types of coyote brush scrub are present in the project area: dense and open stands.

Dense, intact, coyote brush scrub is found only on the Hatton Parcel, and covers approximately 1.1-acres. In this area, coyote brush forms a dense stand, and is associated with poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), sticky monkeyflower (*Mimulus aurantiacus*), California rose (*Rosa californica*), California sage (*Artemisia californica*), and poison hemlock. Non-native grasses and forbs such as soft brome (*Bromus hordeaceus*) and bull thistle (*Cirsium vulgare*) are found in openings in this community. Native grasses and forbs, including beardless ryegrass (*Leymus triticoides*), blue wildrye (*Elymus glaucus*), and spreading rush (*Juncus patens*), are common in this community.

Open, disturbed, coyote brush scrub is found on most of the Hatton Parcel (approximately 2.5-acres), along the northern edge of the project area, adjacent to the bridge over the Carmel River (approximately 8.9-acres), and in a small patch within the golf course near the northern edge (approximately 1-acre) (Figure 3.3-1). These stands consist of more widely scattered coyote brush individuals, and an herbaceous understory dominated by non-native weedy species, such as poison hemlock and summer mustard (*Hirshfeldia incana*). One area of open coyote brush scrub, in the northeast portion of the Hatton Parcel, has a substantial component of native grasses to the understory, including foothill needlegrass (*Nasella lepida*) and creeping wild-rye. Native sedge (*Carex* spp.) and rush (*Juncus* spp.) species are also present in this area, as are scattered coast live oak (*Quercus agrifolia*) trees.

The dense coyote brush scrub on the Hatton parcel in the project area provides 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*). The open areas of coyote brush scrub provide suitable breeding habitat and/or cover for northern mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), Anna's hummingbird (*Calypte anna*), and American robin (*Turdus migratorius*) (Zeiner et al. 1990a.) These more open areas are also suitable for western fence lizards and black-tailed jackrabbits (*Lepus californicus*), which use the area beneath coyote brush for cover (Zeiner et al. 1988, 1990b).

Cattail Wetland

A cattail wetland is located in a depression near the center of the project area (Figure 3.3-1). This wetland area is approximately 0.2 acre in extent, and consists of a dense stand of cattails (*Typha* spp.).

Wetland vegetation that accompanies open water provides cover for amphibians and substrate for attaching eggs. Large areas of wetland vegetation can provide nesting substrate for some species of birds such as red-winged blackbird (*Agelaius phoeniceus*) and tri-colored blackbird (*A. tricolor*). This wetland provides cover for dispersing amphibians and if it were to contain open water for a sufficient duration, it would provide suitable breeding habitat for amphibians. This wetland also appears large enough to support nesting birds.

Ponds

Three large golf course ponds are present in the project area (Figure 3.3-1). All three ponds are artificial, lined, and serve as features of the golf course. Two ponds are located along the western edge of the project area (ponds 1 and 2) and a third pond (pond 3) is located just northeast of the two ponds. Prior to the October 6, 2005 site visit, the lining of ponds 1 and 2 had been punctured and the water had been drained. Ponds 1 and 2 only have low-growing grasses and herbaceous vegetation on their banks and no emergent vegetation. Pond 3 has dense California bulrush along a portion of its edge (see description of *California Bulrush Wetland* below). Several additional golf course ponds are located outside of the project area.

Pond 1 had a 50-foot by 80-foot pooled area during the October 2005 site visit; the maximum depth was 1 to 2-feet deep. Pond 2 was dry at the time of the survey. Rainwater that collects in these ponds could provide areas for mammals to drink and birds to drink and bathe. If these ponds were to become substantially ponded again, they would be considered lower quality wildlife habitat due to the relative lack of vegetation along their edges and the absence of emergent vegetation. However, vegetation along the edge of the pond provides cover for amphibians and emergent vegetation provides substrate for amphibians to attach eggs. Pond 3 provides better quality habitat for wildlife because of the presence of emergent and bank vegetation. Although the lining of this pond had not been punctured and the water drained, there were only a few inches of water present during the October 2005 field survey. This pond appeared only partially inundated during the May 2004 survey by Rana Creek Habitat Restoration. Therefore, it is assumed that this pond is intermittent, with ponding lasting at least through May.

Sensitive Natural Communities

Two sensitive natural communities, riparian forest and woodland and California bulrush (*Scirpus californicus*) wetland, were identified in the project area.

Riparian Forest and Woodland on the Project Site

Riparian forest and woodland is found in three portions of the project area. The largest area of riparian woodland is located along the Carmel River. A band of riparian forest approximately 20-feet in width is present along intermittent drainage 1, which flows north-south along the western edge of the project area from a culvert in the vicinity of the proposed Rio Road extension and into the Carmel River . In addition, a narrow band (approximately 15-feet wide) of riparian forest is present along intermittent drainage 2, which flows from a culvert near the main entrance to the golf course and a church, adjacent to the "Play or Pray" sign. A patch of arroyo willow riparian forest is located adjacent to this drainage at the base of the south-facing slope.

Riparian woodland along the Carmel River is dominated by arroyo willow, black cottonwood, and red alder in the overstory. A mixture of native shrubs and vines, such as poison oak, California blackberry, and western red dogwood, and non-native species, notably Cape ivy (*Senecio mikanioides*), is present in the understory. An herbaceous layer is present, consisting of species such as stinging nettle (*Urtica dioica*), creeping snowberry (*Symphoricarpos mollis*), and California everlasting (*Gnaphalium californicum*).

Riparian woodland along the western edge of the project area is dominated by arroyo willow and red willow (*Salix laevigata*) in the overstory. Black cottonwood is also present. The understory consists of native species such as stinging nettles, soft rush (*Juncus effusus*), and California blackberry, as well as non-native species such as nasturtium (*Tropaeolum majus*) and poison hemlock.

Riparian woodland near the main entrance to Rancho Cañada is dominated by arroyo willow in the overstory. Understory species include natives such as California bulrush (*Scirpus californicus*), soft rush, and tall flatsedge (*Cyperus eragrostis*), as well as non-natives such as French broom (*Genista monspessulana*), fennel (*Foeniculum vulgare*), and pampas grass (*Cortaderia jubata).*

Several types of riparian forest and woodland are considered sensitive by CDFG (CDFG 2003). Sensitive riparian forest and woodland types present in the project area include Central Coast arroyo willow riparian forest and black cottonwood riparian forest.

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 the riparian forest and associated aquatic habitat. 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 (*Picoides nuttallii)* and oak titmouse (*Baeolophus inornatus*), occupy dying trees and snags (Zeiner et al. 1990a). Several mammals including raccoons, Virginia opossum, and striped skunks are common in riparian habitats (Zeiner et al. 1990b).

Riparian Vegetation along the Carmel River

Riparian vegetation along the Carmel River has been affected by a number of important natural and human-induced events.

The most important natural events that have affected riparian vegetation include floods and droughts. Major floods occurred in 1862, 1911, 1914, 1995, and 1998 (Kondolf and Curry 1986, Mussetter Engineering Inc. 2002). Major floods cause bank erosion and loss of riparian vegetation, but perhaps more importantly may also affect channel form and depth.

Droughts have probably had a substantial effect on riparian vegetation; however, the effect of droughts cannot be separated fully from human activities. For example, the 1976-1977 drought led to extremely heavy groundwater pumping and unprecedented drawdown in the lower Carmel Valley (McNiesh 1989). To what extent the drawdown was the result of pumping or of the natural effects of drought cannot be determined. However, an analysis of simulated unimpaired flows for 1977 using the MPWMD's Carmel Valley Simulation Model (CVSIM) model shows that the river would have been dry at the USGS "Near Carmel" gauge site (RM 3.6) without the presence of dams and pumping wells. McNiesh (1989) points out that droughts by themselves cannot be blamed for vegetation decline in the Carmel Valley, because vegetation decline occurred prior to the 1970's drought and continued after the water table recovery that followed the drought.

The major human-induced changes that have affected the riparian vegetation include encroachment on the riparian vegetation as the result of farming, housing development, and golf course construction, construction of San Clemente (1921) and Los Padres (1948) Dams, and groundwater pumping (McNiesh 1989). In addition, installation of bank protection has reduced lateral movement of the river (Mussetter Engineering Inc. 2002). The dams have relatively small reservoirs that have relatively little effect on flood peaks. Diversions and groundwater pumping have caused the once perennial river to become characteristically dry in late summer. However, reservoir releases also periodically cause increased flows in reaches below the dams that otherwise would have been dry. The dams also trap sediment, which has led to downstream channel incision (Curry and Kondolf 1983). Groundwater pumping by Cal-Am and others has been identified as a major impact on riparian vegetation (McNiesh 1986, 1989).

McNiesh (1986, 1989) and others (Zinke 1971, Groeneveld and Griepentrog 1985) have demonstrated that groundwater pumping has led to local riparian vegetation mortality. This mortality has been associated with local bank erosion. McNiesh (1986) has shown that not only total drawdown, but also the rate of drawdown is critical for survival of riparian trees. The precise amount of drawdown that can be tolerated by vegetation cannot be defined, because it is dependent on a large number of interrelated factors (McNiesh 1989). But, a general model was outlined by McNiesh (1986) that can be used to predict thresholds of damage to vegetation. Mild stress of riparian trees occurs if drawdown is between 4 and 8 feet in a season or between 1 and 2 feet per week. Severe stress occurs when seasonal drawdown is greater than 8 feet, or

drawdown in a week exceeds 2 feet. These are drawdown rates in excess of the normal seasonal fluctuation in groundwater levels.

California Bulrush Wetland

California bulrush wetland is located along the margins of pond 3, located in the northwest portion of the project area. Vegetation in this wetland consists of a dense stand of California bulrush. California bulrush wetland is considered a sensitive community by CDFG (CDFG 2003).

California bulrush wetland is similar to cattail wetland described above, in its function as wildlife habitat. It is assumed that pond 3 is intermittent, with ponding lasting at least through May. Pond 3 and the associated bulrush vegetation provide suitable breeding habitat and cover for amphibians. In addition, the bulrush wetland may support nesting birds.

Special-Status Species

Special-status species are plants and animals that are legally protected under the California Endangered Species Act (CESA) the federal Endangered Species Act (ESA), or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as:

- species listed or proposed for listing as threatened or endangered under the ESA (Title 50, Code of Federal Regulations [CFR], Section 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register [FR] for proposed species);
- species that are candidates for possible future listing as threatened or endangered under ESA (72 FR 69034, December 6, 2007;
- species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (Title 14, California Code of Regulations [CCR], Section 670.5);
- plants listed as rare under the California Native Plant Protection Act of 1977 (California Fish and Game Code, Section 1900 *et seq*.);
- plants considered by CNPS to be "rare, threatened, or endangered in California and elsewhere" (List 1B, 2, and 3) (List 4 species were included and evaluated in the impact analysis to determine whether they should be considered special-status species for the purposes of this EIR);
- species that meet the definition of *rare* or *endangered* under the State CEQA Guidelines, Section 15380;
- animals fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]); or

- animal species of special concern to CDFG (CDFG 2007b; Remsen 1978 [birds]; Williams 1986 [mammals]; and Jennings and Hayes 1994 [amphibians and reptiles]).

A description of special-status plants, wildlife, and fish species that have the potential to occur in the project area is provided below.

Special-Status Plants

A review of the CNDDB records search did not reveal any records of special-status plants in the project area. Based on the pre-field investigation, 48 special-status plant species are known to occur in the region (Table 3.3-3). Of these 48 species, 31 species do not have suitable habitat in the project area (e.g., chaparral and cismontane woodland habitats). The remaining 17 species potentially occur in coastal scrub or shrubland habitats. Of these 17 species, 14 species would have been apparent during the March 17, 2004 or May 31, 2005 surveys conducted by Dale Hameister and Erin Avery and documented in the Biological Assessment reports (Rana Creek Habitat Restoration 2004, Zander Associates 2005). Three species, fragrant fritillary (*Fritillaria liliacea*), San Francisco gumplant (*Grindelia hirsutula* var. *maritima*), and Eastwood's goldenbush (*Ericameria fasciculata*) would not have been apparent and identifiable at the time of these botanical surveys. However, a third seasonally timed survey was conducted for the fragrant fritillary (*Fritillaria liliacea*) during its published blooming period of February through April. During this survey, conducted by Erin Avery on April 26, 2006, the fragrant fritillary was not found to occur in the upland portion of the Hatton parcel, in intact coyote scrub habitat, where it would likely have been present. The two remaining plant species, which were not identified during the three surveys conducted by Zander Associates or Rana Creek Habitat Restoration, but have a potential to occur in the project area, are described in greater detail below.

Eastwood's Goldenbush

Eastwood's goldenbush blooms between July and October. It would not have been identifiable at the time of the Dale Hameister and Erin Avery's surveys on March 17, 2004, May 31, 2005, or April 26, 2006, and may therefore be present on the Hatton Parcel. Although it is typically found on sandy soils in coastal scrub, its probability of occurrence is low, as fewer than 15 occurrences of this species have been recorded in the Monterey Bay Area (CNPS 2006). The only documented occurrence of this species in the vicinity of the project site was in the Carmel Valley, near the junction of Carmel Valley Road and Laurales Grade road, about 10-miles upstream from the mouth of the valley. The occurrence at this location was last seen in 1928, but is presumed to be extant.

While Eastwood's goldenbush is not listed as rare, threatened, or endangered species federally or by the state, it listed as a List 1B.1 species by CNPS. Listing on List 1B is a scientific community's determination that the species is

Table 3.3-3. Special-Status Plant Species Identified as Potentially Occurring in the Project Vicinity

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
Species With Habitat Present in the Project Area and Requiring Additional Surveys				
Eastwood's goldenbush *Ericameria fasciculata*	–/–/1B.1	Sandy soils and openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, coastal scrub	Present	Low. May be present in coastal scrub in Hatton Parcel, which was surveyed in May when this species would not have been readily identifiable.
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	–/–/1B.2	Coastal bluff scrub, coastal scrub, sandy soils on serpentine grassland	Present	Low. Generally occurs on slopes or ocean bluffs. Surveys were conducted outside of the normal identification period for this species and it may be present in the project area.
Species With Habitat Present in the Project Area and Determined to be Absent by Surveys				
Hickman's onion *Allium hickmanii*	–/–/1B.2	Closed-cone coniferous forest, maritime chaparral, coastal prairie, coastal scrub, valley and foothill grassland, generally +/- 150'	Present.	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
Hooker's manzanita *Arctostaphylos hookeri* ssp. *hookeri*	–/–/1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub on sandy substrate	Present	None. Manzanitas were not observed in the project area.
Monterey manzanita *Arctostaphylos montereyensis*	–/–/1B.2	Chaparral, cismontane woodland, coastal scrub, sandy soils	Present	None. Manzanitas were not observed in the project area.

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
Sandmat manzanita *Arctostaphylos pumila*	–/–/1B.2	Openings in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub, in sandy areas	Present	None. Manzanitas were not observed in the project area.
Monterey spineflower *Chorizanthe pungens* var. *pungens*	T/–/1B.2	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland, sandy soils	Present	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
San Francisco collinsia *Collinsia multicolor*	–/–/1B.2	Closed-cone coniferous forest, coastal scrub	Present	None. Species was not identified during March 2004 or May 2005 surveys.
Hutchinson's larkspur *Delphinium hutchinsoniae*	–/–/1B.2	Broad-leaved upland forest, chaparral, coastal prairie, coastal scrub, usually on west-facing slopes.	Present	None. Species was not identified during March 2004 or May 2005 surveys.
Coast wallflower *Erysimum ammophilum*	–/–/1B.2	Sandy soils and openings in maritime chaparral, coastal dunes, and coastal scrub	Present	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
Fragrant fritillary *Fritillaria liliacea*	–/–/1B.2	Adobe soils of interior foothills, coastal prairie, coastal scrub, annual grassland, often on serpentinite, below 1,350'	Present	None. Species was not identified during the April 26, 2006 survey.

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
Sand gilia *Gilia tenuiflora* ssp. *arenaria*	E/T/1B.2	Sandy soils in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub. In bare, wind-sheltered areas, often near the dune summit or in hind dunes.	Present	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
Kellogg's horkelia *Horkelia cuneata* ssp. *sericea*	–/–/1B.1	Openings in closed-cone coniferous forest, coastal scrub, maritime chaparral, on sandy or gravelly soils	Present	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
Marsh microseris *Microseris paludosa*	–/–/1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland, below 1500'	Present	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
Monterey pine (native stands) *Pinus radiata*	–/–/1B.1	Closed-cone coniferous forest, cismontane woodland	Present.	Low. 0.2 acre of Monterey Pine forest identified in the Hatton Parcel, but this stand is likely to be introduced.
Maple-leaved checkerbloom *Sidalcea malachroides*	–/–/4.2	Coastal scrub, perennial grassland, Redwood forest, Douglas-fir forest, in open, often disturbed areas, 5-2,300'	Present	None. May be present in coastal scrub outside of Hatton parcel.

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
Santa Cruz microseris *Stebbinsoseris decipiens*	–/–/1B.2	Open areas in broad-leaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, and coastal scrub, sometimes serpentinite	Present	None. Coastal scrub habitat is present in Hatton parcel, but species was not identified during May 31, 2005 survey. Remaining coastal scrub areas are unlikely to provide habitat because they are open and dominated by ruderal species.
Species Without Habitat Present in the Project Area				
Little Sur manzanita *Arctostaphylos edmundsii*	–/–/1B.2	Coastal bluff scrub, chaparral on sandy substrate	Absent	None
Pajaro manzanita *Arctostaphylos pajaroensis*	–/–/1B.1	Chaparral, in sandy areas	Absent	None
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	–/–/1B.2	Annual grassland, on lower slopes, flats, and swales, sometimes on alkaline or saline soils, below 700'	Absent	None
Coastal dunes milk-vetch *Astragalus tener* var. *titi*	E/E/1B.1	Coastal bluff scrub, coastal dunes	Absent	None
Robust spineflower *Chorizanthe robusta* var. *robusta*	E/–/1B.1	Coastal bluff scrub, coastal dunes openings in cismontane woodland, on sandy soil	Absent	None
Jolon clarkia *Clarkia jolonensis*	–/–/1B.2	Cismontane woodland	Absent	None
Seaside bird's-beak *Cordylanthus rigidus* ssp. *littoralis*	–/E/1B.1	Sandy soils of stabilized dunes in maritime chaparral and closed-cone coniferous forest.	Absent	None

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
Branching beach aster *Corethrogyne leucophylla*	–/–/3.2	Closed-cone coniferous forest, coastal dunes	Absent	None
Gowen cypress *Cupressus goveniana* ssp. *goveniana*	T/–/1B.2	Closed-cone coniferous forest	Absent	None
Monterey cypress *Cupressus macrocarpa*	–/–/1B.2	Closed-cone coniferous forest	Absent	None
Umbrella larkspur *Delphinium umbraculorum*	–/–/1B.3	Moist areas in cismontane woodland	Absent	None
Pinnacles buckwheat *Eriogonum nortonii*	–/–/1B.3	Sandy soils in chaparral, valley and foothill grassland, often on recent burns	Absent	None.
Menzies's wallflower *Erysimum menziesii* ssp. *menziesii*	E/E/1B.1	Localized on coastal dunes, on coastal strand areas in coastal scrub below 115', blooms Mar-Jun	Absent	None
Santa Lucia bedstraw *Galium clementis*	–/–/1B.3	Lower and upper montane coniferous forest on granitic or serpentinite, rocky substrates	Absent	None
Contra Costa goldfields *Lasthenia conjugens*	E/–/1B.1	Alkaline or saline vernal pools and swales, below 700'	Absent	None
Beach layia *Layia carnosa*	E/E/1B.1	Coastal dunes. Hugely reduced in range along California's North Coast dunes.	Absent	None
Coast yellow leptosiphon *Leptosiphon croceus*	–/–/1B.1	Coastal bluff scrub, coastal prairie	Absent	None

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
Tidestrom's lupine *Lupinus tidestromii*	E/E/1B.1	Coastal dunes	Absent	None
Carmel Valley bush mallow *Malacothamnus palmeri* var. *involucratus*	–/–/1B.2	Chaparral, oak woodland, talus hilltops and slopes, 100-2,200'	Absent	None.
Santa Lucia bush mallow *Malacothamnus palmeri* var. *palmeri*	–/–/1B.2	Rocky places in chaparral	Absent	None
Carmel Valley cliff-aster *Malacothrix saxatilis* var. *arachnoidea*	–/–/1B.2	Rocky areas in chaparral	Absent	None
Mt. Diablo cottonweed *Micropus amphibolus*	–/–/3.2	Bare grassy rocky slopes in broad-leaved upland forest, cismontane woodland, valley and foothill grassland	Absent	None
San Antonio Hills monardella *Monardella antonina* ssp. *antonina*	–/–/3.2	Chaparral, oak woodland, open rocky slopes, 1,500-4,000’	Absent	None
Yadon’s rein orchid *Piperia yadonii*	E/–/1B.1	Coastal bluff scrub, closed-cone coniferous forest, maritime chaparral, on sandy soils	Absent	None
Hooked popcorn-flower *Plagiobothrys uncinatus*	–/–/1B.2	Chaparral, cismontane woodland, valley and foothill grassland, in sandy areas.	Absent	None.
Hickman’s cinquefoil *Potentilla hickmanii*	E/E/1B.1	Freshwater marshes, seeps, and small streams in open areas in coastal bluff scrub or coniferous forest	Absent	None
Pine rose *Rosa pinetorum*	–/–/1B.2	Closed-cone coniferous forest	Absent	None

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]
California screw-moss *Tortula californica*	–/–/1B.2	Chenopod scrub, valley and foothill grassland/sandy soil	Absent	None
Santa Cruz clover *Trifolium buckwestiorum*	–/–/1B.1	Moist grassy areas on margins of broad-leaved upland forest, cismontane woodland, and coastal prairie, sometimes in disturbed areas, 200-1,800'	Absent	None
Pacific Grove clover *Trifolium polyodon*	–/R/1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps	Absent	None
Monterey clover *Trifolium trichocalyx*	E/E/1B.1	Closed-cone coniferous forest	Absent	None

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]

Notes:

[a] Status explanations:

Federal

E = listed as endangered under the federal Endangered Species Act.

T = listed as threatened under the federal Endangered Species Act.

– = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

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.

– = no listing.

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]

California Native Plant Society

1A	=	List 1A species: presumed extinct in California.
1B	=	List 1B species: rare, threatened, or endangered in California and elsewhere.
2	=	List 2 species: rare, threatened, or endangered in California but more common elsewhere.
3	=	List 3 species: plants about which more information is needed to determine their status.
4	=	List 4 species: plants of limited distribution.
–	=	no listing.

Threat Code extensions

.1 = Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 = Fairly threatened in California (20- 80% of occurrences threatened; moderate degree and immediacy of threat)
.3 = Not very threatened in California (less than 20% of occurrences threatened or no current threats known)

Common and Scientific Name	Legal Status[a] Federal/State /CNPS	Habitat Requirements	Habitat Present / Absent	Likelihood to occur within Project Area[b]

[b]Definitions of levels of Occurrence likelihood:

High: Known occurrence of plant in region from Natural Diversity Data Base, or other documents in the vicinity of the project; or presence of suitable habitat conditions and suitable microhabitat conditions.

Moderate: Known occurrence of plant in region from Natural Diversity Data Base, or other documents in the vicinity of the project; or presence of suitable habitat conditions but suitable microhabitat conditions are not present.

Low: Plant not known to occur in the region from the Natural Diversity Data Base, or other documents in the vicinity of the project; or habitat conditions of poor quality.

None: Plant not known to occur in the region from the Natural Diversity Data Base, or other documents in the vicinity of the project; or suitable habitat not present in any condition.

considered sufficiently rare, and therefore it meets the CEQA definition of "rare" and qualifies as a special-status species. It is a late summer/early fall-blooming (July-October) evergreen shrub up to 1-foot tall. The species is endemic to Monterey County and occurs at elevations between 100 and 900 ft. Eastwood's goldenbush occurs in closed-cone coniferous forests, maritime chaparral, coastal dunes, and on sandy openings in coastal scrub. The species is threatened by urbanization and non-native plants.

San Francisco Gumplant

San Francisco gumplant blooms between June and September. It would therefore not have been identifiable at the time of the surveys conducted by Dale Hameister or Erin Avery, and may therefore be present in the project area. Its probability of occurrence is low, as it typically occurs on slopes or ocean bluffs, but it may occur in coastal scrub (CNDDB 2006). Several occurrences have been documented in the vicinity, in and adjacent to Carmel, and on Seventeen Mile Drive in Monterey (CalFlora 2006).

While the San Francisco gumplant is not listed as rare, threatened, or endangered species federally or by the state, it listed on as List 1B.2 species by CNPS. Listing on List 1B is a scientific community's determination that the species is considered sufficiently rare, and therefore it meets the CEQA definition of "rare" and qualifies as a special-status species. It is a summer-blooming (June-September) perennial plant up to 1.5-feet tall. The species occurs in Coastal California from San Luis Obispo County to Marin County. San Francisco gumplant occurs in sandy soils in coastal bluff scrub, coastal scrub, and serpentine grassland. The species is threatened by coastal development and non-native plants (CNPS 2006).

Special-Status Wildlife and Fish

Based on a review of species information from state and federal agencies and existing information related to the Proposed Project as described above under "Approach and Methodology," 35 special-status wildlife and fish species were identified as having the potential to occur in the project vicinity (Table 3.3-4). Of these 30 species, 22 were eliminated from further consideration because suitable habitat for these species is not present within the project area and/or the project area is located outside of the species' known range. The project area contains habitat for the following 13 special-status wildlife and fish species.

- California red-legged frog, or CRLF (*Rana aurora draytonii*)
- California tiger salamander (*Ambystoma californiense*)
- southwestern pond turtle (*Emys marmorata pallida*)
- white-tailed kite (*Elanus leucurus*)
- Cooper's hawk (*Accipiter cooperii*)

- western burrowing owl (*Athene cunicularia hypugaea*)
- purple martin (*Progne subis*)
- yellow warbler (*Dendroica petechia brewsteri*)
- tricolored blackbird (*Agelaius tricolor*)
- pallid bat (*Antrozous pallidus*)
- hoary bat (*Lasiurus cinereus*)
- Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*)
- South Central California Coast Steelhead (*Oncorhynchus mykiss*)

Each of the 13 special-status wildlife species with potential to occur on site is discussed below. Special-status fish species are discussed separately below.

California Red-legged Frog

The CRLF is listed as threatened under the federal ESA and is a California species of special concern. The project area appears to be immediately outside of currently designated critical habitat for CRLF (71 Federal Register [FR] 19244–19346, April 13, 2006 (this designation has been recently challenged in court). The frog is known from isolated locations in the Sierra Nevada, northern Coast, and northern Transverse Ranges. It is relatively common in the San Francisco Bay area and along the central coast. CRLF is believed to be extirpated from the floor of the Central Valley. (USFWS 2002)

CRLF use a variety of habitat types, which include various aquatic systems, riparian, and upland habitats (USFWS 2002). However, these frogs may complete their entire life cycle in a pond or other aquatic site that is suitable for all life stages (66 FR 14626). CRLF inhabit marshes; streams; lakes; ponds; and other, usually permanent, sources of water that have dense riparian vegetation (Stebbins 2003).

As adults, CRLF are highly aquatic when active but depend less on permanent water bodies than do other frog species (Brode and Bury 1984). Adults may take refuge during dry periods in rodent holes or leaf litter in riparian habitats (USFWS 2002) or in large cracks in the bottom of dried ponds (Alvarez 2004). Although red-legged frogs typically remain near streams or ponds, marked and radio-tagged frogs have been observed to move more than 2 miles through upland habitat. These movements are typically made during wet weather and at night. (USFWS 2002)

CRLF have been reported from several relatively isolated, although widely distributed locations, along the Carmel River. This Carmel River population has been identified by the USFWS as a core population, targeted for development and implementation of a management plan. (USFWS 2002).

Table 3.3-4. Special-Status Wildlife and Fish Species with Potential to Occur in the Project Vicinity

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project Area
Species with Suitable Habitat in Project 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	Ponds 1, 2, and 3 may provide suitable breeding habitat depending on length of inundation
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	Carmel River provides suitable habitat; ponds 1, 2, and 3 may provide suitable breeding habitat depending on length of inundation
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.	Ponds 1, 2, and 3 may provide suitable breeding habitat depending on length of inundation
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	May nest in or adjacent to project 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 gray pine-oak woodlands through mixed conifer forests	May nest in or adjacent to project area

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project Area
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	Could occur along edges of gold course; no ground squirrel burrows observed
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	May nest in or adjacent to project area
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	May nest in or adjacent to project 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 habitat present in the cattail wetland and pond 3

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project 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 within large trees or forage in the project area
Hoary bat *Lasiurus cinereus*	--/SSC	Occurs throughout California from sea level to 13,200 feet.	Primarily found in forested habitats. Also found in riparian areas and in park and garden settings in urban areas. Day roosts within foliage of trees.	May roost in trees or forage in the project 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 intermittent drainages; woodrat nest observed along intermittent drainage
South Central California Coast Steelhead *Oncorhynchus mykiss*	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.
Species with No Suitable Habitat Present in the Project 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 not present
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 not present

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project Area
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 not present
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 not present
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.	No overwintering or roosting habitat present
Tidewater goby *Eucyclogobius newberryi*	E/SSC	The tidewater goby, found only in California, historically occurred in at least 87 California coastal lagoons from San Diego County to Humboldt County.	Restricted to coastal brackish shallow lagoons and lower stream reaches where the water is fairly still but not stagnant.	Suitable habitat not present
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	Project area is outside of species known range
Arroyo southwestern 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	Prefers sandy arroyos and river bottoms with open riparian vegetation in inland valleys and foothills	Suitable habitat not present

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project Area
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	Suitable habitat not present
Bald eagle *Haliaeetus leucocephalus*	D/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 habitat not present
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

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project Area
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 not present
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	--/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	Suitable habitat not present
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	Suitable habitat not present

Common and Scientific Name	Status Federal/State	California Distribution	Habitats	Occurrence in Project 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 habitat not present
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	Project area is outside of species known range; no suitable habitat
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
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 not present

[a] Status explanations:

Federal:

– = no status.
E = listed as “endangered” under the federal Endangered Species Act.
T = listed as “threatened” under the federal Endangered Species Act.
D = delisted (delisted species are monitored for 5 years).

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

Information on occurrences in the lower Carmel River floodplain, between approximately RM 28 (above Los Padres Dam reservoir) and the Carmel River Lagoon, was taken primarily from information provided in the Draft Interim Biological Assessment for the Carmel River Dam and Reservoir Project (EcoSystems West Consulting Group 2001), although other sources such as Mullen (1996) and the Recovery Plan for the CRLF (USFWS 2002) were also reviewed.

The USFWS designated critical habitat for the CRLF from on April 13, 2006 (71 FR 19244–19346). Most of the Carmel River watershed was included in critical habitat unit MNT-2. Only a few localities in California have been identified with more than 350 adults; one of these is Rancho San Carlos, a private ranch on the upper portion of the Carmel River Valley (USFWS 2002).

As part of their efforts to characterize habitat for the CRLF, EcoSystems West Consulting Group (2001) identified a total of 100 potential reproductive sites along the Carmel River floodplain. Twenty-two of these occurred in the main stem of the river and 78 occurred in off-channel sites. Numerous additional non-reproductive habitats were also identified. Incidental observations of CRLF in the Carmel River floodplain made during the habitat characterization and critical habitat mapping efforts included observations of adults at 69 sites, sub-adults at 22 sites, young of the year at 15 sites, and tadpoles at 13 sites (EcoSystems West Consulting Group 2001). The majority of potential reproductive sites tend to cluster in two general locations: behind the two existing reservoirs and below RM 1 in the Carmel River lagoon. Surveys conducted by Mullen (1996) indicate that CRLF populations occur in several tributaries of the Carmel River in addition to those identified in the main stem and its floodplain.

Several areas within the project area provide potential breeding habitat for CRLF. Potential breeding habitat consists of the cattail wetland and ponds 1, 2, and 3 (Figure 3.3-1). Suitable habitat for CRLF is also present within the Carmel River. There are additional ponds within the golf course but outside of the project area, that may also provide suitable habitat for CRLF. Although suitable aestivation habitat is not present within the golf turf surrounding the aquatic habitats, frogs could traverse this area to and from breeding sites and aestivation habitat along the perimeter of the golf course and along the Carmel River and intermittent drainage 1. There are a total of 12 CNDDB (2007) records for CRLF occurrences within 5-miles of the project area (Figure 3.3-2). No protocol-level surveys have been conducted for CRLF in the project area (Zander pers. comm.).

California Tiger Salamander

The Central California distinct population segment of the California tiger salamander is listed as threatened under ESA (69 FR 47217 and 47248, August 4, 2004). The project area is not located within critical habitat for California tiger salamander (70 FR 49380-49458, August 23, 2005. California tiger salamander is also a California species of special concern. California tiger salamander is endemic to the San Joaquin-Sacramento river valleys, bordering foothills, and coastal valleys of central California (Barry and Shaffer 1994). The species range

is from Sonoma County and the Colusa-Yolo County line south to Santa Barbara County in the Coast Range and from southern Sacramento County south to Tulare County in the Central Valley (Jennings and Hayes 1994). California tiger salamander inhabits low elevation areas, typically below 1,400-feet (65 FR 57242; September 21, 2000).

California tiger salamander is a lowland species restricted to grasslands and low foothill regions where its breeding habitat occurs (temporary ponds or pools, slower portions of streams, and some permanent waters) (Stebbins 2003). Permanent aquatic sites are unlikely to be used for breeding unless they lack fish predators (Jennings and Hayes 1994). California tiger salamanders also require dry-season refuge sites such as ground squirrel burrows, crevices in the soil, or other burrows (Loredo et al. 1996) in the vicinity of breeding sites (within 1-mile) (Jennings and Hayes 1994).

Adult California tiger salamanders move from subterranean burrow sites to breeding pools during November through February, after warm winter and spring rains (Jennings and Hayes 1994). California tiger salamander eggs hatch in 10–14 days and larvae generally metamorphose in 3–6 months (69 FR 47215, August 4, 2004). Juveniles may migrate up to one mile from breeding pools to upland areas (69 FR 47217, August 4, 2004).

Several areas within the project area provide potential breeding habitat for California tiger salamander. Potential breeding habitat consists of the cattail wetland and ponds 1, 2, and 3 (Figure 3.3-1). There are additional ponds within the golf course but outside of the project area, that may also provide suitable habitat for California tiger salamander. Although suitable aestivation habitat is not present within the golf turf surrounding the aquatic habitats, salamanders could traverse this area to aestivation habitat along the perimeter of the golf course and along the Carmel River and intermittent drainage 1. There are four CNDDB records for California tiger salamander occurrences within 5-miles of the project area (CNDDB 2007a) (Figure 3.3-2). The closest record is approximately 1.5-linear miles south of the project area.

Southwestern Pond Turtle

Southwestern pond turtle is a state species of special concern. The southwestern pond turtle is one of two subspecies of the western pond turtle. The southwestern pond turtle occurs from the vicinity of Monterey south to northwestern Baja California (Jennings et al. 1992).

Western pond turtle is thoroughly aquatic, preferring the quiet waters of ponds, lakes, marshes, rivers, streams, and irrigation ditches that have a rocky or muddy bottom and emergent vegetation (Stebbins 2003). The species occurs in a wide range of both permanent and intermittent aquatic environments (Jennings et al. 1992). Western pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris. Western pond turtles move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994). However, in the southern part of

their range and along the central coast of California, western pond turtles do not overwinter and are active year-round (Jennings et al. 1992).

The Carmel River provides suitable aquatic habitat for southwestern pond turtle. If ponds 1, 2, and 3 became sufficiently inundated, they could provide suitable aquatic habitat for pond turtles. Additional ponds within the golf course, but outside of the project area, also provide suitable habitat for pond turtles. The area adjacent to the Carmel River and the intermittent drainages may provide suitable habitat for egg deposition. There are no CNDDB (2007a) records for southwestern pond turtle within 5-miles of the project area.

White-Tailed Kite

White-tailed kite is fully protected under the California Fish and Game Code. White-tailed kite occurs in coastal and valley lowlands in California (Zeiner et al. 1990a).

White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetland, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Vegetation structure and prey populations appear to be more important than plant associations in determining suitability. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August (Zeiner et al. 1990a.) The female incubates the clutch of four or five eggs for 28-days (Dunk 1995) White-tailed kites prey mostly on voles (*Microtus* sp.) and other small mammals. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands (Zeiner et al. 1990a.).

Suitable nesting habitat for white-tailed kites is present within the riparian forest and woodland in and adjacent to the project area. There are no CNDDB (2007a) records for nesting white-tailed kites within 5-miles of the project area and no white-tailed kites were observed during the field surveys (Rana Creek Habitat Restoration 2004).

Cooper's Hawk

Cooper's hawk is a California species of special concern. Cooper's hawk is a year-round resident throughout much of California, except in the high Sierra Nevada. Migrants from the north winter in California, and residents move downslope and south from areas of heavy snow in fall and return in spring (Zeiner et al. 1990a). Cooper's hawk occurs within deciduous and mixed forests and open woodland habitats such as woodlots, riparian woodlands, and other areas where woodlands occur in patches or groves (Johnsgard 1990). Nests are often near man-made clearings or near water, (Johnsgard 1990) and are

sometimes located within urban environments (Boal and Mannan 1999). The species' breeding season is between March 1 and August 1. Cooper's hawk forages along forest edges and in broken habitats for small birds and small mammals (Zeiner et al. 1990a).

Suitable nesting habitat for Cooper's hawk is present within the riparian forest and woodland in and adjacent to the project area. There are no CNDDB (2007a) records for nesting white-tailed kites within 5-miles of the project area and no white-tailed kites were observed during the field surveys (Rana Creek Habitat Restoration 2004).

Western Burrowing Owl

The western burrowing owl is a California species of special concern and is protected under the MBTA and California Fish and Game Code. Western burrowing owls occur in many areas throughout California excluding the northwest coastal forests and high mountains (Zeiner et al. 1990a). Western burrowing owls require habitat with three basic attributes: open, well-drained terrain; short, sparse vegetation; and underground burrows or burrow facsimiles. Burrowing owls occupy grasslands, deserts, sagebrush scrub, agricultural areas (including pastures and untilled margins of cropland), earthen levees and berms, coastal uplands, and urban vacant lots, as well as the margins of airports, golf courses, and roads (Haug et al. 1993). Burrowing owls rely on burrows excavated by fossorial (i.e., digging) mammals including, ground squirrels (*Spermophilus* spp.), badgers (*Taxidea taxus*), skunks, foxes, and coyotes (*Canis latrans*) for nesting and cover (Karalus and Eckert 1987). They can also use natural and unnatural cavities in rock outcroppings, concrete or asphalt, and man-made artificial habitat (Center for Biological Diversity et al. 2003) such as cavities in piles of rubble.

Because of high maintenance of the golf turf, this area is unlikely to contain burrows for cover or nesting. However, the perimeter of the golf course may contain suitable burrows. An extensive search for burrows was not conducted during the field survey; however, mice burrows were observed in the weedy grassland/coyote brush area between the golf course and Carmel Middle School. If burrowing owls occurred on the margin of the project area or on adjacent properties, they could forage in the project area. There is one CNDDB record for burrowing owl, approximately 4-miles north of the project area (CNDDB 2007a) (Figure 3.3-2).

Purple Martin

Purple martin is a California species of special concern. Purple martins occur along coastal mountains from the California/Oregon border south to San Luis Obispo County, along the west slope of the Sierra Nevada, and in the northern Sierra and Cascade ranges at lower elevations. There are isolated, local populations in the Sacramento Valley and southern California. Purple martins

can be found in valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, riparian, and conifer habitats. They nest within old woodpecker cavities and in human-made structures such as bridges or culverts. The breeding season is from April to August (Zeiner et al. 1990a).

Suitable nesting habitat for purple martin may be present within the Monterey pine forest and the riparian forest and woodland in and adjacent to the project area. There are no CNDDB (2007a) records for nesting purple martins within 5-miles of the project area and no purple martins were observed during the field surveys (Rana Creek Habitat Restoration 2004).

Yellow Warbler

Yellow warbler is a California species of special concern. Yellow warblers nest throughout California except in the Central Valley, the Mojave Desert region, and high altitudes along the eastern side of the Sierra Nevada. Breeding habitat includes riparian woodlands, montane chaparral, and open ponderosa pine and mixed conifer habitats with extensive brushy understories. Nests are built 2 to16-feet above ground in a deciduous sapling or shrub. Yellow warblers mainly eat insects and spiders (Zeiner et al. 1990a).

Suitable nesting habitat for yellow warbler is present within the riparian forest and woodland in and adjacent to the project area. There are no CNDDB (2007a) records for nesting yellow warblers within 5-miles of the project area and no yellow warblers were observed during the field surveys (Rana Creek Habitat Restoration 2004).

Tricolored Blackbird

Tricolored blackbird is a California species of special concern. The vast preponderance of the population occurs in central California, with additional populations in coastal and inland southern California locations, as well as scattered sites in Oregon, western Nevada, and western coastal Baja California. (Beedy and Hamilton 1997, 1999; Hamilton 2000)

Tricolored blackbird breeding colony sites require open accessible water, a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony (Hamilton et al. 1995; Beedy and Hamilton 1997, 1999). Historically, tricolored blackbird breeding colonies were nearly all located in freshwater marshes dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.) (Neff 1937). More recently, an increasing percentage of breeding colonies have been documented in Himalaya blackberries (*Rubus discolor*) (Beedy et al. 1991; Cook 1996, 1999), and in silage and grain fields (Hamilton et al. 1995; Beedy and Hamilton 1997; Hamilton 2000). Tricolored blackbird foraging habitats in all seasons include annual grasslands; wet and dry vernal pools and other seasonal wetlands; agricultural fields (such as large tracts of alfalfa with continuous

mowing schedules and recently tilled fields); cattle feedlots; and dairies. Tricolored blackbirds also forage occasionally in riparian scrub habitats and along marsh borders. Weed-free row crops and intensively managed vineyards and orchards do not serve as regular foraging sites. (Beedy and Hamilton 1997, 1999). Most tricolored blackbirds forage within 3-miles of their colony sites (Orians 1961), but commute distances of up to 8-miles have been reported (Beedy and Hamilton 1999).

A small amount of potential breeding habitat is present in the project area within the cattail wetland and pond 3 (0.6 acre total). Other golf course ponds outside of the project area may also provide breeding habitat. If tricolored blackbirds nest on or near the golf course, they may occasionally forage within the project area. Potential foraging habitat appears to be present south and west of the project area, south of the Carmel River. There are no CNDDB records for tricolored blackbirds within 5-miles of the project area. However, tricolored blackbirds have been observed foraging at a nearby golf course in the Carmel Valley (Beedy pers. comm.). Based on the small amount of breeding habitat within the project area, there is a low potential for tricolored blackbirds to breed on the site.

Pallid Bat, Hoary Bat, and Non-Special-Status Bats

Pallid bat is found throughout most of California at low to middle elevations (6,000-feet). Pallid bats are found in a variety of habitats including desert, brushy terrain, coniferous forest, and non-coniferous woodlands. In Central and Northern California, the species is associated with oak, ponderosa pine, redwood, and giant sequoia habitats. Pallid bats forage among vegetation and above the ground surface, eating large ground-dwelling arthropods and large moths. Daytime roost sites include rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are commonly under bridges but are also in cave and mines (The Wildlife Society 1996). Hibernation may occur during late November through March. Studies suggest that pallid bats periodically arouse to drink during hibernation (Orr 1954). Pallid bats breed in late October and November in Central California (Orr 1954) and one or two young per female are born in May or June (The Wildlife Society 1996).

Hoary bats are found throughout much of California from sea level to 13,200 feet. They are found primarily in forested habitats, as well as riparian areas, and parks and gardens in urban areas. Hoary bats occur year round in California and overwinter in the San Francisco Bay area and to the south. This species day roosts in the foliage of trees primarily and do not roost in colonies. One to four young per female are born in May or June but reproduction does not likely occur in California. (The Wildlife Society 1996)

Suitable roosting habitat for pallid bats, hoary bats, and non-special-status bats may be present within larger trees located in the project area. Trees would typically be used as day roost sites. No night roosting sites were observed in the project area. Pallid, hoary, and other bat species could also forage in the project area. There are two historic records from 1907 and 1948 for occurrences of hoary

bats within 5 miles of the project area (CNDDB 2007a). There are no CNDDB records for pallid bat or other bat species within 5-miles of the project area.

Monterey Dusky–Footed Woodrat

Monterey dusky-footed woodrat is a California species of special concern. Monterey dusky-footed woodrat is a subspecies of the dusky-footed woodrat (*Neotoma fuscipes*). The Monterey dusky-footed woodrat occurs throughout Monterey and northern San Luis Obispo Counties where appropriate habitat is available. Dusky-footed woodrats can be found in chaparral, streamside thickets, and deciduous or mixed woodland habitats (Burt and Grossenheider 1980). In forest habitats, they are generally found where these is a moderate canopy with a dense to moderate understory. Dusky-footed woodrats construct nests out of sticks, grass, leaves, and other debris and the availability of these nest-building items may limit abundance of woodrats (Zeiner et al. 1990b). The riparian forest and woodland in the project area provides suitable habitat for Monterey dusky-footed woodrats. A woodrat nest was observed along intermittent drainage 1 in the project area. There are no CNDDB records within 5-miles of the project area.

Non Special-Status Migratory Birds, including Raptors

Several non-special-status migratory birds, including raptors, could nest in and adjacent to the study area based on the presence of suitable nesting habitat (riparian forest and woodland, Monterey pine stands, coyote brush scrub, and cattail and bulrush wetland). The breeding season for most birds is generally from March 1 to August 30. The occupied nests and eggs of these birds are protected by federal and state laws, including the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503 and 3503.5. CDFG is responsible for overseeing compliance with the codes and makes recommendations on nesting bird and raptor protection.

A focused nest survey was not conducted during the October 2005 field survey. Several migratory birds and raptors, including red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), Anna's hummingbird, Nuttall's woodpecker, and wrentit were observed during surveys during Fall 2003 and Spring 2004, and could breed in the project area. These generally common species are locally and regionally abundant.

Steelhead

The South-Central California Coast Distinct Population Segment (DPS) of steelhead is currently listed as threatened under the federal ESA (FR 71: 834). This DPS includes all naturally spawned populations of steelhead in California streams from Aptos Creek to south of Grover City. The Carmel River is designated critical habitat (FR 70: 52488).

Steelhead trout begin migrating up coastal and inland streams from November through early May to spawn in freshwater streams. Juvenile steelhead spend up to 3 years rearing in freshwater. They migrate to the ocean where they feed for up to 3 years, after which they return to their natal streams to breed.

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.

Following upstream migration, the female establishes a territory and digs a redd (gravel nest) with her tail, usually in areas where there is sufficient subsurface flow to sustain eggs and alevins (yolk-sac fry) through the incubation period (usually the lower ends of pools or heads of riffles). She then lays the eggs in the redd where they are fertilized by one or more males. Eggs buried in redds hatch in 3-4 weeks (at 10-15 Celsius) and fry emerge from the gravel 2-3 weeks later. The fry initially live in quiet waters close to shore and soon establish feeding territories that they defend against other juveniles. As they grow during spring and summer, juvenile steelhead move to faster, deeper water in riffles, runs, and pools. They typically maintain positions near swift currents that carry drifting aquatic and terrestrial insects on which they feed. Some juveniles may move downstream to the lower reaches of streams or lagoons during the summer and fall to complete their freshwater rearing phase.

After one year of stream residence, most juveniles become smolts (juveniles adapted to seawater) and migrate downstream to the ocean in late winter and spring. Some juveniles remain in fresh water 1-2 more years before they enter the ocean. Because juvenile steelhead rear for a year or more in freshwater, juveniles of different age groups are usually present year-round in California coastal streams.

Most steelhead spend 1-3 years in the ocean before returning to spawn. Some adults return to the ocean after spawning (kelts) and return to spawn again. Occasionally, juvenile steelhead mature in freshwater and spawn without migrating to the ocean. This occurs most frequently during droughts when juveniles are trapped in the river and cannot migrate to the ocean.

The upstream migration of adults in the lower Carmel River primarily occurs from mid-December through mid-April in response to flows of sufficient magnitude and duration to stimulate movement of adults, permit passage of adults past critical riffles in the lower river, and keep the river mouth open between storms. Although suitable migration conditions may occur earlier, adults typically do not begin arriving at San Clemente Dam until late December or January. Depending on migration opportunities later in the season, the migration of adults may continue into April.

The primary spawning season for steelhead in the Carmel River is February through March but spawning may continue through mid-April. Downstream of San Clemente Dam, the highest concentration of redds generally occurs upstream of the Narrows but redds have been observed as far downstream as RM 5.5. The

Rancho Canada Golf Course is located further downstream between RM 2 and RM 3.

In the Carmel River, most steelhead fry emerge from the gravel in April-June and rear for at least one year in the river before migrating to the ocean as smolts. Juveniles may migrate downstream to lower reaches of the Carmel River in late spring or early summer of their first year of life (young-of-the-year or age 0+ juveniles) or in late fall and early winter of their first, second, or third years (as yearling and older juveniles). Juveniles of all age classes may migrate as far downstream as the lagoon in years when flows to the lagoon are sustained through the summer and fall. Substantial downstream movement of juveniles in late fall and early winter appears to be associated with the initial storms of the season that result in spill and increased flows downstream of San Clemente Dam.

Many juvenile steelhead in the Carmel River become smolts and enter the ocean in late winter and spring after one year in the river. A small number remains for two to three years before emigrating.

The steelhead run in the Carmel River at the time of the Spanish explorers was believed to be upwards of 12,000 fish (SWRCB 1995). The river was overfished during the mid-to-late 1800s, and the runs subsequently declined. Snider (1983) reported annual runs of 1,200 adult steelhead at the San Clemente Dam fishway during the mid-1970s. During droughts in 1976-77 and the late 1980s, no steelhead passed San Clemente Dam. The Lagoon never opened during the four years from 1987 to 1990. Density of rearing juvenile steelhead reached very low levels by 1989 but have increased in subsequent years. After lows of zero returning adult steelhead in 1989-90, one fish in 1991, and 15 in 1992, the run has increased to an average of a few hundred fish. Viable steelhead populations in the Carmel River depend on sufficient attraction flows, passage flows for adults and smolts, suitable spawning and egg-incubation conditions, and good rearing conditions (CPUC 2000). The most recent 5-year mean abundance of fish in the Carmel River is approximately 600 adults (FR 71:834).

Other Carmel River Fish Species

The fish community in the Carmel River is diverse relative to other Central Coast streams. Twenty species have been identified within the river and lagoon, including 12 native and 8 introduced species. Sculpin (*Leptocottus armatus*), brown trout (*Salmo trutta*), hitch (*Lavinia exilicauda*), stickleback (*Gasterosteus aculeatus*), and steelhead are the most abundant species. Species composition in the lower river and lagoon may change as a function of the connectivity of the mouth of the river with the ocean (CPUC 2000).

Regulatory Setting

Federal Regulations

Endangered Species Act

The federal ESA protects fish and wildlife species, and their habitats that have been identified by USFWS or National Oceanic and Atmospheric Administration (NOAA) Fisheries 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 NOAA Fisheries. In general, NOAA Fisheries 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 NOAA Fisheries, 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 with a determination that the proposed action either:

- 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 U.S. Government Code [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 Animal Damage Control Officer makes recommendations on related animal protection issues.

Clean Water Act

The federal Clean Water Act (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 Chapter 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 2 types: *wetlands* and *other waters of the United States*.

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 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 U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. USACE 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 project area are under the jurisdiction of the USACE San Francisco District.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, ESA, and NHPA have been met. In addition, USACE 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.

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. CDFG 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 is one fully protected species, white-tailed kite, which has the potential to occur in the project area.

Streambed Alteration Agreements (Section 1602 et seq.)

CDFG has jurisdictional authority over wetland resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1602. CDFG 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, CDFG 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.

CDFG 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 CDFG 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 Regulations

This section summarizes County General Plan policies that pertain to biological resources that could affect or be affected by the Proposed Project.

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 Planning and Building Inspection. 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 (MCGP 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 floodway. 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).

Impacts Analysis

Criteria for Determining Significance

The State CEQA Guidelines were used to develop the following significance criteria.

The project would have a significant impact on biological resources 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 CDFG 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted 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 Project 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

Table 3.3-5. Total Area of Impact on Vegetation by Community Type in the Project Area

Community Type	Impact Area (Acres)	Area to be Restored (Acres)
Golf Turf and Landscaping	53.0	0.0
Monterey Pine	0.2	0.0
Coyote Brush Scrub	11.5[1]	0.0
Wetland Vegetation	0.6	0.8
Ponds	0.6	0.0
Riparian Forest and Woodland	0.6	18.0
Total[2]	**66.5**	**19.4**

Notes:

1. Includes 10.4 open cover and 1.1 dense cover

2. Does not include 2.7 acres of disturbed habitat that will be impacted

Impact BIO-1: Loss of Coyote Brush Scrub Habitat (Less than Significant)

Up to 11.5-acres of coyote brush scrub habitat would be permanently removed from the Proposed Project area. Approximately 10.4-acres of this total consists of open coyote brush scrub with an understory dominated by non-native ruderal species, while approximately 1.1-acres consists of dense coyote brush scrub.

The loss of this area of coyote scrub habitat 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 this area of coyote brush scrub is not expected to contribute to the destruction or deterioration of an individual, population, or habitat for special-status species. Impacts are considered *less than significant*. No mitigation is required.

Impact BIO-2: Loss of Monterey Pine Stands (Less than Significant with Mitigation)

Up to 3.2 acres of Monterey pine stands could be permanently removed from the Proposed Project area. Approximately 3.0 acres of this total consists of Monterey pine stands located on the existing golf course, with an understory dominated by non-native grasses found in golf turf. These stands were almost certainly planted after grading for the golf course took place. Approximately 0.2 acre consists of a single stand in the Hatton Parcel with an understory of open coyote brush scrub. This stand may be a remnant of a larger Monterey pine forest.

The loss of this 0.2 acre Monterey pine stand is considered potentially significant because this stand may be native in which case CDFG would consider it sensitive. This impact is considered *potentially significant*, but would be reduced to a *less-than-significant level* with the implementation of Mitigation Measures BIO-1 and BIO-2.

Mitigation Measure BIO-1: Avoid Impacts on Monterey Pine Stand if Feasible

The applicant shall avoid or minimize impacts on the 0.2-acre Monterey pine stand, if feasible.

The Monterey pine stand shall be protected from temporary construction disturbance by installing environmentally sensitive area fencing (orange construction barrier fencing) around it. 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-2: Conserve 0.6 Acres of Monterey Pine Forest to Mitigate for Loss of a Potentially Native Stand

If it is not feasible to avoid affecting the 0.2-acre Monterey pine stand, the applicant shall mitigate for its loss by preservation of Monterey pine forest elsewhere at a 3:1 ratio. Priority will be given to sites that are closest to the project area and that are connected to intact Monterey pine forest, 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-3: Loss or Disturbance of Special-Status Plant Occurrences (Less than Significant with Mitigation)

Construction activities associated with the Proposed Project could result in the disturbance or loss of special-status plant occurrences in the project area. Two special-status plant species, Eastwood's goldenbush and San Francisco gumplant,

were not readily identifiable at the time of the botanical surveys conducted for this project (See Special Status Plants discussion above). Therefore, these two species could occur within the project area. Activities associated with construction could destroy or damage these special status plant species if they were located in the project area. This impact is considered *potentially significant*, but would be reduced to a *less-than-significant* level by implementation of Mitigation Measures BIO-3, 4, and 5.

Mitigation Measure BIO-3: Conduct a Survey for Summer Blooming Special-Status Plant Species

The applicant shall retain a qualified botanist to conduct a survey of the Hatton Parcel for Eastwood's goldenbush and a survey of coyote brush scrub patches in the project area for San Francisco gumplant. A survey of the Hatton Parcel between July and October would allow for the identification of Eastwood's goldenbush if it were present in this area. A survey of the coyote brush scrub throughout the project area between June and September would allow for the identification of San Francisco gumplant if it were present. If special status plant occurrences are identified in the course of these surveys, the perimeters of the occurrences will be mapped using a global positioning system (GPS) with submeter accuracy, and staked to facilitate avoidance. A report shall be prepared and submitted to the applicant and the County describing the results of these surveys.

Mitigation Measure BIO-4: Avoid or Minimize Impacts on Special-Status Plant Species Populations by Redesigning the Project, Protecting Populations, and Implementing a Compensation Plan (If Necessary)

The applicant shall implement the following measures to avoid or minimize impacts on special-status plant species if any occurrences are documented in the surveys prescribed in Mitigation Measure BIO-3.

- The project shall be redesigned or modified to avoid direct and indirect impacts on special-status plant species, if feasible.
- Special-status plant species near the project site shall be protected from temporary construction disturbance by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant species populations. 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.

If impacts are unavoidable, the applicant shall coordinate with CDFG and Monterey County to determine a compensation plan to replace the loss of special-status plants. If necessary, the applicant shall develop and implement a compensation plan in coordination with and with the approval of CDFG and Monterey County. The compensation plan shall preserve an off-site area

containing the affected special status plant or plants. The compensation area shall contain an equal or greater amount of plants and/or acreage (as determined in consultation with CDFG) as that lost due to the project. The amount of preserved area shall include adjacent areas if necessary in order to preserve the special-status plant population in perpetuity. The applicant shall be responsible to acquire the mitigation site in fee or in conservation easement, to maintain the mitigation site for the benefit of the special-status plant population in perpetuity, and shall fund the maintenance through the establishment of an endowment. Annual monitoring of the mitigation site within the habitat preserve shall be conducted for 5 years to assess vegetative density, population size, natural recruitment, and plant health and vigor to assure that an equal amount of plants or plant acreage is being sustained through the implemented site maintenance. The site shall be evaluated at the end of the 5-year monitoring period to determine whether the mitigation has met the success criteria of preserving a population the same size/and or area as that lost due to development of the site and whether adjustments in site maintenance are necessary.

Mitigation Measure BIO-5: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Before any work occurs in the project area, a qualified biologist shall conduct mandatory contractor/worker awareness training for construction personnel. The awareness training shall be provided to all construction personnel to brief them on the need to avoid impacts on riparian woodland (see Mitigation Measure BIO-6, below) and any special status plant species that are identified as occurring on the site and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor shall ensure that the personnel receive the mandatory training before starting work. The applicant shall be responsible for implementing this measure. Documentation of this measure, such as a training attendance sheet signed by construction personnel, shall be kept on file by the applicant to demonstrate to the County that the measure has been implemented.

Impact BIO-4: Loss of Riparian Forest and Woodland Habitat (Less than Significant with Mitigation)

Up to 0.6-acres of riparian forest and woodland habitat, including 0.3-acres of willow scrub, 0.2-acres of sycamore woodland and 0.1 acre of riparian woodland, would be permanently removed from the Proposed Project area. Construction of would remove riparian forest along intermittent drainages 1 and 2. Removed trees would include 88 mature cottonwoods, 25 arroyo willows, and 2 western sycamores.

In addition, riparian woodland downstream of the Rio Road west extension may be degraded due to the diversion of flows currently entering this drainage from a culvert upstream. Construction of the Proposed Project would involve routing these flows through a new storm drain line emptying through a culvert into the Carmel River. The drainage would still receive local surface flows from the north and west. These flows may be adequate to support the riparian overstory.

However, it is likely that understory riparian vegetation would be replaced by vegetation adapted to less mesic conditions.

As described in Chapter 3.2, *Hydrology and Water Quality*, due to increased in velocities in the Carmel River over short section (~100 to 200 feet) of the river on the eastern end of the project reach, local scouring of the river channel may occur. Extensive channel adjustment (degradation or erosion) is not expected because of the limited extents of increased velocities. The channel is expected to adjust to the change in velocities, eventually reaching a new equilibrium. Local bank erosion could occur during this period. If this occurs, then there could be loss of riparian vegetation along the eroded bank. Loss of riparian vegetation along the Carmel River would be a significant impact, given its role in providing shade and habitat for steelhead, California-red-legged frog and riparian bird species.

The loss of riparian forest and woodland habitat is considered *significant* because this habitat type is a sensitive natural community that is rare in the region and has been subject to extensive loss due to development. However, this impact will be reduced to a *less-than-significant* level by implementation of Mitigation Measures BIO-5, BIO-6, BIO-7, and BIO-8.

Mitigation Measure BIO-6: Minimize Disturbance of Riparian Forest and Woodland

Riparian forest and woodland outside of the construction footprint will be protected from disturbance. Prior to construction, a qualified botanist will erect environmentally sensitive area fencing (orange construction barrier fencing) around riparian forest and woodland areas near the construction area, to identify and protect these sensitive resources. 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-7: Restore Riparian Forest to Compensate for the Loss of Riparian Forest Habitat

The applicant will compensate for the permanent or temporary loss or disturbance of riparian forest habitat associated with the Rio Road east and west extensions through onsite restoration/creation of forested riparian habitat in the habitat preserve area that will occupy over 31 acres in the Carmel River floodway currently occupied by golf turf and landscaping. Compensation will be provided at a minimum ratio of 1:1 (1 acre restored or created for every acre removed). It is anticipated that a much greater area of riparian woodland will be restored (approximately 18 acres) than will be removed (0.6 acre) by the Proposed Project. In addition, all of the willows, cottonwoods, and western sycamores that will be removed during the project will be replaced within the Habitat Preserve.

Restoration activities shall occur during and after construction of the project's residential development component. The restoration shall be in process

throughout construction of Phases 1-3 of development, when grading will occur, and ponds/water quality basins and utilities will be installed. Planting will occur after construction of the residential development has been completed. The applicant will retain a qualified restoration ecologist to develop a conceptual restoration and monitoring plan that describes how riparian forest and woodland will be restored and monitored over a 10-year period. The applicant will be responsible for ensuring that the restoration and monitoring plan is implemented.

After restoration and revegetation are completed, monitoring and reporting will be conducted for ten years on an annual basis or until the success criteria (below) are achieved. The purpose of this monitoring will be to ensure that these criteria are met and to identify any necessary remedial actions. If the criteria are met prior to 10 years, then monitoring needs will be reevaluated by the ecologist. These standards can be modified after 3 years if the ecologist determines that the preceding standards cannot be feasibly maintained due to adverse natural conditions on the site.

The revegetation/restoration plan for riparian forest and woodland will be considered successful when the following success criteria are met.

- The restored site is composed of a mix of native species similar to that found in the adjacent riparian woodland along the Carmel River.
- The restored site has at least the same level of absolute cover of native vegetation currently present in the impacted areas.
- Plantings are self-sustaining without human support (e.g., weed control, rodent and deer control, irrigation).
- Functions and values of the restored habitat are comparable to or better than those in the riparian habitat that will be impacted).

Remedial action, such as replanting of native riparian species or control of non-native species, will be required if any of the above criteria are not met during the monitoring period. The purpose of the remedial action will be to ensure that the above criteria are met.

Mitigation Measure BIO-8: Monitor Bank Erosion in Project Reach and Restore Riparian Vegetation and River Bank if Disturbed Due to Increased Velocities

The applicant shall monitor the portion of the Carmel River adjacent to the project for potential bank erosion due to increased flow velocities. Monitoring shall be at a minimum on an annual basis following the wet season. Where bank erosion and/or riparian vegetation is identified as lost due to project-induced increase in velocities, the applicant shall obtain all required regulatory permits to restore disturbed banks and riparian vegetation. Riparian plantings shall follow the requirements described in Mitigation Measure BIO-7 above.

Impact BIO-5: Loss of Wetlands and Other Waters of the United States (Less than Significant with Mitigation)

Construction of roads and houses associated with the project will result in the loss of California bulrush marsh, cattail marsh, and ponds in the project area. These wetlands and ponds are considered potential waters of the United States.

The Proposed Project would result in a loss of 0.6 acres of ponds and 0.6 acres of wetland habitat. This would represent a substantial adverse effect on a sensitive biological community (California bulrush marsh) and common biological communities (cattail marsh and ponds) that provide habitat for a variety of plants and wildlife.

In addition, construction activities and residential development could result in temporary and long-term increased inputs of fine sediment and toxic materials associated with construction and automobiles to the Carmel River, intermittent drainages 1 and 2, and the restored riparian woodland and created wetlands in the proposed habitat preserve. Inputs of sediment and toxic materials, such as oil and grease, could result in the mortality of riparian and wetland plants and wildlife. Sediment inputs could also alter the profiles of the drainages, reducing riparian area. Increased runoff resulting from added impervious surfaces in the project area could result in the alteration of drainage hydrology. Altered hydrology could result in higher peak flows and a shorter period of flow in streams or inundation in wetlands. Shortening the period of flow in drainages could degrade the habitat value of these areas by reducing the dominance of riparian plants. Increasing peak flows in streams would reduce the stability of these channels. Increased peak flows would increase erosion and bank slumping, reducing the habitat value of these streams by choking the streambed and floodplain with fine sediment and reducing the stability of the bank and floodplain where riparian vegetation occurs.

This impact is considered *potentially significant*, but would be reduced to a *less-than-significant level* by implementation of Mitigation Measures BIO-6 through BIO-10, as well as Mitigation Measures HYD-1, through HYD-4 (water quality measures, previously described in Chapter 3.2, *Hydrology and Water Quality*).

Mitigation Measure BIO-9: Delineate Waters of the U.S. and Waters of the State in the Project Area

The applicant shall ensure that a qualified wetland scientist conducts a delineation of waters of the U.S. for the project area. The USACE delineation shall be conducted using the routine on-site methods described in USACE's 1987 *Wetland Delineation Manual*. The results of the survey, including a map, will be summarized in a delineation report. The report shall be verified by USACE and the Regional Water quality Control Board and shall provide a basis for calculating impacts from the Proposed Project.

Mitigation Measure BIO-10: Restore or Create Waters of the U.S. and the State to Mitigate Permanent Loss of Wetland and Pond Habitat

In order to ensure that implementation of the Proposed Project results in no net loss of wetland habitat functions and values, the applicant will compensate for

the loss of wetland and pond habitat through onsite and/or offsite creation of both pond and wetland habitat. The preliminary restoration plan that has been prepared for the Proposed Project includes the creation of seasonal basins that could restore wetland habitat, but may not restore the lost pond habitat. Depending on the need for mitigation for impacts to CRLF and/or California tiger salamander, mitigation for pond habitat may need to be off-site.

The preliminary restoration plan for the habitat preserve will be implemented under the biologist's guidance. Subject to approval by USACE, RWQCB, and the County, the final restoration plan will address temporary and permanent impacts.

Wetland function and values will be considered in developing an effective mitigation plan in consultation with USACE, RWQCB and the County. Function and values considerations that will be addressed in the restoration plan include wildlife use, percentage of vegetative cover and/or density, approximate plant height; plant and animal species diversity, root development, and canopy stratification.

The performance criteria shall replace lost wetland and pond habitat on a minimum 1: 1 compensation ratio or greater (if determined necessary by RWQCB or USACE). Specific measurable criteria for the above factors will be incorporated into the plan in conformance with applicable regulatory requirements and USACE' and RWQCB's Guidelines.

Prior to any work that could disturb wetland or riparian habitat within the project area, the applicant will obtain the following permits as required by the following agencies.

- USACE—Nationwide or individual permit as required under Clean Water Act Section 404.
- Central Coast RWQCB—Water quality certification or waiver under Clean Water Act Section 401.
- CDFG—Streambed Alteration Agreement.
- USFWS— Authorization under Section 7 of the federal Endangered Species Act.

Impact BIO-6: Loss of Protected Trees (Less than Significant with Mitigation)

Construction activities associated with the Proposed Project 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. Current project design maps indicate that construction of the Proposed Project could result in

disturbance or loss of one coast live oak tree and twenty redwoods, which fall under the definition of protected trees in Monterey County. This impact is considered *potentially significant*, but would be reduced to a *less-than-significant* level by implementation of Mitigation Measure BIO-11.

Mitigation Measure BIO-11: Redesign Project 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 the project cannot be redesigned to avoid impacting the coast live oak tree and twenty redwood trees, then the following compensation will occur. The protected coast live oak tree that will be removed for the project will be replaced at a ratio of 2:1 in an upland area. The twenty redwood trees, which are protected under the County ordinance, will also be replaced at a 2:1 ratio. Any trees planted as remediation for failed plantings shall be planted as stipulated here for original plantings, and shall be monitored for a period of five years following installation. Tree replacement shall occur after project construction.

B. Impacts on Wildlife

Impact BIO-7: Loss or Disturbance of California Red-Legged Frog Aquatic Habitat and Potential Loss of California Red-Legged Frog Adults, Larvae, or Eggs (Less than Significant with Mitigation)

Construction of the Proposed Project would result in the filling of the cattail wetland and ponds 1, 2, and 3, which provide potential breeding habitat for CRLF (1.2 acres). If CRLF occur in the wetland and ponds, filling of these areas would result in the loss of aquatic habitat and the potential mortality of adults, larvae or eggs.

Current project design maps of the construction area indicate that construction activities associated with the Proposed Project could directly impact the Carmel River, which provides suitable aquatic habitat for CRLF. Direct impacts to aquatic habitat include trimming riparian vegetation and sediment and chemical runoff during construction. In addition, the increase in impervious surface upon completion of the proposed development could result in increased runoff into the Carmel River. The increased runoff and potential increase of urban contaminants flowing into the river could result in changes to the quality of aquatic habitat (as described under Impact BIO-5) for the CRLF within the Carmel River. These changes could result in the loss of or diminish the quality of breeding habitat for the CRLF. The amount of habitat potentially affected would need to be determined during the site assessment and surveys, as described below. Project construction would also remove up to 17.5 acres of potential aestivation/upland habitat along the perimeter of the golf course in disturbed/open coyote brush scrub and along the drainages in the project area. Finally, if CRLF are present within the construction area, individuals could be injured or killed by moving construction equipment during grading and other construction activities. The

potential for the loss of aquatic habitat and substantial disturbance or mortality of CRLF, a federally threatened species, is considered a *significant impact.* This impact would be minimized and reduced to a *less-than-significant* level by implementation of Mitigation Measures BIO-12 through 16 described below.

Mitigation Measure BIO-12: Conduct Formal Site Assessment and Consult with U.S. Fish and Wildlife Service to Determine if Protocol-Level Surveys are Necessary

The applicant will retain qualified biologists to conduct a formal site assessment for CRLF according to USFWS' *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (August 2005). The site assessment includes assessing the project area and a 1-mile area around the project area. The results of the site assessment will be submitted to the Ventura USFWS field office, which will determine if protocol-level surveys are necessary. If these surveys are recommended, they will be conducted according to the guidelines and a report of the survey results will be submitted to USFWS. Based on the results of the site assessment and surveys, USFWS would provide guidance on how the CRLF should be addressed through the ESA Section 7 or Section 10 process. If CRLF are not found during protocol-level surveys and USFWS concurs with this negative finding, no further mitigation would be necessary; however, it is uncertain if USFWS would concur with this finding, given that red-legged frogs are known to occur in the Carmel River. If frogs are found or USFWS otherwise determines that the site is CRLF habitat, Mitigation Measures BIO-13 through 16 would be implemented.

Mitigation Measure BIO-13: Restrict Filling of Ponds/Wetlands and Initial Ground-Disturbing Activities in California Tiger Salamander and California Red-Legged Frog Habitat to the Dry Season (May 1 to October 15)

To minimize mortality of California tiger salamander and CRLF eggs, larvae, and adults, ponds 1, 2, and 3, and the cattail wetland, will only be filled during May 1 through October 15. During this time of year, California tiger salamanders would have left breeding areas to aestivate underground and would not be present in ponds. CRLF may still be present at ponds during this time of year, however number of individuals is likely to be lower than earlier in the season. Therefore, prior to filling, ponds should be surveyed for CRLF (see Mitigation Measure BIO-14). To minimize disturbance of breeding and dispersing California tiger salamanders and CRLF, initial construction activity (including grading) within California tiger salamander upland habitat (as defined above) shall be conducted during the dry season between May 1 and October 15 or before the onset of the rainy season, whichever occurs first. If construction activities are necessary in upland habitat between October 16 and April 30, the County will contact the USFWS Ventura field office for approval to extend the work period.

Mitigation Measure BIO-14: Conduct a Preconstruction Survey for California Tiger Salamander and California Red-Legged Frog

A qualified USFWS-approved biologist will conduct a preconstruction survey two weeks prior to the onset of work for California tiger salamanders and CRLF. The name and credentials of the biologist will be submitted to USFWS for approval at least 15 days prior to the commencement of work. The survey will

include all suitable breeding, foraging, cover, and aestivation habitat in the construction area. If feasible, aestivation areas will be fenced and avoided. If potential aestivation burrows cannot be avoided, they will be excavated by hand prior to construction and the approved biologist will move individuals to natural burrow sites within 0.25 mile of the construction site. If a California tiger salamander or CRLF is found within aquatic habitat, the biologist will contact USFWS to determine if relocation of any life stages is appropriate. The biologist will document the results of the survey on construction survey log sheets, which will be kept on file at the County.

Mitigation Measure BIO-15: Monitor Initial Ground Disturbing Construction Activities within California Tiger Salamander and California Red-Legged Frog Habitat

A qualified USFWS-approved biologist shall monitor initial ground disturbing construction activities within California tiger salamander and CRLF upland habitat. The biologist shall look for California tiger salamander and CRLF during grading, excavation and vegetation removal activities. If a California tiger salamander or CRLF is discovered, construction activities shall cease until the salamander or frog has been removed from the construction area and released near a suitable burrow (salamander) or other aquatic habitat (frog) within 0.25 mile from the construction area. Any relocation of these species would require take authorization from the USFWS.

Mitigation Measure BIO-16: Compensate for the Removal and Disturbance of California Tiger Salamander and California Red-Legged Frog Breeding and Upland Habitat

The applicant will compensate for the permanent loss of suitable breeding habitat for California tiger salamander and CRLF by creating or preserving suitable aquatic habitat within a USFWS-approved conservation area and preserving adjacent upland habitat. The location of this area should be determined in consultation with USFWS through the ESA Section 7 process. The typical compensation ratio for permanent impacts to habitat is 3:1. The actual compensation ratio will be determined in consultation with USFWS and CDFG. Southwestern pond turtles may also benefit from this mitigation measure. The conservation area would be permanently restricted from development. A management plan for the conservation area would be developed by the applicant and approved by USFWS and CDFG prior to construction. There may be suitable locations in or adjacent to the nearby Palo Corona Regional Park for creation of aquatic habitat and preservation of upland habitat.

Impact BIO-8: Loss or Disturbance of California Tiger Salamander Aquatic Habitat and Potential Loss of California Tiger Salamander Adults, Larvae, or Eggs (Less than Significant with Mitigation)

Construction of the Proposed Project would result in the filling of the cattail wetland and ponds 1, 2, and 3, which provide potential breeding habitat for California tiger salamander (1.2 acres). If the wetland and ponds were occupied by California tiger salamanders, the filling of these areas would result in the loss

of aquatic habitat and the potential mortality of adults, larvae or eggs. Project construction would also remove potential aestivation habitat (17.5 acres) along the perimeter of the golf course in disturbed/open coyote brush scrub and along the drainages in the project area. In addition, if California tiger salamanders are present within the construction area, individuals could be injured or killed by moving construction equipment during grading and other construction activities. The potential for the loss of aquatic habitat and substantial disturbance or mortality of California tiger salamander, a federally threatened species, is considered a *significant impact*. This impact would be minimized and reduced to a *less-than-significant* level by implementation of the following mitigation measure:

Mitigation Measure BIO-17: Conduct Formal Site Assessment and Consult with U.S. Fish and Wildlife Service to Determine if Interim Presence/Negative Finding Surveys are Necessary

The County will retain qualified biologists to conduct a formal site assessment for California tiger salamander according to USFWS' and CDFG's *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (October 2003). The site assessment includes assessing the project area and a 1-mile area around the project area. The results of the site assessment will be submitted to the County, Ventura USFWS field office, and the CDFG Central Coast regional office. USFWS and CDFG will determine if interim presence/negative finding surveys are necessary. If these surveys are recommended, they will be conducted according to the guidelines and a report of the survey results will be submitted to both agencies. Based on the results of the site assessment and surveys, USFWS would provide guidance on how California tiger salamander should be addressed through the Section 7 or Section 10 process. If California tiger salamanders are not found during protocol-level surveys and USFWS concurs with this negative finding, no further mitigation would be necessary. If salamanders are found, Mitigation Measure BIO-12 through BIO-16 would be implemented (because habitat and impacts to CRLF are similar, these measures apply to both species). Additional measures may be required by USFWS during the Section 7 or Section 10 process.

Impact BIO-9: Loss or Disturbance of Southwestern Pond Turtle Aquatic Habitat and Potential Loss or Disturbance of Southwestern Pond Turtles (Less than Significant with Mitigation)

Construction of the Proposed Project would result in the filling of the cattail wetland and ponds 1, 2, and 3, which provide potential aquatic habitat for southwestern pond turtle. If southwestern pond turtles occur in the wetland and ponds, filling of these areas would result in the loss of aquatic habitat and the potential mortality of adult or juvenile turtles. Construction activities (such as grading and movement of heavy equipment) adjacent to the Carmel River and along intermittent drainages 1 and 2 could result in injury or mortality of southwestern pond turtles or pond turtle nests containing eggs or young

individuals if these areas are being used for egg deposition. Declines in populations of western pond turtles throughout the species range have been documented (Jennings and Hayes 1994). Loss of individuals within the project area could diminish the local population and lower reproductive potential, which could contribute to the further decline of this species. The loss of upland nesting sites or eggs would also decrease the local population. For these reasons, this impact is considered *potentially significant*, but would be reduced to a *less-than-significant* level by implementation of the following mitigation measure.

Mitigation Measure BIO-18: Conduct a Preconstruction Survey for Southwestern Pond Turtles and Monitor Construction Activities within Suitable Aquatic Habitat

To avoid construction-related impacts on southwestern pond turtles, the County shall retain a qualified wildlife biologist to conduct a preconstruction survey for southwestern pond turtles no more than 48 hours before the start of construction within suitable aquatic habitat (as discussed above) and upland habitat (along the Carmel River and intermittent drainages 1 and 2). The wildlife biologist shall look for adult pond turtles, in addition to nests containing pond turtle hatchlings and eggs. If an adult southwestern pond turtle is located in the construction area, the biologist shall move the turtle to a suitable aquatic site, outside the construction area. If an active pond turtle nest containing either pond turtle hatchlings or eggs is found, the County shall consult CDFG to determine and implement appropriate avoidance measures, which may include a "no-disturbance" buffer around the nest site until the hatchlings have moved to a nearby aquatic site.

In addition to the preconstruction survey, the County's biological monitor shall be present during initial construction activities within aquatic and upland habitat, as described above. If a southwestern pond turtle is observed within the construction area, the biological monitor will attempt to capture and move the turtle to a suitable aquatic site, outside the construction area. Because the habitat preserve will be constructed adjacent to the Carmel River, the conversion of golf turf to natural habitat will replace and provide additional upland and nesting habitat along the river for turtles, which will compensate for the loss of upland habitat. The detention ponds in the preserve may provide additional aquatic habitat for turtles and compensation for loss of breeding habitat for California tiger salamander and CRLF may also benefit turtles, depending on the location of the preserved or restored habitat. No additional mitigation for habitat loss is needed.

Impact BIO-10: Potential Loss or Disturbance of Breeding or Wintering Western Burrowing Owls and Their Burrows (Less than Significant with Mitigation)

The perimeter of the golf course may contain suitable burrows for breeding or wintering burrowing owls. If such burrows are present and are occupied by burrowing owls, grading and movement of other heavy equipment could result in the removal of an occupied breeding or wintering burrow site and loss of

burrowing owl adults, young, or eggs. Because burrowing owls have experienced large population declines throughout a significant portion their range (Center for Biological Diversity et al. 2003), loss of burrowing owls and their young or eggs is considered *significant*, but would be reduced to a *less-than-significant* level by implementation of the following mitigation measure(s). Implementation of this (these) measure(s) would also ensure compliance of the MBTA.

Mitigation Measure BIO-19: Conduct a Survey for Suitable Burrows for Western Burrowing Owls

At least one year prior to construction, the County will retain a qualified biologist to conduct a focused survey for suitable burrows for western burrowing owls along the perimeter of the golf course, within the project area and in a 250-foot-wide buffer zone around the project area boundary. If no suitable burrows or sign of ground squirrel activity is observed, no further mitigation is required. If suitable burrows are observed, Mitigation Measure BIO-21 should be implemented.

Mitigation Measure BIO-20: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the CDFG Guidelines for Burrowing Owl Mitigation, if Burrows are Detected in the Survey Area

The *Staff Report on Burrowing Owl Mitigation*, published by CDFG (CDFG 1995), recommends that preconstruction surveys be conducted to locate active burrowing owl burrows in the construction area and in a 250-foot-wide buffer zone around the construction area. The County shall retain a qualified wildlife biologist to conduct preconstruction surveys for active burrows according to CDFG guidelines. The preconstruction surveys shall include a nesting season survey and a wintering season survey conducted in the winter and spring/summer prior to initiation of the Proposed Project. If no burrowing owls are detected, then no further mitigation is required. If active burrowing owls are detected in the survey area, the following measures shall be implemented.

- Occupied burrows shall not be disturbed during the nesting season (February 1–August 31). Whenever, avoidance is feasible, no disturbance should occur within 160 feet of occupied burrows during the nonbreeding season (September 1–January 31) or within 250 feet during the breeding season (February 1–August 31).
- When destruction of occupied burrows is unavoidable during the non-nesting season (September 1–January 31), unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (installing artificial burrows) at a ratio of 2:1 on nearby protected lands approved by CDFG. Newly created burrows shall follow guidelines established by CDFG.
- If owls must be moved away from the construction area, passive relocation techniques (e.g., installing one-way doors at burrow entrances) shall be used instead of trapping. At least 1 week shall be necessary to accomplish passive relocation and allow owls to acclimate to alternate burrows.
- If owls must be moved away from the construction area, the County shall acquire and permanently protect a minimum of 6.5 acres of foraging habitat

per occupied burrow identified in the construction area. The protected lands should be located adjacent to the occupied burrowing owl habitat in the project area or at another occupied site near the project area. The location of the protected lands shall be determined in coordination with CDFG. The County shall also prepare a monitoring plan, and provide long-term management and monitoring of the protected lands. The monitoring plan shall specify success criteria, identify remedial measures, and require an annual report to be submitted CDFG.

Impact BIO-11: Potential Loss or Disturbance of Tricolored Blackbirds and Their Breeding Habitat (Less than Significant with Mitigation)

Potential breeding habitat for tricolored blackbirds is present within the cattail wetland and pond 3 (0.6 acre) in the project area. As mentioned previously, the potential for tricolored blackbird to nest in these areas is low. However, if tricolored blackbirds were breeding in this area, filling of this wetland would result in the removal breeding habitat and the potential loss of tricolored blackbird adults, young, or eggs. Because the population of tricolored blackbirds has declined significantly from historic levels throughout its range (Beedy and Hamilton 1997), loss of tricolored blackbirds and their young or eggs is considered *significant*, but would be reduced to a *less-than-significant* level by implementation of Mitigation Measure BIO-21. Implementation of this measure would also ensure compliance of the MBTA. The banks of detention basins (1.7 acres) within the habitat preserve will be planted with rushes and tules. Tules planted within these areas would replace the cattail and bulrush (tules) vegetation at the wetland and pond 3 that would be lost during construction. Therefore, the loss of potential tricolored blackbird habitat would be mitigated for within the habitat preserve and no further mitigation for habitat loss is needed.

Mitigation Measure BIO-21: Conduct Surveys for Breeding Tricolored Blackbirds

The County will retain a qualified biologist to conduct two surveys for nesting tricolored blackbirds during the breeding season (late March through June). The biologist will survey suitable breeding habitat within the project area and, if access is available, suitable habitat in the surrounding area up to ½ mile. The survey should be conducted during the spring prior to construction. If no nesting tricolored blackbirds are found, no further action is necessary. If tricolored blackbirds area found to be nesting within the project area, the County shall consult CDFG to determine and implement appropriate avoidance measures, which may include a “no-disturbance” buffer around the nest site until the breeding season has concluded.

Impact BIO-12: Potential Loss or Disturbance of Monterey Dusky-Footed Woodrat or Their Nests (Less than Significant with Mitigation)

Construction activities within riparian woodland and forest along the Carmel River and intermittent drainages could destroy Monterey dusky-footed woodrat middens (nests) and injure or kill individuals. Impacts to intermittent drainages 1 and 2 would occur during construction of the two proposed access roads to the proposed development. Because of the limited range of this subspecies, it is considered rare. Only four occurrences have been recently documented in Monterey County (CNDDB 2006). Loss of individuals within the project area could diminish the local population and lower reproductive potential, which could result in a local decline of this subspecies. For these reasons, this impact is considered *potentially significant*, but would be reduced to a *less-than-significant* level by implementation of the following mitigation measure.

Mitigation Measure BIO-22: Conduct Surveys for Woodrat Middens and Relocate Woodrats and Middens Prior to Construction Activity
The County will retain a qualified biologist to conduct a survey in all suitable habitat in the project area that will be impacted by construction for woodrat middens. This survey shall be conducted prior to any clearing or grading activities in the project area. If no middens are found within this area, no further action is required. If middens are found, the biologist will trap and relocate woodrats out of the construction area (using live-traps) within 30 days of the start of construction. In addition, the biologists will attempt to relocate the midden to the same area that the woodrats are released. Because the habitat preserve will be constructed adjacent to the Carmel River, the conversion of golf turf to natural habitat will replace and provide additional riparian habitat along the river for woodrats, which will compensate the amount of riparian and woodland habitat lost.

Impact BIO-13: Potential Loss or Disturbance of Tree and Shrub Nesting Migratory Birds and Raptors (Less than Significant with Mitigation)

Coyote brush scrub, Monterey pine stands, and riparian forest in and adjacent to the project area provides suitable nesting habitat for special-status birds including white-tailed kite, Cooper's hawk, purple martin, and yellow warbler. These habitats also provide suitable nesting habitat for non-special-status migratory birds, including red-shouldered hawk, red-tailed hawk, Nuttall's woodpecker, California thrasher, spotted towhee, wrentit, Anna's hummingbird and red-winged black bird. Because the habitat preserve will be constructed adjacent to the Carmel River, the conversion of golf turf to natural habitat will replace shrubs and trees that will be lost during construction. Coast live oak, western sycamore and cottonwoods would be replaced at a 2:1 ratio within the preserve area. Therefore, no additional mitigation is needed for habitat loss.

If construction occurs during the breeding season (generally between March 1 and August 30), construction activities (e.g., vegetation removal, grading, noise, etc.) that occur within the project area could result in nest abandonment and subsequent loss of eggs or developing young at active nests located in or near the project area. This impact would be 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 following mitigation measure would reduce this impact to a *less-than-significant* level and avoid violating the MBTA and California Fish and Game Code.

Mitigation Measure BIO-23: Remove Vegetation During the Nonbreeding Season and Avoid Disturbance of Nesting Migratory Birds and Raptors

Clearing and grading the site for construction will 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). Removing 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 the project area should also take place during the nonbreeding season to avoid impacts to nesting birds in these areas. Migratory birds and raptors in and adjacent to the 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 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.

Impact BIO-14: Potential Loss or Disturbance of Pallid Bat, Hoary Bat, and Non-Special-Status Bats Species (Less than Significant with Mitigation)

Removal of trees with cavities during project construction could result in the mortality, injury, or disturbance of bats if they were roosting within these trees when they were removed. Because construction will not occur at night, the foraging activities of bats would not be disturbed. Alternative roosting sites (other trees) are available near the project area and bats may use these alternate sites if construction activities discourage them from using trees within the project area. However, there may be some permanent loss of suitable roosting habitat if trees with suitable cavities are removed. Because the habitat preserve will be constructed adjacent to the Carmel River, the conversion of golf turf to natural habitat will replace trees that will be lost during construction and over time, these may provide roosting habitat for bats. Loss of individual pallid bats within the project area could diminish the local population and lower reproductive potential, which could result in a local decline of this species. This impact is considered *potentially significant*, but would be reduced to a l*ess-than-significant* level by implementation of the following mitigation measure.

Mitigation Measure BIO-24: Conduct a Survey for Suitable Roosting Habitat and Evidence of Roosting Bats and Avoid Disturbing Them

During April–September before construction begins, the County will retain a qualified bat biologist who will survey trees that will be removed in the project area and identify any snags, hollow trees, or other trees with cavities that may provide suitable roosting habitat for pallid bats, hoary bats, and non-special-status bats. This survey will be conducted before any tree removal occurs. If no suitable roosting trees are found, removal of trees may proceed (in accordance with Mitigation Measure BIO-11). If snags, hollow trees, or other trees with suitable cavities are found, these will be examined for roosting bats. If bats are not found and there is no evidence of use by bats, removal of trees may proceed. If bats are found or evidence of use by bats is present, trees should not be

removed and CDFG should be consulted for guidance on measures to take to avoid and minimize disturbance of the bats. Measures may include excluding bats from the tree prior to their hibernation period and before construction begins. Bat boxes should be installed within the habitat preserve to compensate for the temporal loss of roosting habitat.

Impact BIO-15: Temporary and Permanent Impacts to Steelhead Trout and other Carmel River Fish (Less than Significant with Mitigation)

The project could result in five different potential impacts to steelhead and other fish in the Carmel River: construction related impacts, stormwater runoff from residential development, changes in habitat due to changes in water use levels, changes in habitat due to changes in stream morphology, and potential fish stranding during high-flow events.

Construction Impacts

Runoff from proposed construction activities could temporarily degrade water quality in Carmel River (see Chapter 3.2, *Hydrology and Water Quality*), which may adversely affect fish downstream from the site. These temporary disturbances would result in adverse effects on special-status fish species. This impact is considered significant, but would be reduced to a *less-than-significant* level by implementation of Mitigation Measures HYD-1 through HYD-5 (see Chapter 3.2, *Hydrology and Water Quality*).

Stormwater Runoff From Residential Development

As described in Chapter 3.2, *Hydrology and Water Quality*, the project would result in increased residential stormwater runoff that may contain contaminants that could affect the water quality in the Carmel River. This is considered a *significant* water quality impact and a *significant* biological impact to steelhead and other fish in the Carmel River. Mitigation Measures HYD-1 (Preliminary Stormwater Plan Recommendations), HYD-6 (Best Management Practices to Maximize Stormwater Quality), and HYD-7 (Compliance with Monterey County Regional Stormwater Program) will reduce this potential water quality and biological resource impact to a *less-than-significant level.*

It should be noted that the change from active golf course use (with its associated herbicide and fertilizer use) to a residential and park/preserve use should result in a net reduction in loading of herbicides and fertilizer into the Carmel River given the reduction in irrigated acreage from approximately 57 acres at present to less than 20 acres with the project (3 acres of irrigated/maintained park, 3 acres of irrigated parkways, 4 acres of retained golf course, and perhaps as much as 5 to 10 acres within residential lots).

Changes in Water Use

As analyzed in Chapter 3.10, *Public Services, Utilities, and Recreation*, the project is expected to reduce withdrawals from the Carmel River alluvial aquifer during wet, average, dry, and very dry years. The amount of reduced withdrawals

could vary from less than 20 AF to 50 AF. Reduction in withdrawals from the Carmel River alluvial aquifer will mean that normal (i.e., non-storm event) flows in the lower part of the river will be greater with the project than without. Increased flows could contribute to improved steelhead migratory access, larger areas of rearing habitat, improved riparian vegetation and/or improved water quality (dissolved oxygen, temperature, etc,) in the river and in the Carmel lagoon. This is considered a *beneficial* impact to steelhead and other fish species in the Carmel River.

Stream Morphology

As analyzed in Chapter 3.2, *Hydrology and Water Quality*, filling of a portion of the 100-year floodplain for residential development will increase high-flow stream velocities in a small (100 to 200 foot) section of the Carmel River adjacent to the proposed project. As discussed above under Impact BIO-4, this change could result in limited bank erosion and loss of riparian vegetation. This impact can be mitigated to a *less than significant level* through Mitigation Measure BIO-8.

High-Water Flow Stranding Potential

The excavation of approximately 120,000 CY of soil from the lower floodplain and creation of a basin within the park/preserve area will create a potential for stranding of fish during high-flow events.

The 10-year flow is 11,000 cfs. The water surface elevation (WSEL) for this flow at the upstream end of the basin would be 33.0 feet whereas the lip of the basin is 35 feet. At the middle of the basin, the 10-year WSEL would be 33.4 feet compared to the basin edge would be between 34 and 35 feet. At the downstream end of the basin, the 10-year WSEL would be 32.2 feet and the basin edge elevation would be between 29 and 30 feet. Thus, for a 10-year flow event, the basin would not overtop at the upper end or middle, but flow would enter from the lower end of the basin. The 10-year flow was the smallest flow analyzed, so it is unknown if the basin would fill from the lower end more frequently such as for a 5-year or 2-year event.

Since there is no outlet channel from the basin, it is possible that steelhead and other fish could be stranded in the basin during high-flow events at a more frequent interval than every ten years. If steelhead were to become trapped in the new basin, this would be considered a *significant* impact. Although this impact would be infrequent, Mitigation Measure BIO-25 would minimize potential mortality of individual steelhead during high-flow events and thus this impact would be reduced to a *less-than-significant* level.

Mitigation Measure BIO-25: Rescue Steelhead, if Stranded in Site Basin, During High-Flow Events

The applicant shall apply to the National Marine Fisheries Service and to the California Department of Fish and Game for permission to rescue steelhead if they become trapped in the new site basin. The applicant shall be responsible for arranging the inspection of the basin after any storm event that results in temporary filling from the Carmel River. Steelhead shall be rescued from the basin and either returned to the Carmel River immediately and/or be held at an

appropriate facility (such as the MPWMD Sleepy Hollow facility) until it is safe to return them to the River. The applicant may choose to effect this mitigation through arrangement with organizations that are already involved with fish rescue on the Carmel River such as MPWMD and the Carmel River Steelhead Association.

Chapter 3.4

Aesthetics

Introduction

This chapter provides a discussion of the aesthetics issues related the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of federal, state, and local policies and regulations related to aesthetics; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

The aesthetic impacts from the Proposed Project are summarized in Table 3.4-1 below. As shown in Table 3.4-1, the Proposed Project would have some significant impacts related to aesthetics within the project area. However, with the implementation of the mitigation measures described in this section, all of the impacts listed would be reduced to less-than-significant levels.

Table 3.4-1 Aesthetics Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Visual Character and Quality			
AES-1: Conversion of Recreational Open Space to Residential Use	LTS	None Required	–
AES-2: Changes in Views from Existing Residences and Other Public Viewpoints	Potentially Significant	AES-1: Implement Measures to Reduce Visual Intrusion for Existing Residences and Other Public Viewpoints	LTS
B. Scenic Vistas and Corridors			
AES-3: Changes in Views from Existing Scenic Routes	LTS	None Required	–
C. Light and Glare			
AES-4: Create a New Source of Light and Glare	Potentially Significant	AES-2: Implement Measures to Reduce Light and Glare for Existing Residences	LTS

LTS = Less than Significant

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 through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and viewer 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 a particular viewshed. These terms and criteria are described in detail below.

Visual Character

Both natural and artificial landscape features comprise the character of an area or view. Visual character is influenced by a combination of geologic, hydrologic, botanical, wildlife, and urban features. Urban features include those associated with landscape settlements and development, including 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 comprise the viewshed change. The appearance of the landscape is described in terms of the dominance of these various features.

Judgments of visual character must be made based on a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing 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 on a flat landscape but have very little significance in mountainous terrain.

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 with the overall sensitivity of the viewer. Viewer sensitivity or concern 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 views, the number of viewers, and the type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer relative to the resource; therefore, visibility and visual dominance of landscape elements are dependent on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1983). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic regions or types of terrain, the standard foreground zone is 0.25 to 0.5 miles from the viewer, the middleground zone extends from the foreground zone to approximately 3 to 5 miles from the viewer, and the background zone extends from the middleground to infinity (USDA Forest Service 1974).

Visual sensitivity is dependent on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally 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 (USDA Forest Service 1974, Federal Highway Administration 1983, U.S. Soil Conservation Service 1978). Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic and not on surrounding scenery, and therefore 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.

Environmental Setting

Regional Visual Character

The project site is located in the Carmel Valley in northern Monterey County, which 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 includes 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, they tend to support a rich mosaic of oak forests, chaparral scrublands, grasslands, and riparian habitats, and are generally characterized by rolling hills and broad northwest-southeast trending valleys.

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. Carmel Valley has traditionally been divided into three areas: the Lower Valley area, near State Route (SR) 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 proposed County scenic route and the principal arterial through the valley, extends from SR 1 to U.S. Highway 101 (Hwy 101), connecting to Salinas Valley in the east. Laureles Grade Road, another proposed County scenic route, connects Carmel Valley Road with SR 68, which ultimately

extends east to Hwy 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.

Project Vicinity

Rancho Cañada Golf Club is situated on approximately 270-acres of land near the mouth of the Carmel Valley, just east of the intersection of Carmel Valley Road and SR 1. The project site is located on 81+ acres of the existing 18-hole West Course, which is bounded by a second 18-hole course to the east (the East Course), the Carmel River to the south, the residential areas to the west, and two public facilities – Carmel Valley Community Church and Carmel Valley Middle School – to the north. The existing site is composed of traditional golf course design features, such as fairways, sand bunkers, water hazards, and landscaped rough areas, with a number of distinctive natural elements forming the background to the site.

Entrance to the project site is gained via a two-lane road that connects to Carmel Valley Road approximately 1 mile east of its intersection with SR 1. The road extends due south for a short distance and then forks west toward the community church and east towards the Rancho Cañada Golf Course clubhouse. From the clubhouse, a paved golf cart path provides internal access to both the East and West Courses. Presently, entrance to the West Course cannot be gained from the west. This is principally due to an existing security gate and fence along the western border of the project site, which prohibits access from the residential areas to the west. In addition, an existing vegetated berm and buffer strip along the northern border of the project site hinders access to the site from the school and church properties to the north.

Due to being a relatively open and flat area, the project site permits expansive views of Carmel Valley in all directions. Distinctive natural features include the mature riparian woodland habitat associated with the Carmel River drainage corridor that borders the site to the south and the hills of the nearby Santa Lucia Range. Prominent topographic features include an unnamed, west-facing ridge that is girdled by an unpaved trail halfway up the slope, and two prominent ridgelines, Chamisal Ridge and the ridgeline associated with Saddle Mountain, which are visible further to the east. In general, the hills to the south of the project site are characterized by steep, undulating slopes separated by deep swales, while the northern side of the valley consists of gentle slopes traversed by narrow canyons. Much of the valley north of the project site consists of preserved open space; however, conspicuous residential development occurs on the hillside between Hatton and Martin Canyons, northwest of the project site. Other distinctive developed features within the viewshed of the project area include the buildings associated with the school and church to the north, and the residential areas located adjacent to Rio Road and Carmel Rancho Boulevard. In addition to these neighboring developments, a single, two-story yellow structure,

presumably a residence, overlooks the site from the west, near Val Verde Drive. Representative on-site views are shown in Figures 3.4-1 and 3.4-2.

Views of the Project Site from Adjacent Areas

Because of the project site's proximity to established neighborhoods, the most prominent views of the site are from existing homes west of the golf course with views to the east. In general, residences located in the project vicinity have foreground views of the site and background views of the upper valley ridgelines. Limited visual screening is provided by the vegetated buffer that grows along Rancho Cañada's existing western fence line; however, the buffer only affects the residences located south of Rio Road and does not screen the single residence on Val Verde Drive or the residences situated on Carmel Rancho Boulevard. From Carmel Middle School, views of the project site tend to be expansive, with largely unobstructed foreground views of the site and background views of prominent Santa Lucia ridgelines to the south. Very little of the project site is visible from the church, however, as it is screened from view by an existing 4 to 5-foot-tall berm near the southern border of the church property.

From within the existing Rancho Cañada golf complex, several fairways located on the northeastern portion of the East Course provide direct, although somewhat narrow, views of the project site. Views from this vantage point feature the site in the foreground and the ridgelines of the Lower Carmel Valley in the distant background. The remainder of the East Course provides only limited views of the site through occasional clearings in the vegetation. Visibility becomes progressively more difficult the further south one moves in relation to the project site. The predominant northwest-southeast orientation of the fairway buffer vegetation, which often consists of dense stands of mature trees, limits views beyond the immediate foreground in most places.

Although Carmel Valley Road is located less than 1,000 feet from the proposed east entrance of the subdivision, the project site is generally obscured from vehicular traffic traveling east and west by foreground elements such as the school complex, church, and related landscaping. As with views from within the Rancho Cañada Golf Course, the existing fairway buffer vegetation limits middleground views of the site from Carmel Valley Road. As such, views from the roadway at best provide a distant glimpse into the project area. To the west of the site, the existing configuration of homes along Carmel Rancho Boulevard and the relative ubiquity of landscaped street trees make viewing difficult from many nearby residential streets as well. Direct views of the site are thus limited to vehicular traffic traveling on portions of Rio Road and Val Verde Drive in the immediate project vicinity.

Regulatory Setting

This section discusses the federal, state, and local policies and regulations that are relevant to the analysis of aesthetics in the proposed Rancho Cañada Village Specific Plan project area being considered by Monterey County.

Federal Policies and Regulations

There are no specific federal regulations that apply to the aesthetic resources associated with this project.

State Policies and Regulations

California Department of Transportation

State Scenic Highway Program

California's Scenic Highway Program was created by the California State Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. The status of a state scenic highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. For the purpose of visual resource protection, this analysis shall treat eligible roadways with the same status as officially designated roadways (California Department of Transportation 1996).

One designated scenic highway is within the vicinity of the Proposed Project: the portion of SR 1 that extends from the Carmel River to SR 68 in Monterey County. The route passes over a series of rolling hills, permitting views of Carmel-by-the-Sea, the Carmel River Valley, Point Lobos, and the Pacific Ocean.

Local Policies and Regulations

Overview

The Rancho Cañada Village Specific Plan project site is located in a presently unincorporated area of Monterey County, where it occurs within the plan area boundaries of the Carmel Valley Master Plan (CVMP) and the Greater Monterey Peninsula Area Plan (GMPAP). The Proposed Project is therefore subject to the goals, policies, and objectives set forth in the Monterey County General Plan, CVMP, and GMPAP. It would also be guided by the proposed Specific Plan, which if approved, would function to implement policies found within these other plans. A discussion of the individual plans and policies that apply to the Proposed Project is included below.

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 26.1.9. In order to preserve the County's scenic and rural character, ridgeline development shall not be allowed unless a special permit is first obtained. Such permit shall only be granted upon findings being made that the development as conditioned by permit will not create a substantially adverse visual impact when viewed from a common public viewing area.[1] New subdivisions shall avoid lot configurations which create building sites that will constitute ridgeline development. Siting of new development visible from private viewing areas, may be taken into consideration during the subdivision process.

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.

[1] The Monterey County Zoning Ordinance, Section 21.06.195, defines a "common public viewing area" as a public area such as a street, road, designated vista point, or public park from which the general public ordinarily views the surrounding viewshed.

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 GMPAP is one of eight non-coastal area 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. These areas are as shown in Figure 3.4-3. The project site, as shown in Figure 3.4-3, is located in a visually sensitive area and the ridge to the south is considered highly sensitive. 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 26.1.9.1. Development on canyon edges and hilltops shall be designed to minimize the visual impact of the development.

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.[2] 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;

[2] 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.

- 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 plan 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 1986) 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.

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 Road shall be minimized in number and clustered near existing natural or man-made vertical features.

Policy 26.1.31. Materials and colors used in construction shall be selected for compatibility with the structural system of the building and with the appearance of the buildings natural and man-made surroundings.

Policy 26.1.32. Development should be located in a manner that minimizes disruption of views from existing homes. This applies to road cuts as well as structures.

Policy 40.1.1.1. County Scenic Route status shall be sought for Carmel Valley Road.

Policy 40.2.1.1. An appropriate setback of 100 feet shall be established along Carmel Valley Road without causing existing structures to become non-conforming and without rendering existing lots of record unbuildable.

Rancho Cañada Village Specific Plan

The proposed Specific Plan (Appendix B) seeks to fulfill the existing goals, objectives, and policies of other plans, including the Monterey County General Plan and the CVMP. To ensure that the Proposed Project conforms to existing standards for new development, the Specific Plan includes architectural design standards that govern the style, height, massing, composition, materials, and colors of new buildings; design standards that restrict the use of certain landscape materials, upgrade accessories, and ornamental plant species; and site development standards that guide the construction of roads, drives, sidewalks, and bike lanes; the placement of utilities; and the size and spacing of home lots.

Discussion of specific development standards is included with the discussion of potential impacts and mitigation measures later in this chapter.

Impact Analysis

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:

A. Visual Character and Quality

- Substantially degrade the existing visual character or quality of the site and/or surrounding area, result in ridgeline development, or be incompatible with the development scale and style of the 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.

Assessment Methods

Assessment of the aesthetics impacts of the Proposed Project are based on the following methods:

- Direct field observation from vantage points, including neighboring buildings, property, and roadways (conducted October 6th, 2005);
- Photographic documentation of key views of and from the project site, as well as regional visual context;
- Review of project construction drawings; and
- Review of the project in regard to compliance with state and local ordinances and regulations pertaining to visual quality.

Impacts and Mitigation Measures

A. Visual Character and Quality

Impact AES-1: Conversion of Recreational Open Space to Residential Use (Less than Significant)

Implementation of the Proposed Project would change the visual character of the project site by converting approximately 42 acres of the existing West Course of Rancho Cañada Golf Club from a recreational use to a residential use. Approximately 34 acres would be converted from golf to park or habitat preserve. Although the project would be generally consistent with visual resource

policies of the Monterey County General Plan, GMPAP and CVMP, the conversion from a recreational use to a developed condition would constitute a considerable change in the visual character of the area.

Approximately 281 residential units on 42 acres would be developed on the 81-plus acre site, with the remaining 39 acres retained as open space. The open space would be located primarily in the southern portion of the site and would continue to preserve the existing natural riparian woodland vegetation that grows along the Carmel River. By creating a habitat preserve, in which the existing artificially wooded landscape would be partially restored to an open grassland area, the project would serve to enhance the visual character and quality of the open space environment and would thus conform to Policy 26.1.26 of the CVMP, which states that development should 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."

The proposed residential units would be located on the valley floor at or near the existing grade and would not result in ridgeline development. In accordance with Policy 26.1.28 of the CVMP, which states that development in grassland areas visible from Carmel Valley Road should be "clustered near existing natural or man-made vertical features," the proposed development would be generally obscured from the roadway viewshed by existing development and landscaped features in the immediate foreground. The project would also be located adjacent to an existing residential development on Rio Road.

Building height limitations and limitations on the number of stories for each proposed land use type included in the Specific Plan and are summarized in Table 3.4-2. The maximum number of stories is two and the maximum building height is 35 feet.

Table 3.4-2. Summary of Height Limits

Land Use Categories	Description	Permitted Number of Stories	Maximum Dimension Between finished 1st and 2nd floor elevations	Maximum building height above finished 1st floor elevation
RL (detached single-family)	Residential Low	1 story	12 feet	20 feet
RM (detached single-family)	Residential Medium	2 stories	12 feet	35 feet
RM (detached townhouse)	Residential Medium	2 stories	12 feet	35 feet
P	Parks	1 story	n/a	25 feet
OS	Open Space	1 story	n/a	25 feet

Source: Rancho Cañada Village Specific Plan Section 3 (Appendix B)

The Specific Plan (Appendix B) includes a pattern book that establishes minimum standards for the intended neighborhood character, house designs, and landscape elements. The design guidelines contained in the pattern book include community patterns, which set standards for how buildings are sited on the various lot types; architectural patterns, which establish design guidelines for the prescribed architectural styles; and landscape patterns, which provide guidelines for individual landscaping on lots.

The pattern book includes three architectural styles for Rancho Cañada Village: Central Coast Craftsman, Carmel Valley Farmhouse, and Monterey Revival. The pattern book also includes a variety of lot types, including townhouse, cottage, meadow, valley and preserve lots. Most of these lots have rear lane accessed parking with continuous front yard landscaping. Lot types are mixed throughout the community. Table 3.4-3 provides a summary of lot specifications for each of the lot types included in the Specific Plan.

The project design would result in a mixture of residences and open space to retain a semi-rural character. The gross density of the project would be less than 4 units per acre. Within the residential area, the overall density would be between 6 and 7 units per acre, similar to the approximately 25-acre area along the south side of Rio Road west of the project site, which has a zoned density of just over 7 units per acre in the CVMP. Approximately 39 acres would be dedicated to open space. Although development would be visible from the residential areas to the west, including the existing residential developments near Rio Road and Carmel Rancho Boulevard, and the single residence near Val Verde Drive, the proposed Specific Plan would contain design measures to assure the development would be sensitively designed and sited and would be visually compatible with the development scale and style of the surrounding area. Therefore, this impact is considered *less than significant,* and no mitigation is required.

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

From public roadways and viewpoints in the project vicinity, development within the subdivision would be visible at a number of locations. Existing dense vegetation would screen some of the views from many residential properties and neighborhood public roadways west of the site. However, less obscured views from public viewpoints and roadways located west, north, and east of the site would be affected by development of the Rancho Cañada Subdivision. These would include views from the neighboring portions of Rio Road and Val Verde Drive, from the school complex, and from the fairways located on the East Course. Visual simulations of views from three viewpoints around the site (see Figure 3.4-4 for a viewpoint location map) are shown in Figures 3.4-5 through 3.4-7. These simulations are intended to illustrate the effect of the development's block and mass on existing views and do not reflect the architectural styles presented in the Rancho Cañada Village Pattern Book.

Table 3.4-3. Summary of Lot Specifications

		Lost size		Setbacks					
Lot Type	Uses	Width (feet)	Depth (feet)	Front (feet)	Side St. (feet)	Side Yard (feet)	Rear (feet)	Off-Street Parking	Encroachments
Townhouse Lots	Attached Single-Family Residential	18 to 30	80	5 to 15	5 to 10	n/a	5 min	2 Spaces	Porches and or Bay Windows, 2 into the Front Yard and Side Street Setback Zone.
Cottage Lots	Single-Family Residential	30 to 35	80	5 to 15	5 to 15	4	5 min	2 Spaces	Porches and/or Bay Windows, 2 into the Front Yard and Side Street Setback Zones.
Meadow Lots	Single-Family Residential	40 to 45	100	5 to 20	5 to 15	5	5 min	2 Spaces min.	Porches and/or Bay Windows, 2 into the Front Yard and Side Street Setback Zones.
Valley Lots	Single-Family Residential	50 to 55	100	10 to 25	5 to 15	5	5 min	2 Spaces min.	None permitted
Preserve Lots	Single-Family Residential	55	100	10 to 20	n/a	5	10 to 20	2 Spaces min.	None Permitted

Source: Rancho Cañada Village Specific Plan Pattern Book (Appendix B)

The response of various viewer groups to the Proposed Project would vary in accordance with the types of activities they engage in and the overall frequency and duration of their views. For instance, golfers using the neighboring East Course would have a moderate sensitivity to visual changes because their line-of-sight would shift frequently as a result of golfing activity. Due to the existing pattern of vegetation on the East Course, which would continue to prohibit direct views of the project site in most places, awareness of the development among this viewer group would likely be moderate as well.

Of all the potentially affected viewer groups, the residential viewers to the west would likely have the most acute response to changes in visual quality that would occur as a result of the Proposed Project. Only a few of the residences west of the project site have private views to the northeast that would be affected by the proposed development. The Proposed Project would block views of hills from the west for some of these residents (see Figure 3.4-7). However, the project would provide a trail to the park where views of the northern hills could be seen. The project would not affect views along Rio Road of the southern hills or of the Carmel River. Viewers in the vicinity of the school and to some extent the church would also be adversely affected by the project, as the development would introduce new visual elements into the foreground that would obstruct views of prominent topographic features to the south. Therefore, this impact is considered *significant*. Implementation of Mitigation Measure AES-1 would reduce the impact to a *less-than-significant* level.

Mitigation Measure AES-1: Implement Measures to Reduce Visual Intrusion for Existing Residences and Other Public Viewpoints

The project developer 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; and
- Provide a vegetative buffer around the periphery of the project site 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.

B. Scenic Vistas and Corridors

Impact AES-3: Changes in Views from Existing Scenic Routes (Less than Significant)

The project site would be located in an area that has been mapped as “sensitive” in Figure 10 of the GMPAP (see Figure 3.4-3) and would therefore be visible from one or more existing or proposed scenic routes in the project vicinity. As discussed previously, the development would be partially visible from Carmel

Valley Road, a proposed scenic route. Views south from Carmel Valley Road toward the Rancho Cañada subdivision consist of forested hills and ridges in the background and views of existing semi-rural development in the foreground. Some individual homes within the proposed development have the potential to be visible from Carmel Valley Road. Figure 3.4-8 illustrates the visibility of the proposed development from Carmel Valley Road from the perspective of passing vehicles. As shown in the figure, most views of the development are blocked by intervening structures or vegetation. Based on the site's distance from the roadway, short duration of the view, and the design guidelines required by the Rancho Cañada Village Specific Plan, the visual impact from Carmel Valley Road would be *less than significant*. No other existing roads within the vicinity of the project site are designated County Scenic Routes in the Monterey County General Plan or the Monterey County Draft General Plan Update, nor is the project within the viewshed of the designated scenic portions of SR 1. Therefore, this impact is *less than significant,* and no mitigation is required.

C. Light and Glare

Impact AES-4: Create a New Source of Light and Glare (Less than Significant with Mitigation)

The Proposed Project would introduce nighttime light sources associated with both streetlights and lighting of the proposed buildings. In addition, some glare associated with the new buildings could occur on sunny days. These effects could be noticeable from the existing residences located west of the site. Therefore, this impact is considered *significant*. Implementation of Mitigation Measure AES-2 would reduce the impact to a *less-than-significant* level.

Mitigation Measure AES-2: Implement Measures to Reduce Light and Glare for Existing Residences

The project developer will implement the following measures to reduce light and glare for existing residences:

- Use non-reflective building materials to minimize glare and obtrusiveness.
- Focus all lighting on-site and direct outdoor lighting downward;
- Incorporate shielding in the design of exterior light fixtures to prevent glare;
- Include non-glare fixtures on all outdoor project lighting; and
- Submit plans detailing the location and specific types of project lighting fixtures to the Monterey County Planning Department for final review.

Chapter 3.5

Land Use

Introduction

This chapter provides a discussion of the land use issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of local, state, and federal policies and regulations related to land use; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

Table 3.5-1 provides a summary of the potential environmental impacts of the proposed Rancho Cañada Village Specific Plan project related to land use. As shown in Table 3.5-1, with the exception of policy consistency related to land use designation and zoning, the Proposed Project would not have any significant adverse impacts related to land use.

Table 3.5-1 Land Use Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Land Use Compatibility			
LU-1: Construction-Related Land Use Impacts	LTS	None Required	_
B. Plan/Policy Consistency			
LU-2: Conflicts with Land Use Plans, Policies, or Regulations	Potentially Significant	LU-1: Change Land Use Designations and Site Zoning	LTS
LU-3: Conflicts with Habitat Conservation Plans	NI	None Required	_
C. Division of an Established Community			
LU-4: Physically Divide a Community	LTS	None Required	_

LTS=Less than Significant, NI=No Impact

Environmental Setting

The Rancho Cañada Golf Club is located along Carmel Valley Road at the mouth of the Carmel Valley (refer to Figure 2-1). The CVMP is an area of relatively secluded valleys and hills in the unincorporated area of Monterey County immediately east of SR 1 with built-up areas at the mouth, in the Mid-Valley area, and in the Carmel Valley Village. The 81-plus acre project site (refer to Figure 2-3) is located on the west golf course of the Golf Club. Residential, school, recreational, and open space land uses surround the site.

The following sections describe the methodology used to assess the environmental setting for land use within the project area, and the existing conditions on lands surrounding the project site.

Methodology

Literature Reviewed

The following literature was reviewed for analysis of land use found in the proposed Rancho Cañada Village project area.

- Monterey County General Plan (General Plan)
- Greater Monterey Peninsula Area Plan (Area Plan)
- Carmel Valley Master Plan (CVMP)

- Rancho Cañada Village Specific Plan (Specific Plan)

Existing Conditions

Regional Setting

The project region is considered to be the 28,000-acre CVMP area. The area south of Rancho Cañada Golf Club is largely comprised of open space and preserved areas, although several small communities are interspersed throughout. The three population centers in the Valley are the "Lower Valley" at the west end of Carmel Valley Road near the intersection with SR 1, "Mid-Valley" in the vicinity of Robinson Canyon Road, and Carmel Valley Village.

Carmel Valley is primarily rural residential in nature, with notable scenic values resulting from natural landforms and the vegetative masses that are widely visible. Land use in Carmel Valley consists primary of rural residential development and small-scale agricultural pursuits; other land use includes some concentrated residential development; commercial development and visitor accommodation facilities; public and quasi-public facilities; and resource conservation and recreational facilities including four regional parks, three golf courses, and tennis facilities. Only about one-fourth of the approximately 28,000 acres had been developed by the date of publication of the CVMP in 1986.

Residential development is dispersed, but generally tends to cluster around areas where commercial services are available: (1) the lower valley near Highway 1, (2) mid-valley in the vicinity of Robinson Canyon Road, and (3) in the vicinity of Carmel Valley Village (Monterey County 1986). Monterey County households are characterized by significantly higher home values than the state of California average (U.S. Census Bureau 2000). Garland Ranch Regional Park, Jacks Peak Regional Park, Thomas Open Space[1], Palo Corona Regional Park (limited public use allowed at present) and Carmel Valley Community Park provide recreational and resource conservation land use.

Principal road access to Carmel Valley is via Carmel Valley Road (from Carmel and Monterey) and via Laureles Grade Road (from SR 68). Carmel Valley Road is the principal arterial route, intersecting SR 1 to the west. It is both four-lane and two-lane, depending on proximity to SR 1 and to commercial centers in the valley. Laureles Grade Road is a two-lane, steep, curved road that climbs the northern slopes from Carmel Valley to SR 68 north of the valley.

Project Setting

The 81-plus acre project site is located on the West Course of the Rancho Cañada Golf Club. The Rancho Cañada Golf Club was created in 1970 and currently operates two courses, the West Course and the East Course. The site is bounded

[1] Thomas Open Space is closed to the public except for those with a valid permit.

to the north by Carmel Valley Road and a Carmel Middle School, on the west by a low-density residential development, on the southwest by high-density residential development (5-20 units per acre), on the east by the remainder of the golf course, and on the south by the Carmel River and adjoining open space (refer to Figure 2-3). As shown in Figure 3.5-1, the County's General Plan designates the area as public/quasi-public open space. The Proposed Project comprises 281 residential units on approximately 42 acres and 39 acres of permanent open space.

The project site is a currently developed for recreational use (golf course) in an area that gently slopes from the north boundary of the site down to the north bank of the Carmel River. Residential development extends westward from the west side of the project and is separated from the project site by a strip of vacant land.

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of land use impacts of the Proposed Project.

Federal Policies and Regulations

There are no specific federal regulations that apply to the land use issues associated with this project.

State Policies and Regulations

California planning law requires each city and county in the state to adopt a general plan for its future development. This plan identifies the allowable uses of land within their boundaries and establishes policies for both the development and protection of resources. They form the foundation for zoning and establish regulatory standards for development and resource protection.

Local Policies and Regulations

Monterey County General Plan

The Monterey County General Plan (General Plan) was adopted by the Board of Supervisors in 1982 and is periodically amended. The General Plan provides a general direction for future growth throughout the unincorporated areas of the County. The General Plan's objective is to promote balanced growth throughout the County in a manner that protects the County's exquisite but fragile natural resources.

General Land Use

Policies:

26.1.1: The County in coordination with the cities, shall manage the type, location, timing, and intensity of growth in the unincorporated area.

26.1.5: The County shall designate future land uses in manner which will achieve compatibility with adjacent land uses.

26.1.6: Development which preserves and enhances the County's scenic qualities will be encouraged.

26.1.11 The County shall encourage clustering in all development projects, where appropriate.

Residential

Policies

27.3.2: The County shall encourage that open space be provided within and on the fringes of residential areas.

Open Space

Policies**:**

34.1.1 The County shall encourage the clustering of all types of development, where appropriate, in order to allow for a portion of each project site to be dedicated as permanent open space.

34.1.3. Wherever possible, open space lands provided as part of a development project should be integrated into an areawide open space network.

Holding Capacity and Zoning

Goal 36: to maintain consistency between the general plan and its implementing regulations.

Policies

36.0.3 Areas which have further division or additional density restrictions in place by zoning designation on the date of adoption of this general plan shall be executed in accordance with such restrictions and zoning designation as part of the implementation process.

36.0.4 Except in areas designated as medium- or high-density residential or in areas designated as commercial or industrial where residential use may be allowed, an applicant wishing to apply for a subdivision under this General Plan must use the following procedures to calculate the maximum density that can be considered under the Plan and thereby prepare an application consistent with or less than the maximum allowable density:

A. One factor in density determination shall be the land use designation. The maximum density allowable under the General Plan for a parcel shall be divided into the total number of acres found within the parcel. For example, a 100-acre parcel with a maximum

General Plan density of 1 unit per 2.5 acres would have a General Plan density of 40 sites.

B. The slope of the property shall be determined and the slope-density formula defined in this Plan applied. For example, a 100-acres parcel might consist of 50 percent of the land having a slope of over 30 percent and the other 50 percent below 19 percent. The maximum density allowable on that parcel as calculated according to slope would be 50 sites.

C. All of the policies of the Plan must be applied to the parcel. Any policies resulting in a decrease in density must be tabulated. This decrease in density would then be subtracted from the maximum density allowable under the slope formula.

D. The maximum density allowable according to the General Plan land use designation (Step A above) and the maximum density allowable according to the Plan policies (Steps B and C above) shall then be compared. Whichever of the two densities is the lesser shall be established as the maximum density allowable under this Plan.

E. The calculations of maximum density made by an applicant will be reviewed during public hearings prior to the approval of any permits or quota allocation pursuant to this Plan.

Greater Monterey Peninsula Area Plan

The General Plan designates eight separate non-coastal areas of the County for which "Area Plans" are required. The Greater Monterey Peninsula Area Plan (Area Plan) is one of these areas. The Area Plan includes the project site, but its land use designations, objectives, policies, and goals do not supersede those set forth in the CVMP, except with regard to subject matter not addressed in the CVMP. The Area Plan does not include subject matter relevant to the Proposed Project that is not already covered by the CVMP; as such consistency analysis with the CVMP is adequate in satisfying analysis of consistency with the Area Plan.

Carmel Valley Master Plan

The 1986 Carmel Valley Master Plan is a component of the 1982 General Plan. The major function of the CVMP is to guide the future development of the valley using goals and policies that reflect an understanding of the physical, cultural and environmental setting of the area. Key CVMP policies and regulations relevant to the Proposed Project are noted below. A land use consistency analysis is presented in Appendix C that includes all CVMP policies.

Open Space Conservation

1.1.3 (CV) Both small and large open space areas should be created with preference given to those projects which add open space that is contiguous to existing open space.

General Land Use

26.1.21 (CV) It is intended that the Carmel Valley remain rural residential in character.

26.1.22 (CV) Developed area should be evaluated in the light of resource constraints especially the water supply constraint addressed by policy 54.1.7 (CV) and the character of each area. No further development in such areas shall be considered until a need is demonstrated through public hearings.

26.1.23 (CV) Open space uses are to be located between the development areas in order to clearly define them and maintain a distinction between the more rural and more suburban areas of the valley.

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

26.1.26 (CV) 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.

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

26.1.29 (CV) Design and site control shall be required for all new development throughout the Valley, including proposals for existing lots of record, utilities, heavy commercial and visitor accommodations but excluding minor additions to existing development where those changes are not conspicuous from outside of the property. The design review process shall encourage and further the letter and spirit of the CVMP.

26.1.30 (CV) Publicly used buildings and areas should be encouraged to be oriented to views of the river.

26.1.31 (CV) Materials and colors used in construction shall be selected for compatibility with the structural system of the building and with the appearance of the building's natural and man-made surroundings.

26.1.32 (CV) Development should be located in a manner that minimizes disruption of views from existing homes. This applies to road cuts as well as structures.

26.1.33 (CV) Of the range of land uses allowed (either with or without special approval) in any zoning district applied to Carmel Valley, only those uses specifically designated by this Plan shall be considered consistent as required by law.

26.1.34 (CV) The maximum density allowable according to the slope/density formula and the maximum density allowable according to other plan policies should be compared. Whichever of the two densities is the lesser shall be established as the maximum density allowable under this plan.

Residential Land Use

27.1.5 (CV) In the low-density residential areas, maximum densities are as shown on the Land Use Plan. However, attainment of maximum density in these areas is dependent upon conformity of the Proposed Project to plan goals and policies.

27.3.4 (CV) All land division approvals shall be based on and require full standard subdivision standards regardless of the number of lots created. Exception may be granted under policy 39.2.7 (CV).

27.3.5 (CV) The Carmel Valley development limit shall consist of the existing 572 buildable lots of record, plus 738 additional lots which shall be subject to the quota and allocation system and the policies of this Plan governing deduction from the quota for additional units, caretakers, senior citizen, and low and moderate income units. This constitutes the 20-year buildout allowed by this Plan. The existing lots of record shall include the remaining 150 lots in the amended Carmel Valley Ranch Specific Plan.

27.3.6 (CV) All development proposals shall make provision for low or moderate income housing in accordance with the Inclusionary Housing Ordinance, except that all development shall build such units on- site. Low and moderate-income residential units shall be counted as part of the total new residential units and subtracted yearly from the quota and not the allocation.

27.3.9 (CV) Projects for low or moderate income family housing shall be exempt from any annual allocation provisions, but shall be subtracted from the 20-year buildout quota on a basis of one such unit reducing the remaining buildout by one unit.

Furthermore, because of their substantially lower impact on resources and infrastructure, such projects for senior citizens of low or moderate income (e.g. the proposal of the Monterey County Housing Authority) may have up to twice the number of units normally allowed on a site. Such increased density shall only be allowed where it is determined to be feasible and consistent with other plan policies. Such projects shall be subtracted from the 20-year buildout quota on a basis of two such units reducing the remaining buildout by one unit.

27.3.10 (CV) When an ownership is covered by two or more land use designations, the total allowable development should be permitted to be located on the most appropriate portion of the property.

Area Development-Visitor Accommodations

28.1.26 (CV) All further development of visitor accommodations in the area west of Via Mallorca and north of Carmel River shall be limited to a moderately-sized facility, not to exceed 175 units, at the Rancho Cañada Golf Club.

Area Development –Open Space

34.1.1.1(CV) Clustering of development should be permitted only where it will result in the preservation of visible open space and is in compliance with other applicable policies. Cluster development should be consistent with wastewater application rates of the Carmel Valley Wastewater Study. In general, this will result in clusters of five units or less on a minimum of five acres of land. The burden of proof shall be placed on the project sponsors to demonstrate that clustered development meets the objectives of the Plan.

34.1.1.2 (CV) Clustering of development is discouraged except where it would result in preservation of visible open space in critically sensitive areas or protect another natural resource. Clustering adjacent to vertical forms, spaces, will be considered in light of the visual sensitivity of the building site. The burden of proof is placed on project sponsors to demonstrate that proposed cluster development is compatible with policies of this Plan.

Transportation

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.

Impact Analysis

Criteria for Determining Significance

In accordance with CEQA, State CEQA Guidelines, Monterey County plans and policies, CVMP policies, and agency and professional standards, a project impact would be considered significant if the project 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.

C. Division of an Established Community

- Physically divide an established community.

Assessment Methodology

Assessments of potential land use impacts of the Proposed Project are based on the following methods:

- Review of the proposed Specific Plan preliminary project drawings and pattern book; and
- Review of the project for compliance with the County's General Plan, the CVMP, and Zoning Codes.

Impacts and Mitigation Measures

A. Land Use Compatibility

Impact LU-1: Construction-Related Land Use Impacts (Less than Significant)

Temporary land use impacts associated with construction activities would include site grading, excavation, construction staging, and building erection. These activities involve the movement of heavy construction equipment, truck traffic, grading activities, construction noise, and air emissions. The construction time would extend over an approximate 3 to 4-year period, depending on market conditions for custom residential units. Construction impacts specifically related to nuisance effects (i.e., air quality, noise, traffic, and aesthetics) are addressed in other sections of this Draft EIR. Since these construction-related impacts are addressed in other sections of this Draft EIR and can be mitigated to a less-than-significant level, this impact is considered to be a *less-than-significant* land use impact. No additional mitigation is required.

B. Plan/Policy Consistency

Impact LU-2: Conflicts with Land Use Plans, Policies, or Regulations (Less than Significant with Mitigation)

Please see Appendix C for an analysis of the consistency of the Specific Plan with regard to all CVMP land use policies. The CVMP includes numerous policies that address development issues such as land use, residential buildout, retaining the rural character of the region and providing open space, providing affordable housing, hydrology and water quality, traffic and water constraints, and protection of the Carmel River. These key issues are discussed below. The other sections of this EIR also discuss project development issues related to other subject areas covered by CVMP policies such as geology, soils, and seismicity, aesthetics, and public services and utilities.

Land Use - The proposed Rancho Cañada Village site is designated for public and quasi-public uses in the CVMP. CVMP Policy 28.1.26 allows for construction of up to 175 visitor-serving units on the Rancho Cañada Golf Club property. The County General Plan Land Use Map currently depicts the parcel as public/semi-public land. Because the Specific Plan calls for residential development, which is not consistent with the CVMP land use designation for the site, an amendment to the CVMP land use diagram and rezoning to Title 21 would be necessary through a General Plan Amendment prior to approval of the Specific Plan. As described elsewhere in this section and the remainder of the draft EIR, this inconsistency does not result in a residential buildout level above that envisioned by the CVMP, fundamental incompatibilities with adjacent land uses, or fundamental inconsistencies with the other policies of the CVMP, the Greater Monterey Peninsula Area Plan, or the existing General Plan. While the project does represent a change in land use from that currently envisioned for the site and more residential density at this particular location, the analysis in this document does not identify that a change in land use *per se* to that proposed by the project would not meet the overall goals of the CVMP. Thus, with the adoption of the appropriate land use designations and zoning, the Specific Plan is considered to have less than significant impacts related to land use.

Mitigation Measure LU-1: Change Land Use Designations and Site Zoning

The land use designation of the project site would need to be changed in the relevant plans to reflect the residential use and proposed densities along with the site zoning.

Residential Buildout - The Specific Plan would not increase the number of residential units allowed under the CVMP quota. The CVMP establishes a quota of 1,310 new residential units in the plan area. Since the quota was established in late 1986 through 2007, an estimate 797 new units have been approved, leaving a balance of 513 residential units (see Appendix E) in the quota. Assuming reservation of one unit for every existing pre-1987 vacant lot, an estimated 216.5 units would need to be reserved from the 513 unit total, which would leave an estimate 296.5 units for new subdivisions. If this project is approved, the 281 residential units in the Specific Plan would be deducted from the quota established in CVMP Policy 27.3.5 (CV), leaving an estimated 15.5 units for new subdivisions. Approval of the plan would thus not result in exceedance of the residential unit quota.

Rural Character and Open Space - The project would cluster housing at densities not typical of rural residential development, however, by clustering development, the project is able to provide 39 acres of dedicated open space, most of which is adjacent to the Carmel River. Approximately 31 acres of this open space would be a publicly accessible habitat preserve which would be more consistent with rural character than the existing golf course.

Affordable Housing - The CVMP also encourages the development of affordable housing to help meet the regional demand. Because of the high cost of housing in the Carmel Valley, affordable housing cannot be developed at low densities typical of rural residential development. By clustering development

away from the Carmel River and out of the line of site of Carmel Valley Road, the Specific Plan achieves a compromise between the CVMP policies of maintaining rural character and providing affordable housing by providing 140 units of workforce and affordable housing in addition to 39 acres of open space.

Hydrology and Water Quality - Project impacts related to flooding and water quality are presented in Chapter 3.2, *Hydrology and Water Quality*. The project would not increase flooding in upstream or downstream areas and the proposed residential area would be elevated out of the 100-year flood plain. Stormwater runoff controls are included in the project and mitigation has been identified to address both construction and operational water quality concerns related to runoff.

Traffic - Construction in the County is subject to the building moratorium adopted by the County Board of Supervisors in Resolution No. 02-024 on January 22, 2002. Resolution No. 02-024 states that it is the policy of the Board of Supervisors that residential and commercial subdivisions proposed in the CVMP Area be denied, pending the construction of specific highway improvements and the adoption of updated General Plan/Master Plan policies relating to Level of Service on Carmel Valley Road. Monterey County has developed the Carmel Valley Traffic Improvement Program (CVTIP), which is a program of traffic improvements to address cumulative traffic associated with buildout of the CVMP area. The CVTIP is based on collection of fees from new development to develop necessary traffic improvements. A Draft EIR was released by the county on the CVTIP in August 2007. The conclusion of the Draft EIR (Jones & Stokes 2007) is that the CVTIP would maintain levels of service at acceptable levels with the exception of Carmel Valley Village where no feasible traffic improvements have been identified that would be consistent with the CVMP and character of the Village. The Draft EIR identifies that the conditions necessary to lift the subdivision moratorium appear to be met. If the Board of Supervises determines to lift the moratorium based on the CVTIP and its EIR, then the moratorium would not apply to this project. As described in this Draft EIR, the traffic impacts of this project can be mitigated through direct project mitigation measures and through payment of the appropriate traffic impact fees for impacts to Carmel Valley Road and to regional highways.

Water Supply - The Monterey Peninsula Water Management District (MPWMD) allocates water to its various member agencies, which includes a portion of the County. Presently, the County does not have any water available, which limits new development, including development on existing vacant lots of record. As a result, until a long-term solution is established, no new development may occur unless an alternative means or entitlement is established for a specific project. In addition, County Ordinance 3310 limits subdivision activity since it requires an applicant to demonstrate a net reduction in the historic water use on a site if a parcel is approved for subdivision. The Proposed Project would provide its own supply of water through existing wells or new wells on-site, and is anticipated to result in an overall savings in water use consistent with Ordinance 3310 (See Chapter 3-10, *Public Services and Utilities*).

Carmel River - The project would restore approximately 20 acres of riparian habitat adjacent to the Carmel River that would enhance the function of the river as a riparian migration corridor. The project's potential impacts related to hydrology and water quality (see Section 3.2, *Hydrology and Water Quality*) and biological resources (See Section 3.3, *Biological Resources*) can be mitigated to a less than significant level.

Impact LU-3: Conflicts with Habitat Conservation Plans (No Impact)

The project site is not located within a habitat conservation plan or natural community conservation plan area. Therefore, there would not be a potential conflict with such conservation plans and there would be *no impact.* No mitigation is required.

C. Division of an Established Community

Impact LU-4: Physically Divide a Community (Less than Significant)

The Proposed Project would result in development of an existing golf course into a residential subdivision and creation of parks and a habitat preserve. The project is bounded on the north by a school and a church, on the east by a golf course, on the south by the Carmel River, and on the west by existing private and commercial residential uses. At present there is no direct access through the site. The project would include a public trail that, in the future, would make regional trail connections that would facilitate access. The project would not affect access to any of the surrounding land uses. Therefore, the project would not physically divide a community. This impact is considered to be *less than significant.* No mitigation is required.

Chapter 3.6

Hazards and Hazardous Materials

Introduction

This chapter presents the existing setting and potential impacts related to hazards and hazardous materials associated with the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. The *Setting* section below includes a definition of hazardous materials and waste, an overview of the most relevant hazardous materials regulations that are applicable to the project area, a description of general environmental conditions in the project area with respect to the presence of hazardous materials and wastes, and a general description of hazardous building materials likely to be present within the project area. Based on this information, impacts of the Proposed Project associated with hazardous materials are identified.

Impact Summary

Table 3.6-1 below provides a summary of the potential environmental impacts of the proposed Rancho Cañada Village Specific Plan project. As shown in Table 3.6-1, the Proposed Project would have some significant adverse impacts related to hazards and hazardous materials within the project area. However, with the implementation of the mitigation measures described within this administrative draft section, all of the impacts listed would be reduced to less-than-significant levels.

Table 3.6-1 Hazardous Materials Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Public Exposure			
HAZ-1: Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment	Potentially Significant	HAZ-1: Follow Cypress Fire Protection District and Other Guidelines for Storage and Handling of Hazardous Materials HAZ-2: Immediately Contain Spills, Excavate Spill-Contaminated Soil, and Disposal at an Approved Facility HAZ-3: Develop and Implement Plans to Reduce Exposure of People and the Environment to Hazardous Conditions During Construction Activities AIR-2 and AIR-3 [See Chapter 3.8] PSU-3 [See Chapter 3.10]	LTS
HAZ-2: Routine Transport, Use, or Disposal of Hazardous Materials	Potentially Significant	HAZ-4: Participate in the Local HHW Collection Program	LTS
HAZ-3: Hazardous Emissions or Hazardous Materials, Substances, or Waste Handling Within One-Quarter Mile of a School	Potentially Significant	HAZ-1 through HAZ-4	LTS
HAZ-4: Location of the Project on a Known Hazardous Material Site	LTS	None Required	–
B. Airport Vicinity			
HAZ-5: Potential Exposure of Hazardous Materials in the Vicinity of an Airport or Airstrip	LTS	None Required	–

LTS= Less-than-Significant

Environmental Setting

The following sections describe existing conditions in the project study area with regard to hazards and hazardous materials. Information in the following sections was derived from sources in the published hazardous materials literature and from the phase one site assessment reports prepared for the project. No additional fieldwork was performed for this EIR.

Methodology

Literature Reviewed

The following literature was reviewed for analysis of hazard and hazardous material conditions found in the proposed Rancho Cañada Village project area.

- ENGEO. 2004. Phase One Environmental Site Assessment, Rancho Cañada Golf Club 4860 Carmel Valley Road, Carmel Valley California. Submitted to Lombardo Land Group-1. Monterey, Ca. Project No. 6023.3.001.01. March 2.
- ENGEO. 2006. Phase One Environmental Site Assessment Update, Rancho Cañada Village, Carmel Valley California. Prepared for Rancho Cañada Community Partners, LLC. Monterey, Ca. Project No. 6023.3.004.01. July 31.

Definitions and Background

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 project area. The discussion of environmental conditions is based primarily on information from a Phase One Environmental Site Assessment (ESA) completed by the ENGEO Corporation in 2004 and a 2006 Phase One Environmental Site Assessment update. The environmental conditions documented in these reports provide a historical background and overview of the project area to assess general types of potential impacts and the likelihood of their occurrence.

Information on historical land use was obtained from a review of historical topographic maps (dating from 1913 to 1997) and historical aerial photographs

(dating from 1956 to 1981). A search for historical fire insurance maps (Sanborn maps) was conducted although none were located that pertained to the project site or adjacent properties. Information on the remaining potential sources of hazardous materials was obtained from a review of federal and state environmental databases and local agency records.

Overview of Environmental Conditions

Project Area

The Phase One ESA report and subsequent update were prepared for Assessor's Parcel Numbers (APNs) 015-162-016, 015-162-017, 015-162-025, 015-162-026, 015-162-037, 015-162-039,and 015-162-040. These reports are based on data gathered through record searches of the area, including environmental record databases, historical photographs, maps, and through field reconnaissance. None of the environmental databases searched produced records of chemical storage, spills or contamination on the APNs listed in the reports as being within the project area boundaries.

Historically, the project area has been undeveloped open space until at least 1976. Since 1976, the project site has supported a commercial golf course with one small restroom on the southwest corner of the site. It is conceivable that persistent agrichemicals may have been applied to the property. Chemical usage associated with golf course landscaping may have resulted in on-site contamination to soil and groundwater.

According to the Phase One ESA, sampling and testing of 40-near surface (3 to 9-inches below the surface) soil samples showed organochlorine pesticides at trace levels, which were below the EPA’s Region 9 Preliminary Remedial Goals (PRGs) for residential soils. Organophosphorus pesticides were not detected.

While the Hatton Parcel, a 3-acre parcel in the northwest corner of the project site, was not included in the soil sample testing of the report, it has historical remained undeveloped and presently remains mostly undeveloped as an entryway into the golf course. These past and present land uses are not associated with usage of chemicals that would have caused contamination on the site.

An irrigation water supply well and a groundwater monitoring well were observed on the property. One pad-mounted transformer was observed next to the irrigation water supply well. There was no obvious leaking or staining observed at or near the transformer.

Adjacent Areas

Adjacent parcels consist of a middle school and school bus maintenance facility, the remainder of the Rancho Cañada golf course with a clubhouse and

maintenance yard, the Carmel River, a church, and low- and high-residential development. As shown in Table 3.6-2, the environmental database search of these off-site parcels listed the following parcels within the appropriate American Society for Testing and Materials (ASTM) search distance of the subject property.

None of the facilities identified in the database search are expected to impact the project area given the database information, topographic gradient, regional direction of groundwater flow and the distance from the subject property.

Table 3.6-2 Database Summary on Adjacent Sites

Name	Address	Distance (miles)	Direction	Elevation	Violation/Contamination
Carmel Middle School	4380 Carmel Valley Road	0.125-0.025	WSW	Equal/Higher	No reported violations
Pupil Transportation Facility	Carmel Valley Road	0.25-0.5	ENE	Equal/Higher	No reported violations
Carmel Center Cleaners	11 Cross Road Mall	0.25-.05	WSW	Lower	No reported violations
Monterey Regional Waste Discharge System	4380 Carmel Valley Road	0.125-0.25	NNW	Equal/Higher	No reported violations
Rancho Cañada Maintenance	Carmel Valley Road	0.25-.05	NE	Equal/Higher	LUST- case closed
Tosco Facility #4598	544 Carmel Rancho Blvd.	0.5-1.0	WNW	Lower	Active LUST site. Low risk to project area.

Source: ENGEO 2004

The Carmel Middle School was reported in the Facility Index System (FINDS), which contains both facility information and references to other sources of information that contain more detail. Listing in FINDS is not indicative of chemical contamination. The school was also listed on the HAZNET database, which compiles data that is extracted from the copies of hazardous waste manifests, received each year by the Department of Toxic Substances Control (DTSC). The HAZNET database reported that the disposal of wastes from this facility has included asbestos containing waste and other organic solids. No violations or chemical contamination resulting from improper disposal or storage has been reported.

The Pupil Transportation Facility, located adjacent to the middle school has been listed on the Hazardous Substance Storage Container Database (HIST UST). This database contains a historical listing of underground storage tanks (USTs). Historically, the facility has had a total of 3 underground storage tanks that contained unleaded and diesel fuels. No major leaks requiring clean up and listing on the LUST database have been reported for this site. Furthermore, the

USTs were removed in 1997, and aboveground storage tanks currently serve the facility.

Carmel Center Cleaners is a dry-cleaning facility that has been listed on the Resource Conservation and Recovery Act (RCRA) Info database (RCRAInfo). RCRAInfo database tracks events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. The facility has also been listed on the Drycleaners database, which lists drycleaner related facilities that have Environmental Protection Agency (EPA) identification numbers. The Carmel Center Cleaners has been listed on these two databases because of the chemicals involved in dry cleaning. No violations or chemical contamination resulting from improper disposal or storage has been reported for this facility on any of the listed databases.

The Monterey Regional Waste Management District facility located on the middle school property has been listed on the Waste Discharge System (WDS) and HAZNET databases. The WDS database lists Regional Water Quality Control Board (RWQCB) sites that have been issued waste discharge requirements. The facility has been issued a waste discharge requirement, but has no reported violations or chemical contamination resulting from improper disposal or storage for either database.

The Rancho Cañada golf course maintenance facility has been identified in the databases as a HAZNET, Cortese, and a LUST site. The Cortese Hazardous Waste and Substance Site List (CORTESE) lists sites that are designated by the State Water Resources Control Board, Integrated Waste Board, and the Department of Toxic Substances Control. The Leaking Underground Storage Tank Information System (LUST) is a database that contains an inventory of reported leaking underground storage tank incidents. The underground storage tank (UST) was installed on the maintenance facility in 1976 and removed in 1993 and contained a mixture of regular and unleaded gasoline. Impact on the surrounding soil was considered negligible and the facility received closure status in 1993. Currently the facility includes two above-ground storage tanks, yard maintenance equipment, and numerous pesticide and fungicide chemicals. No further investigations or violations have been reported.

The Tosco facility has also been listed on the LUST database. The UST located on this facility reported a leak in 1998 in which testing confirmed groundwater contamination. The investigation and clean up of this LUST is ongoing, but due to its topographic gradient, regional direction of groundwater flow and distance from the subject property, it is not expected to impact the project site

Conclusions

The Phase One reports conclude that there are no recognized environmental conditions associated with the use of the property that would require general cleanup or demolition in preparation of a changed land use. Furthermore, no

documentation or physical evidence was discovered to indicate soil or groundwater contamination.

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of the hazardous materials issues of the Proposed Project.

Federal Policies and Regulations

The principal federal regulatory agency is the Environmental Protection Agency (EPA). The two key federal regulations pertaining to hazardous wastes are described below.

Resource Conservation and Recovery Act (RCRA)

The RCRA enables the EPA to administer a regulatory program that extends from the manufacturing of hazardous materials to their disposal, regulating the generation, transportation, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The CERCLA, also known as Superfund, was passed to facilitate the cleanup of the nation's toxic-waste sites. In 1986, the CERCLA was amended by the Superfund Amendment and Reauthorization Act (SARA) Title III (community right-to-know laws), 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.

Other applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the CFR.

State Policies and Regulations

In California, state regulations are equal to or more stringent than federal regulations. The state has been granted primary oversight responsibility by the EPA to administer and enforce hazardous waste management programs. State regulations have detailed planning and management requirements to ensure that

hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several key laws pertaining to hazardous wastes are discussed below.

Hazardous Materials Release Response Plans and Inventory Act

This act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as raw or unused materials that are part of a process or manufacturing step and not considered hazardous wastes. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous wastes.

Hazardous Waste Control Act (HWCA)

The HWCA created the State Hazardous Waste Management Program, which is similar to, but more stringent than, the federal RCRA program. The HWCA is implemented by regulations contained in Title 26 of the CCR, which describes requirements for the proper management of hazardous wastes, including criteria for:

- identification and classification;
- generation and transportation;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities and staff training; and
- closure of facilities and liability requirements.

These regulations list more than 800 potentially hazardous materials and establish criteria for identifying, packaging, and disposing of such wastes. Under the HWCA and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances Control.

Uniform Codes (i.e., Fire, Building, etc.)

The Uniform Fire Code (UFC) regulates the site's storage and use of hazardous materials at commercial and industrial facilities. The UFC states the quantity of materials that can be stored and when additional protective measures are required

to mitigate a hazard. The Uniform Building Code (UBC) regulates how protective measures within a structure will be built and/or implemented.

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Quick response to incidents involving hazardous materials or hazardous waste is a key part of the plan, which is administered by the California Office of Emergency Services (OES). The California OES coordinates the responses of other agencies, including the EPA, the California Highway Patrol, Regional Water Quality Control Boards, air quality management districts, and county disaster response offices.

California Occupational Safety and Health Administration Standards

Worker exposure to contaminated soils, vapors that could be inhaled, or groundwater containing hazardous constituents would be subject to monitoring and personal safety equipment requirements established in Title 8 of the California Occupational Safety and Health Administration (Cal-OSHA) regulations. The primary intent of the Title 8 requirements is to protect workers, but compliance with some of these regulations would also reduce potential hazards to non-construction workers and project area occupants because required controls related to site monitoring, reporting, and other activities would be in place.

Other Laws and Regulations

Other laws pertaining to hazardous materials include the Safe Drinking Water and Toxic Enforcement Act (Proposition 65) and the California Government Code, Section 2.65962.5, which require the Office of Permit Assistance to compile a list of potentially contaminated sites throughout the state.

Local Policies and Regulations

Monterey County General Plan

The Monterey County General Plan (General Plan) was adopted by the Board of Supervisors in 1982 and is periodically amended. The General Plan provides a general direction for future growth throughout the unincorporated areas of the County. The General Plan's objective is to promote balanced growth throughout the County in a manner that protects the County's exquisite but fragile natural

resources. The following goals and objectives of the General Plan apply to the Proposed Project:

Miscellaneous Hazards and Emergency Preparedness
Goal 18: to minimize risks from chemical usage

Objective 18.1: Reduce the risk from hazardous chemicals to an acceptable level by regulating the storage of hazardous chemicals.

Emergency Response Planning

The County has adopted a comprehensive plan dealing with emergency response, including response to emergency earthquake, major fire, and flooding situations. The current Monterey County Emergency Plan is reviewed and updated yearly.

Impact Analysis

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 under the following conditions:

A. Public Exposure

- Create a significant hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Location of the project on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 that would create a significant hazard to the public or the environment as a result.

B. Airport Vicinity

- For a project located on a site which is included within an airport land use plan, within two miles of a public airport or public use airport, or private airstrip would the project result in a safety hazard for people residing or working in the project area.

Impacts and Mitigation Measures

A. Public Exposure

Impact HAZ-1: Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment (Less than Significant with Mitigation)

Although construction of the proposed site requires excavation and movement of large quantities of soils, the Phase One Environmental Site Assessment and subsequent update performed on the project site by ENGEO (2004, 2006) did not indicate hazardous materials conditions on the site. While the original report and the update did not include the testing of soil samples from parcels on the northwest corner of the project area, the report update indicated that there are no Recognized Environmental Conditions on the Property that would create a hazard to the public and environment (ENGEO 2006).

Construction of the Proposed Project could expose construction workers, the public or the environment to hazardous materials through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used and disposed of at the project site and transported to and from the site during construction. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard.

In addition, if there are underground utility lines located underground on the project site, this could present a potential hazard to construction workers during excavation and construction. This impact is potentially *significant*. Implementation of the Mitigation Measures HAZ-1 through HAZ-3, described below, would reduce the impact to a *less-than-significant* level. Mitigation Measures AIR-2 and AIR-3, discussed in Chapter 3.8, *Air Quality*, requiring MPUAPCD-recommended construction emission control measures, and Mitigation Measure PSU-3, described in Chapter 3.10, *Public Services Utilities, and Recreation*, outlining procedures to avoid unintentional utility service disruptions during construction, would also contribute to the reduction of Impact HAZ-1.

Mitigation Measure HAZ-1: Follow the Cypress Fire Protection District and Other Guidelines for Storage and Handling of Hazardous Materials

The County shall require that contractors transport, store, and handle hazardous materials required for construction in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the Cypress Fire Protection District (CFPD).

Mitigation Measure HAZ-2: Immediately Contain Spills, Excavate Spill-Contaminated Soil, and Disposal at an Approved Facility

In the event of a spill of hazardous materials in an amount reportable to the CFPD (as established by fire department guidelines), the contractor shall immediately control the source of the leak and contain the spill. If required by the CFPD or other regulatory agencies, contaminated soils will be excavated and disposed of offsite at a facility approved to accept such soils.

Mitigation Measure HAZ-3: Develop and Implement Plans to Reduce Exposure of People and the Environment to Hazardous Conditions During Construction Activities

The County shall require the applicant to develop plans to prevent the pollution of surface water and groundwater and to promote the health and safety of workers and other people in the project vicinity. These programs shall include an operations and maintenance plan, a site-specific safety plan, and a fire prevention plan, in addition to the Storm Water Pollution Prevention Plan (SWPPP) required for hydrology impacts. The programs are required by law and shall require approval by several responsible agencies. Required approvals are as follows: the SWPPP shall be approved by the RWQCB; the site-specific safety plan and the operations and maintenance plan shall be approved by Cal-OSHA; and the fire safety plan shall be approved by the Cypress Fire Protection District.

The County shall also require the applicant to develop and implement a hazardous materials management plan that addresses public health and safety issues by providing safety measures, including release prevention measures; employee training, notification, and evacuation procedures; and adequate emergency response protocols and cleanup procedures.

Finally, the County shall require the applicant and its designated contractors to comply with Cal-OSHA, as well as federal standards, for the storage and handling of fuels, flammable materials, and common construction-related hazardous materials and for fire prevention. Cal-OSHA requirements can be found in the California Labor Code, Division 5, Chapter 2.5. Federal standards can be found in Occupational Safety and Health Administration Regulations, Standards—29 CFR.

Impact HAZ-2: Routine Transport, Use, or Disposal of Hazardous Materials (Less than Significant with Mitigation)

Upon build-out, the Proposed Project would include residential and open-space land uses. Residential land uses have the potential to create a hazard to the environment through the routine transport, use, or disposal of hazardous materials, in the form of household hazardous wastes.

Normal landscaping operation techniques for the 2.9-acre active park and landscape areas may involve pesticides, fertilizers, and fungicides. However, the existing land use of the project area as a golf course involves a much higher level

of landscape management. The creation of the proposed development would reduce the intensity and amount of area that would be actively landscaped. Thus, the Proposed Project would reduce the amount of landscape chemicals applied to the area compared to the existing baseline conditions. Impacts resulting from landscaping are considered to be less-than-significant.

Impacts regarding stormwater runoff are discussed in Chapter 3.2, *Hydrology and Water Quality*.

Under the Proposed Project, potentially significant impacts resulting from the routine, transport, use or disposal of hazardous materials could be associated with household hazardous wastes. However, the implementation of Mitigation Measure HAZ-4 would reduce the impact to a *less-than-significant* level.

Mitigation Measure HAZ-4: Participate in the Local HHW Collection Program

The County will require residents living within the Rancho Cañada Village to participate in the Household Hazardous Waste Collection Program run by the Monterey Regional Waste Management District, to ensure that household hazardous wastes are disposed of appropriately. Details about the program can be found on the District's website, located at: www.mrwmd.org

Impact HAZ-3: Hazardous Emissions or Hazardous Materials, Substances, or Waste Handling Within One-Quarter Mile of a School (Less than Significant with Mitigation)

The Carmel Middle School is located immediately adjacent to the Proposed Project site. Hazardous emissions, use, and transport associated with the construction and operation of the Proposed Project could have a potentially *significant* impact on the nearby school. However implementation of Mitigation Measures HAZ-1 through HAZ-5, described above, would reduce this potential impact to a *less-than-significant* level. No further mitigation would be necessary.

Impact HAZ-4: Location of the Project on a Known Hazardous Material Site (Less than Significant)

According to the Phase One Environmental Site Assessment and Update prepared for the project, APNs 015-162-016, 015-162-017, 015-162-025, 015-162-026, 015-162-037, 015-162-039, and 015-162-040 have not been listed on any publicly-available or practically-reviewable standard local, state or federal environmental records or databases. Therefore, the proposed development would not be located on a known hazardous materials site that would pose a hazard to the public or environment. Several nearby locations have been included on a list of hazardous materials sites, but are not expected to impact the Proposed Project parcels. Therefore, this impact is considered to be *less than significant*. No mitigation is necessary.

B. Airstrip Vicinity

Impact HAZ-5: Potential Exposure of Hazardous Materials in the Vicinity of an Airport or Airstrip (Less than Significant)

The Proposed Project is not located within two miles of any airport or private airstrip. The closest airport is the Monterey Peninsula Airport, which is located approximately 4 miles north of the project area. This impact is considered to be *less than significant*. No mitigation is necessary.

Chapter 3.7

Transportation and Traffic

Introduction

This chapter provides a discussion of the transportation and traffic issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of local and state policies and regulations related to transportation and traffic; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Cumulative impacts are discussed separately in Chapter 4.

Impact Summary

The transportation and traffic impacts resulting from the Proposed Project are summarized in Table 3.7-1. As shown in Table 3.7-1, the Proposed Project would have certain significant impacts related to transportation and circulation within the project area. However, with the implementation of the mitigation measures described in this chapter, all of the potentially significant impacts listed would be reduced to less-than-significant levels.

Table 3.7-1 Transportation and Traffic Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Signalized Intersections			
TR-1: LOS Decrease at Signalized Intersections	LTS	None Required	–
B. Unsignalized Intersections			
TR-2: LOS Decrease at Unsignalized Intersections	Potentially Significant	TR-1: Contribute Fair-Share to Signalization (or All-Way Stop) of Laureles Grade and Carmel Valley	LTS

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
		Road	
C. Roadway Segments			
TR-3: Peak Hour LOS Decrease for Two-Lane and Multi-Lane Portions of Carmel Valley Road	LTS	None Required	–
TR-4: Peak Hour LOS Decrease for Portions of Highway 1 and 68	Potentially Significant	TR-2: Contribute Fair-Share Regional Impact Fee for Improvements to Highway 1 and Highway 68	LTS
D. Access, Circulation and Safety			
TR-5: Adequate Sight Distance	LTS	None Required	–
TR-6: Adequate Project Access	LTS	None Required	–
E. Transit and Bicycle Travel			
TR-7: Changes to Traffic and Bicycle Travel	LTS	None Required	–
F. Construction Traffic			
TR-8: Construction Traffic	LTS	None Required	–

LTS=Less than Significant

Study Approach

This study was conducted for the purpose of identifying the potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by Monterey County and the Transportation Agency for Monterey County (TAMC). The *Guide for the Preparation of Traffic Impact Studies* published by Monterey County was used to prepare the traffic study report. TAMC administers the Congestion Management Program (CMP) for Monterey County.

Data Sources

The following sources were reviewed for analysis of transportation and traffic found in the proposed Rancho Cañada Village Specific Plan project area.

- *Rancho Cañada Residential Development Traffic Study*. Hexagon Transportation Consultants. July 25, 2007.
- *Carmel Valley Master Plan Traffic Study*. DKS Associates 2007.

- *Carmel Valley Traffic Improvement Program Draft Subsequent Environmental Impact Report (SEIR).* Jones & Stokes Associates, 2007.
- *Carmel Valley Road Traffic Monitoring Report.* Monterey County *2005*.
- *Guide for the Preparation of Traffic Impact Studies***.** Monterey County, 2003.
- *Highway Capacity Manual* (HCM) *2000 Edition.* Transportation Research Board. Special Report 209, 2000.
- *Manual on Uniform Traffic Control Devices (MUTCD) 2003.* California Department of Transportation (Caltrans), 2003.
- *Guide for the Preparation of Traffic Impact Studies.* Caltrans, 2002.
- *Carmel Valley Master Plan*. Monterey County 1986.
- Monterey County General Plan Update Draft Program Environmental Impact Report. Monterey County 2006.

The Traffic Study prepared by Hexagon Transportation Consultants (included in Appendix D) underwent two separate peer review by DKS Associates and upon confirmation of methods, results, and conclusions, a summary has been prepared for this EIR chapter. The traffic study conducted for the Carmel Valley Master Plan (DKS 2007) and the EIR prepared pursuant to the CVMP (Jones & Stokes 2007) are incorporated by reference and are available on the County website.

Intersection Analysis Methodology

Traffic conditions at the study intersections were evaluated using Level of Service (LOS) calculations. LOS is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. Levels of service for study intersections were calculated using TRAFFIX, version 7.8, based on the methodology for signalized and unsignalized intersections described in the 2000 HCM.

LOS for the signalized intersections is based on average control delay per vehicle, where control delay includes all of the following: initial deceleration delay, running queue delay, stopped delay, and start-up acceleration delay. For the unsignalized intersections, which operate under two-way stop control, the reported average delay and associated level of service represent the worst conditions for any of the controlled movements. The unsignalized intersections were also evaluated using the Caltrans Peak-Hour Volume Warrant in order to determine if there would be justification for installing a traffic signal.

The correlation between average delay and level of service for signalized and unsignalized intersections is shown below in Table 3.7-2 and Table 3.7-3, respectively.

Table 3.7-2 Signalized Intersection LOS Definitions Based on Delay

Level of Service	Description	Average Stopped Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	10.0 or less
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths..	Greater than 80.0

Source: Transportation Research Board, Highway Capacity Manual 2000.

Table 3.7-3 Unsignalized Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Stopped Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression.	10.0 or less
B	Operations with low delay occurring with good progression	10.1 to 15.0
C	Operations with average delays resulting from fair progression.	15.1 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression or high V/C ratios.	25.1 to 35.0
E	Operations with high delay values indicating poor progression and high V/C ratios. This is considered to be the limit of acceptable delay.	35.1 to 50.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation and poor progression.	Greater than 50.0

Source: Transportation Research Board, Highway Capacity Manual 2000.

Segment Analysis Methodology

In accordance with the Carmel Valley Master Plan (CVMP) Policy 39.3.2.1, traffic conditions on Carmel Valley Road have for many years been evaluated on the basis of average daily traffic (ADT) volumes using a volume-to-capacity methodology specific to Carmel Valley Road. This study includes an evaluation of Carmel Valley Road using this CVMP methodology. The study also includes an evaluation of Carmel Valley Road using the industry-standard HCM methodology for multi-lane and two-lane highways (some segments of Carmel Valley Road are two lanes and some are four lanes). As discussed below, while ADT changes are disclosed, ADT levels alone are not used to determine significance. The project impact on level of service is used for significance determination.

The HCM level of service methodology for two-lane highways is based on a parameter called “percent-time-spent-following”, designated PTSF, which is correlated to level of service as shown in Table 3.7-4.

Table 3.7-4 Two-Lane Highway Segment Level of Service Based on PTSF

Level of Service	Percent Time Spent-Following (PTSF)
A	<= 40
B	>40 to 55
C	> 55 to 70
D	> 70 to 85
E	>85
F	see note 2

Source: Transportation Research Board, *Highway Capacity Manual 2000*, Exhibit 20-4.

Notes:

1. Applicable to Class II facility.

2. LOS F applies whenever the flow rate exceeds the segment capacity.

The HCM LOS methodology for multi-lane highways is based on vehicle density—a measure of the length of roadway that is occupied by vehicles—which is correlated to level of service as shown in Table 3.7-5.

Table 3.7-5 Multi-Lane Highway Segment Level of Service Based on Vehicle Density

Level of Service	Density (passenger cars/mile/lane)
A	<= 11
B	> 11 to 18
C	> 18 to 26
D	> 26 to 35
E	> 35 to 41
F	> 41

Source: Transportation Research Board, *Highway Capacity Manual 2000*, Exhibit 21-2.

Note: Applicable to facility with free-flow speed of 55 mph.

The functional classification for Carmel Valley Road is a Class I facility. However, page 12-13 of the 2000 Highway Capacity Manual states that "the primary determinant of a facility's classification in an *operational* analysis is the motorist's expectations, which might not agree with the functional classification." Because the two-lane portion of Carmel Valley Road (1) serves a relatively high number of short trips or the beginning or ending portions of longer trips, (2) has several segments with speed limits below 45 mph, and (3) has a relatively high number of vehicle access points, it is not a roadway on which motorists expect to travel at high speeds. For the purpose of the

operational analysis, then, the two-lane portion of Carmel Valley Road (from east of Holman Road to Rancho San Carlos Road) was considered a Class II facility.

Environmental Setting

This section summarizes the environmental setting relative to transportation and traffic in the study area.

Study Area

The traffic analysis is based on an evaluation of peak hour levels of service for signalized intersections and unsignalized intersections on Carmel Valley Road, at the nearest intersections on Highway 1, and on the intersection of Highway 68 and Laureles Grade. The traffic analysis is also based on an evaluation of road segment levels of service on Carmel Valley Road and the project's contribution to roadway segment operations on Highway 1 and Highway 68.

The study intersections and roadway segments are identified below.

Study Intersections

- Highway 1 and Carmel Valley Road
- Highway 1 and Rio Road
- Carmel Valley Road and Carmel Rancho Boulevard
- Rio Road and Crossroads Driveway
- Rio Road and Carmel Center Place
- Carmel Rancho Boulevard and Rio Road (unsignalized)
- Carmel Valley Road and Rio Road (unsignalized)
- Carmel Valley Road and Laureles Grade (unsignalized)
- Laureles Grade and Highway 68

Carmel Valley Road Study Segments

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

Other Roadway Segments

Project contributions to roadway segment operations were also considered at two locations outside of Carmel Valley

- Highway 1 near Carmel
- Highway 68 from Monterey to Salinas

Traffic Conditions and Scenarios

Traffic conditions were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day. Carmel Valley Road was analyzed based on peak-hour and average daily traffic.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from recent traffic counts.

Scenario 2: *Background Conditions.* Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments in the project area. The added traffic from approved but not yet completed developments was provided by the Monterey County Public Works Department.

Scenario 3: *Project Conditions.* Future traffic volumes with the project (hereafter called *project traffic volumes*) were estimated by adding to existing traffic volumes the additional traffic generated by the project. This scenario was evaluated with project access via Carmel Valley Road only and via both Carmel Valley Road and Rio Road. Both access cases assumed project-only access, and assumed no through traffic.

Scenario 4: *Cumulative Conditions.* Cumulative conditions are discussed in Chapter 4.

Existing Conditions

This chapter describes the existing conditions on the transportation facilities in the vicinity of the site.

Existing Roadway Network

Regional Access

Regional access to the project site is provided via State Highway 1 and State Highway 68. These facilities are described below.

Highway 1 (State Route 1)

Highway 1 is a major north-south roadway that connects the Monterey Peninsula with San Luis Obispo County to the south, and with Santa Cruz County and the San Francisco Bay Area to the north. Highway 1 is a four-lane freeway north of Carpenter Street, a four- to five-lane (the five-lane section has a two-way center left-turn lane) roadway between Carpenter Street and Ocean Avenue, a three-lane roadway (two lanes northbound and one lane southbound) between Ocean Avenue and Carmel Valley Road, and a two-lane roadway south of Carmel Valley Road. Highway 1 is part of the Monterey County CMP highway network.

State Highway 68

Highway 68 is a major east-west link for travel between the Monterey Peninsula and the Salinas area. It also provides access between Pacific Grove and Highway 1, where it is known as Holman Highway. Between Highway 1 and the Toro Park area, it is a two-lane highway. It is a four-lane highway the remaining distance to the City of Salinas. State Highway 68 is part of the Monterey County CMP highway network.

Local Access

Local access to the site is provided by Carmel Valley Road, Laureles Grade, Rio Road, and Carmel Rancho Boulevard. These roadways are described below.

Carmel Valley Road

Carmel Valley Road is an east-west roadway that begins at Highway 1 and continues to Greenfield. Access to the site is provided via the unsignalized intersection at Rio Road. Carmel Valley Road is four lanes wide between Highway 1 and Rancho San Carlos Road and two lanes wide east of Rancho San Carlos Road. Carmel Valley Road is classified as a major arterial.

Laureles Grade

Laureles Grade is a two-lane, north-south roadway that connects Carmel Valley Road with Highway 68. It is classified as a major arterial.

Rio Road

Rio Road consists of two discontinuous segments of roadway. The eastern part consists of a two-lane north-south segment that connects to Carmel Valley Road and would provide one of the two points of access to the site. This portion of Rio Road currently provides access to the golf course and to a church. The western part consists of an east-west street two lanes wide between Junipero Street and Highway 1 and four lanes wide between Highway 1 and Val Verde Drive. The western section would provide the other potential point of access to the site.

Carmel Rancho Boulevard

Carmel Rancho Boulevard is a four-lane, north-south roadway that extends from Carmel Valley Road to Rio Road. It provides access to commercial developments along its frontage and also serves through traffic between Carmel Valley Road and Highway 1 south of Rio Road.

Existing Bicycle, Pedestrian and Transit Facilities

Bicycle, pedestrian and transit facilities are available in the vicinity of the project site. Carmel Valley Road is a Class II bikeway (striped bike lanes on the street) between Rancho San Carlos Road and Carmel Rancho Boulevard. Bike lanes are present in the eastbound and westbound lanes of traffic in the vicinity of the project site at Rio Road and Carmel Valley Road. A pedestrian trail is provided along the Carmel River directly adjacent to the project site. Monterey-Salinas Transit (MST) provides bus service along Carmel Valley Road in front of the project site. The 24 line provides service between Carmel Valley Village and the Monterey Transit Plaza with 60-minute headways during weekday peak hours. Lines 4, 5, 24, and 36 provide service in the shopping area at the mouth-of-the-valley and travel in the vicinity of the project study area. A bus stop is located in the project vicinity, on Carmel Valley Road just east of the Rio Road/Carmel Valley Road intersection in the eastbound direction.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by field reconnaissance. The existing intersection lane configurations are shown on Figure 3 in Appendix D.

Existing Traffic Volumes

Manual turning-movement counts of vehicular traffic were conducted at all study intersections during the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. The intersection of Carmel Valley Road and Rio Road was counted in January 2007, while intersections of Rio Road/Crossroads Driveway, Rio Road/Carmel Center Place, and Carmel Valley Road/Laureles Grade were counted in 2005. The intersection of Carmel Rancho Boulevard and Rio Road and the intersection of Laureles Grade and Highway 68 were counted in 2004;

the other three study intersections were counted in 2003. Existing average daily traffic volumes for Carmel Valley Road were obtained from the *Carmel Valley Road Traffic Annual Monitoring Report, 2007*(Monterey County Board of Supervisors 2007).

The existing peak-hour intersection volumes are shown on Figure 4 in Appendix D. The traffic count data are included in Appendix D.

Existing Intersection Levels of Service

The results of the level of service analysis under existing conditions are summarized below in Table 3.7-6. The results show that the intersection of Laureles Grade and Carmel Valley Road currently operates at an unacceptable LOS F.

Table 3.7-6 Existing Intersection Levels of Service

		Existing		Background	
Intersection	Peak Hour	Avg. Delay	LOS	Avg. Delay	LOS
Hwy 1 & Carmel Valley Rd	AM	16.5	B	17.6	B
	PM	20.6	C	24.5	C
Carmel Rancho Blvd & Carmel Valley Rd	AM	17.5	B	19.2	B
	PM	22.0	C	29.8	C
Hwy 1 & Rio Rd	AM	28.7	C	29.2	C
	PM	30.2	C	30.9	C
Crossroads Dwy & Rio Rd	AM	9.9	A	9.4	A
	PM	11.2	B	10.7	B
Carmel Center Pl & Rio Rd	AM	6.2	A	5.9	A
	PM	8.7	A	8.2	A
Carmel Rancho Blvd & Rio Rd	AM	3.5	A	2.1	A
(unsignalized)	PM	7.9	B	4.3	A
Rio Rd & Carmel Valley Rd	AM	16.0	C	17.5	C
(unsignalized)	PM	23.2	C	35.1	E
Laureles Grade & Carmel Valley Rd	AM	46.3	E	(1)	F
(unsignalized)	PM	(1)	F	(1)	F
Laureles Grade & Hwy 68	AM	15.9	B	16.9	B
	PM	24.9	C	32.7	C

The six signalized study intersections currently operate at an acceptable LOS C or better during the peak hours, and the other unsignalized intersections currently operate at an acceptable LOS C or better.

The intersection level of service calculations are included in Appendix D.

Existing Signal Warrant Analysis

Peak hour signal warrant checks (Manual on Uniform Traffic Control Devices 2003, Part 4, Warrant 3) were performed for the three currently unsignalized intersections to determine whether signalization would be justified on the basis of existing peak-hour volumes. The analysis showed that the peak-hour volume

warrant is satisfied under existing conditions for the Laureles Grade and Carmel Valley Road intersection, but not for either of the other two unsignalized study intersections. The signal warrant calculation sheets are included in Appendix D.

Existing Conditions on Carmel Valley Road

ADT Monitoring

Existing ADT volumes for the ten segments of Carmel Valley Road are shown in Table 3.7-7. The result shows that none of the 10 segments have exceeded its thresholds based on the 2005 monitoring report. Monterey County has prepared improvement plans for portions of Carmel Valley Road. Some of the improvements have been built. Based on the recently completed *Carmel Valley Master Plan Traffic Study* (DKS 2007), additional improvements have been identified, which County staff are currently evaluating.

Table 3.7-7 Existing ADT on Carmel Valley Road

Segment	24-HR Threshold Volume	ADT 2007	Threshold Exceeded
1	8,487	3,431	NO
2	6,835	4,024	NO
3	N/A	8,628	NO
4	11,600	10,816	NO
5	12,752	11,844*	NO
6	15,499	14,078	NO
7	16,340	15,767	NO
8	48,487	20,166	NO
9	51,401	29,800	NO
10	27,839	23,837	NO

Source: Monterey County Board of Supervisors, 2007

Segment Level of Service

Existing peak-hour levels of service for the two-lane segments and multi-lane segments of Carmel Valley Road are shown in Table 3.7-8 and Table 3.7-9, respectively.

Table 3.7-8 Existing Peak-Hour Levels of Service on Two-Lane Segments of Carmel Valley Road

Carmel Valley Rd			LOS	AM Peak Hour			PM Peak Hour		
Segment	From	To	Std.	2-way Volume	PTSF [a]	LOS	2-way Volume	PTSF [a]	LOS
1	Holman Rd	East	C	373	32.5%	A	430	38.0%	A
2	Esquiline Rd	Holman Rd	C	390	32.4%	A	473	39.5%	A
3	Ford Rd	Esquiline Rd	C	774	55.8%	C	790	54.6%	B
4[b]	Laureles Grade	Ford Rd	D	1114	68.0%	C	1112	66.6%	C
5[b]	Robinson Cyn Rd	Laureles Grade	D	1074	70.0%	D	1158	68.8%	C
6[b]	Schulte Rd	Robinson Cyn Rd	D	1445	76.4%	D	1430	74.9%	D
7[b]	Rancho San Carlos Rd	Schulte Rd	D	1629	83.0%	D	1556	76.8%	D

Notes:

[a] Percent time-spent-following

[b] LOS Standard is based on the 1986 operating conditions

Source: DKS Associates, Carmel Valley Master Plan Traffic Study, 2007.

The results show that segments 5, 6, and 7 currently operate at LOS D. The other seven segments operate at LOS C or better. The analysis is based on the following assumptions: for the two-lane highway segments, Carmel Valley Road is a Class II facility, and for the multi-lane highway segments, the free-flow speed is 55 mph. These assumptions also apply to the project and cumulative conditions scenarios.

Existing Conditions on Regional Highways

Based on the conditions described in the Monterey County General Plan Draft program EIR (Monterey County 2006), the following segments of Highway 1 near Carmel and Highway 68 between Monterey and Salinas had deficient operations less than LOS D during the PM Peak Hour in 2000:

- Highway 1 between Carmel Valley Road and Ocean Avenue (LOS F)
- Highway 68 west of Laureles Grade between Oxton Road and Olmstead Road (LOS F), between Highway 218 and Ragsdale Road (LOS F), and Highway 68 between Ragsdale Road and Bit Road (LOS E)
- Highway 68 east of Laureles Grade between Laureles Grade and south of Portola Road/north of Terero Drive (LOS F)

Table 3.7-9 Existing Peak-Hour Levels of Service on Multi-Lane Segments of Carmel Valley Road

	Carmel Valley Rd				AM Peak Hour				PM Peak Hour			
Segment	From	To	Direction	LOS Standard	Volume (vph)	Flow Rate (pcphpl)[a]	Density (pc/mi/ln)	LOS	Volume (vph)	Flow Rate (pcphpl)[a]	Density (pc/mi/ln)	LOS
8	Rancho San Carlos Rd	Rio Rd	EB	C	769	470	7.53	A	1034	550	10.00	A
			WB	C	937	586	10.65	A	874	475	8.64	A
9	Carmel Rancho Blvd	Rio Rd	EB	C	1028	579	10.53	A	1272	650	11.82	B
			WB	C	1273	757	13.76	B	1098	646	11.75	B
10	Carmel Rancho Blvd	Hwy 1	EB	C	1106	621	11.29	B	1030	575	10.45	A
			WB	C	904	601	10.93	A	1089	662	12.01	B

[a] pcphpl = passenger car per hour per lane

Source: DKS Associates, Carmel Valley Master Plan Traffic Study, 2007.

Regulatory Setting

This section discusses the local and state policies and regulations that are relevant to the analysis of transportation and traffic impacts of the proposed project.

State Policies and Regulations

Caltrans guides and regulations found in the *Guide for the Preparation of Traffic Impact Studies* were adhered to in the preparation of this Traffic Study.

In accordance with CEQA Guidelines, a significant traffic and circulation impact will occur if a project will result in:

- An increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system;
- Exceeding, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- A change in traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Local Policies and Regulations

Monterey County

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. As described below, the LOS standards for Carmel Valley Road have been established in the CVMP and differ from the County road standard.

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):

- East of Holman Road (Segment 1) - Operated at LOS C or better in 1986 (standard of LOS C)
- 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 Rancho 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).

Impact Analysis

Criteria for Determining Significance

In accordance with CEQA, NEPA, 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 under the following conditions:

A. Standards of Significance for Signalized Intersections

If, for either peak hour:

- The level of service at the intersection degrades from an acceptable LOS C or better under existing conditions to an unacceptable LOS D or worse under project conditions, or
- The level of service at the intersection is an unacceptable LOS D or E under existing conditions and the addition of project trips causes the critical-movement V/C ratio to increase by .01 or more, or
- The level of service at the intersection is an unacceptable LOS F under existing conditions and the project adds one or more trips to any critical movement.

B. Standards of Significance for Unsignalized Intersections

If for either peak hour:

- The level of service for any movement at the intersection is an unacceptable LOS F under project conditions, or
- Any traffic signal warrant is satisfied.

C. Standards of Significance for Roadway Segments

- Exceed, either individually or cumulatively, the LOS standard established by the County for designated roads or highways. This criteria is applied to Carmel Valley Road as follows:
  - East of Holman Road to Ford Road (Segments 1, 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.
- For Highway 1 and Highway 68 segment operations, the level of standard is the County roadway standard of LOS C.

D. Access, Circulation, and Safety

- If the project would substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

E. Transit and Bicycle Travel

- If the project would conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks, pedestrian access).

F. Construction Traffic

- If the project would cause short-term increases in traffic on roads or intersections causing existing levels of service to drop to unacceptable levels or aggravating the operation of intersections previously identified as deficient.

Assessment Methodology

The location and magnitude of traffic produced by a new development are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described further in the following sections.

Trip Generation

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development.

The magnitude of traffic added to the roadway system by a particular development is estimated by applying the appropriate trip generation rates to the size of the development. The standard trip generation rates are published in the Institute of Transportation Engineers (ITE) manual entitled *Trip Generation, seventh edition*, 2003. The ITE trip generation rates for single family detached units and condominium units were applied to the proposed residential development. The estimate is that 204 AM peak-hour trips and 266 PM peak-hour trips will occur as a result of the project.

The site also was credited for the trips generated by the existing 18 holes of golf that would be removed. Traffic counts were conducted in January 2007 at the intersection of Carmel Valley Road and Rio Road, which served only the Rancho Cañada golf course because the church was closed. The adjacent church would have negligible traffic during peak hours. The January 2007 count showed the golf course generates 20 AM and 33 PM peak-hour trips per 18 holes. This compares with 40 AM and 50 PM peak-hour trips that are estimated using ITE trip generation rates per 18 holes. The more conservative trip generation estimate (20 AM and 33 PM trips) was used to credit the existing 18 holes that would be removed. No trip generation credits were given for the affordable and below market rate housing proposed for area workers.

The resultant net project trips are 184 AM peak-hour trips and 233 PM peak-hour trips. Table 3.7-10 shows the estimated trip generation for the proposed and existing uses on site.

Trip Distribution

The trips generated by the existing 18-hole golf course were distributed over the study area based upon the recent count data and engineering judgment. The golf course trip distribution is based upon the January 2007 count, with the existing golf course access via Carmel Valley Road. The residential trip distribution pattern used in this study was estimated using select link data supplied by DKS Associates from the AMBAG model. For clarity, the trip distribution patterns are shown separately for both project access schemes and for the existing golf course trips. The trip distribution patterns for the project trips for both project access schemes are shown on Figures 5 and 6 in Appendix D. For convenience, the existing golf course trip distribution is repeated on both figures.

Trip Assignment

The existing golf trips and the residential project trips were assigned to the roadway system in accordance with the trip distribution patterns discussed above. The residential project trip assignment was made separately for both of the project access schemes studied, one with project access via Carmel Valley Road only, and one with access via Carmel Valley Road and via Rio Road. This was done in order to account for the different travel patterns likely under the two project access schemes. The access scheme with access via Carmel Valley Road and via Rio Road was assumed to not allow through traffic. The existing golf course trips were subtracted from the roadway system at the intersection level, in accordance with the golf course trip distribution pattern discussed above. Figure 7 in Appendix D shows the existing golf course trip assignment. Figures 8 and 9 in Appendix D show the residential project trip assignments for both project access schemes. The residential trips shown are the number of trips prior to the subtraction of the existing golf trips.

Project Traffic Volumes

Project trips, as represented in the above project trip assignments, were aggregated and added to existing traffic volumes to obtain existing plus project traffic volumes. The existing golf course trips were subtracted from the existing roadway system at the intersection level. Existing traffic volumes plus project trips are typically referred to simply as *project traffic volumes*; this is contrasted with the term *project trips*, which is used to signify the traffic that is produced specifically by the project. The project traffic volumes for both project access schemes are shown graphically on Figures 10 and 11 in Appendix D. Traffic volumes for all components of traffic are tabulated in Appendix D.

Table 3.7-10 Project Trip Generation Estimates

				Daily		AM Peak Hour						PM Peak Hour					
Project	Land Use	Size	Units	Rate[a]	Trips	Rate[a]	% In	% Out	Total	In	Out	Rate[a]	% In	% Out	Total	In	Out
Existing																	
	School	23	Students			0.35	63%	38%	8	5	3	0.09	0%	100%	2	0	2
Proposed Residential Use																	
	Single-Family-Detached	246	units	9.68	2,380	0.74	25%	75%	182	46	137	0.98	63%	37%	241	152	89
						0.10			994	131	864				-241	-152	-89
	Condominiums	35	units	7.51	263	0.63	17%	83%	22	4	18	0.71	67%	33%	25	17	8
	Total				2,643				204	49	155				266	169	97
Existing																	
	Golf Course 18 holes			23.0	414	1.11	95%	5%	20	19	1	1.83	18%	82%	33	6	27
					Net Trips Difference				**184**	**30**	**154**				**233**	**163**	**70**

Notes:

a Source: for residential uses: ITE Trip Generation, 7th Edition, rates per dwelling unit for single-family detached housing (210) and for condominiums (220) using average rates; for golf course: turning-movement count in January 2007.

Vehicle Queuing and Storage

Vehicle queuing was evaluated qualitatively for the turning movements at the intersection of Carmel Valley Road and Rio Road, under conditions both with and without connection to Rio Road near Val Verde Drive.

Impacts and Mitigation Measures

A. Signalized Intersections

Impact TR-1: LOS Decrease at Signalized Intersections (Less than Significant)

The results of the level of service analysis under project conditions are summarized in Table 3.7-11.

Table 3.7-11 Project Intersection Levels of Service

		Background		Project with CV Rd & Rio Rd Access			
Intersection	Peak Hour	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	Added Trips to Crit. Movements
Hwy 1 & Carmel Valley Rd	AM	17.6	B	18.2	B	18.2	
	PM	24.5	C	25.9	C	25.9	
Carmel Rancho Blvd & Carmel Valley Rd	AM	19.2	B	19.2	B	19.2	
	PM	29.8	C	30.7	C	30.7	
Hwy 1 & Rio Rd	AM	29.2	C	29.3	C	29.3	
	PM	30.9	C	31.4	C	31.4	
Crossroads Dwy & Rio Rd	AM	9.4	A	9.2	A	9.2	
	PM	10.7	B	10.7	B	10.7	
Carmel Center Pl & Rio Rd	AM	5.9	A	5.9	A	5.9	
	PM	8.2	A	8.3	A	8.3	
Carmel Rancho Blvd & Rio Rd	AM	2.1	A	2.6	A	2.6	
(unsignalized)	PM	4.3	A	5.6	B	5.6	
Rio Rd & Carmel Valley Rd	AM	17.5	C	17.8	C	17.8	14
(unsignalized)	PM	35.1	E	33.8	D	33.8	19
Laureles Grade & Carmel Valley Rd	AM	(1)	F	(1)	F	(1)	15
(unsignalized)	PM	(1)	F	(1)	F	(1)	18
Laureles Grade & Hwy 68	AM	16.9	B	17.2	B		
	PM	32.7	C	33.5	C		

As shown, the results indicate that signalized intersections would not decrease to unacceptable levels as a result of project implementation under either access scheme. This impact is considered to be *less than significant* and no mitigation is necessary.

Note that cumulative impacts are addressed separately in Chapter 4.

B. Unsignalized intersections

Impact TR-2: LOS Decrease at Unsignalized Intersections (Less than Significant with Mitigation)

The unsignalized intersection at Laureles Grade and Carmel Valley Road currently operates at an unacceptable LOS F and would continue to operate at an unacceptable LOS F under conditions with the project. The project would add 15 AM and 18 PM trips to this intersection. This intersection meets the peak-hour volume signal warrant under existing and project conditions.

As such, the implementation of the proposed project would result in a *significant* impact at this intersection. Implementation of Mitigation Measure TR-1 would reduce this impact to a *less-than-significant* level.

Under conditions with the project, all other unsignalized intersections would have acceptable levels of service. Thus impacts to these intersections would be *less than significant* and mitigation is not required.

Note that cumulative impacts are addressed separately in Chapter 4.

Mitigation Measure TR-1: Contribute Fair-Share to Signalization (or All-Way Stop) of Laureles Grade and Carmel Valley Road

Installation of a traffic signal or an all-way stop, or grade seperation as described in the Carmel Valley Master Plan Traffic Study (DKS 2007), would mitigate the project impact by improving traffic conditions to an acceptable LOS C or better during the peak hours. The project proponent should make a fair-share contribution toward the cost of signalization by payment of the Carmel Valley Road impact fee.

C. Roadway Segments

Impact TR-3: Peak Hour LOS Decrease for Two-Lane and Multi-Lane Portions of Carmel Valley Road (Less than Significant)

Project traffic volumes on roadway segments were calculated by adding to existing average daily traffic volumes the estimated project trips (see Table 3.7-12).

Table 3.7-12 Project ADT on Carmel Valley Road

			Background		Project—CVRd & Rio Rd Access		
Segment	24-HR Threshold Volume	Existing LOS	Traffic Volume	Threshold Exceeded	Project Daily Trips	Project Traffic Volume	Threshold Exceeded
1	8,487	D	4,764	NO	37	4,801	NO
2	6,835	C	5,250	NO	38	5,288	NO
3	N/A	N/A	9,641	NO	39	9,680	NO
4	11,600	E	12,579	YES	40	12,619	YES
5	12,752	D	14,139	YES	170	14,309	YES
6	15,499	D	17,636	YES	173	17,809	YES
7	16,340	E	20,874	YES	176	21,050	YES
8	48,487	C	25,570	NO	180	25,750	NO
9	51,401	C	30,044	NO	10	30,054	NO
10	N/A	E	27,307	NO	500	27,807	NO

According to 2005 traffic counts on Carmel Valley Road, segment 7 has exceeded its monitoring threshold. Under background conditions, segments 4, 5, and 6 would exceed their monitoring thresholds.

Project peak-hour levels of service for the two-lane segments and multi-lane segments of Carmel Valley Road are shown in Table 3.7-13 and Table 3.7-14, respectively. The results show that segments 1, 2, and 3 would continue to operate at LOS C or better, that segments 4, 5, 6, and 7 would continue to operate at LOS D or better, and that segments 8, 9, and 10 would continue to operate at LOS B or better.

The roadway segment level of service calculation sheets are included in Appendix D. Because the project would not cause a degradation in level of service grade on any segment, this impact is considered *less than significant*.

Note that cumulative impacts are addressed separately in Chapter 4.

Impact TR-4: Peak Hour LOS Decrease for Portions of Highway 1 and 68 (Less than Significant with Mitigation)

The project would contribute to traffic along Highway 1 and Highway 68 where current operations are deficient.

Table 3.7-13 Project Peak-Hour Levels of Service on Two-Lane Segments of Carmel Valley Road

	Carmel Valley Rd			Background Conditions						Project Conditions CV Rd+Rio Rd Access					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
Segment	From	To	LOS Std	2-way Vol	PTSF [a]	LOS	2-way Vol	PTSF [a]	LOS	2-way Vol	PTSF [a]	LOS	2-way Vol	PTSF [a]	LOS
1	Holman Rd	East	C	423	35.4%	A	529	44.2%	B	426	35.7%	A	533	44.4%	B
2	Esquiline Rd	Holman Rd	C	440	35.6%	A	572	45.5%	B	443	35.8%	A	576	45.8%	B
3	Ford Rd	Esquiline Rd	C	824	57.9%	C	889	59.0%	C	827	58.0%	C	893	59.1%	C
4[b]	Laureles Grade	Ford Rd	D	1164	69.7%	C	1211	69.9%	C	1167	69.8%	C	1215	70.0%	C
5[b]	Robinson Cyn Rd	Laurles Grade	D	1212	74.1%	D	1398	75.3%	D	1227	74.6%	D	1416	75.8%	D
6[b]	Schulte Rd	Robinson Cyn Rd	D	1617	80.2%	D	1720	81.1%	D	1632	80.5%	D	1738	81.4%	D
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	1896	84.1%	D	1974	84.3%	D	1911	84.3%	D	1992	84.6%	D

Table 3.7-14 Project Peak-Hour Levels of Service on Multi-Lane Segments of Carmel Valley Road

	Carmel Valley Rd				Background Conditions								Project Conditions - CVRd & Rio Rd Access					
					AM Peak Hour				PM Peak Hour				AM Peak Hour			PM Peak Hour		
Seg.	From	To	Dir.	LOS Standard	Volume (vph)	Flow Rate (pcphpl)/a/	Density (pc/mi/ln)	LOS	Volume (vph)	Flow Rate (pcphpl)/a/	Density (pc/mi/ln) LOS		Volume (vph)	Density (pc/mi/ln)	LOS	Volume (vph)	Density (pc/mi/ln)	LOS
8	Rancho S. Carlos Rd	Rio Rd	EB	C	858	463	8.4	A	1299	693	12.6	B	873	8.6	A	1303	12.7	B
			WB	C	1140	714	13.0	B	1065	581	10.6	A	1140	13.0	B	1081	10.7	A
9	Carmel Rancho Bl	Rio Rd	EB	C	1117	629	11.4	B	1537	804	14.6	B	1109	11.4	B	1583	15.1	B
			WB	C	1476	881	16.0	B	1289	760	13.8	B	1483	16.1	B	1273	13.7	B
10	Carmel Rancho Bl	Hwy 1	EB	C	1197	674	12.3	B	1243	747	10.5	A	1202	12.3	B	1295	13.3	B
			WB	C	1015	677	12.3	B	1222	580	13.6	B	1038	12.6	B	1220	13.5	B

Based on turning volumes, the project would contribute 49 trips northbound and 85 trips southbound on Highway 1 north of Carmel Valley Road during the PM Peak Hour. As current (2000) PM Peak Hour operations between Carmel Valley Road and Ocean Avenue are LOS F, this contributions represents a significant impact.

Based on turning volumes, the project would contribute 8 trips westbound trips e and 5 eastbound trips on Highway 68 east of Laureles Grade during the PM Peak Hour and 3 trips westbound trips and 5 eastbound trips on Highway 68 west of Laureles Grade during the PM Peak Hour. As current (2000) PM Peak Hour segment operations along certain Highway 68 segments between Monterey and Salinas are LOS E and LOS F, this contribution represents a *significant* impact.

These impacts can be mitigated through contribution of a regional impact fee to pay for planned improvements to Highway 1 near Carmel and Along Highway 68 to a *less than significant level*.

Mitigation Measure TR-2: Contribute Fair-Share Regional Impact Fee for Improvements to Highway 1 and Highway 68

The most recently adopted Regional Transportation Plan (RTP) and the TAMC 14-Year Investment Plan Transportation Plan both include the following improvements:

- RTP Project CT008, SR1 – Carmel Operational Improvement. Construct an extended northbound right turn lane on Highway 1 from Carmel Valley Road to Rio Road and provide intersection improvements at both Carmel Valley Road and Rio Road. Caltrans is the lead agency and is preparing a Project Study Report (PSR) presently. Monterey County is the supporting agency.
- RTP Project CT018, SR68 – Operational Improvements. Add turn lanes, approach lanes, etc. to improve operations between SR1 and Salinas, including improvements at Corral de Tierra; Los Laureles Grade; Torero Drive and San Benacio Roads. Caltrans is the lead agency and is preparing a Project Study Report (PSR) presently. Monterey County is the supporting agency.
- RTP Project CT042, SR68 – York Road. Intersection improvements at York Road.

The TAMC 14-Year Investment Plan included countywide transportation facility and service improvements plus local transportation projects partially funded through a proposed one-half cent retail sales tax (Measure A/2006) and partially funded through other means such as state and federal funding, traffic impact fees, grants and bonds. The proposes 2006 Measure A sales tax did not receive the necessary two-thirds vote; however TAMC continues to pursue a regional traffic impact fee and state and federal funds independent of a sales tax. Because Caltrans is involved in the improvements noted above and TAMC continues to pursue funding for regional traffic improvements, the above improvements are considered feasible mitigation.

The California Department of Transportation (Caltrans) recently completed a draft Project Study Report/Project Development Support (PSR/PDS) for Highway 1 between the Carmel River bridge and the Highway 68/Holman Highway interchange. The Transportation Agency for Monterey County (TAMC) and Monterey County have since begun administering an impact fee on all projects adding vehicle trips to this section of Highway 1 to fund the PSR/PDS improvements. As of November 2002, this impact fee was $2,033 per average daily trip and is adjusted monthly based upon the relative change in the Construction Cost Index published by the *Engineering News Record*.

The project proponent shall be responsible to contribute a fair-share impact fee for regional traffic improvements as determined by TAMC in concert with Caltrans and Monterey County

Note that cumulative impacts are addressed separately in Chapter 4, but the regional impact fee would address both direct and cumulative impacts related to the project.

D. Access, Circulation, and Safety

Impact TR-5: Adequate Sight Distance (Less than Significant)

The speed limit is 55 mph on Carmel Valley Road at the site entrance (Rio Road). A vehicle stopped on Rio Road at the intersection of Carmel Valley Road has a clear line of sight of 800 feet looking west and 900 feet looking east. The sight distance standards, as prescribed in the Caltrans *Highway Design Manual*, are presented as a function of vehicle speed. The Caltrans sight distance standards indicate that a vehicle traveling at 60 mph would require 590 feet to stop under normal operating conditions. Since the sight distance in both directions exceeds 590 feet, the sight distance is satisfactory for the speeds prevailing on Carmel Valley Road and this impact is considered *less than significant*.

Impact TR-6: Adequate Project Access (Less than Significant)

Eastbound right turn from Carmel Valley Road onto southbound Rio Road—this movement would be made by 19 vehicles in the AM peak hour and 27 vehicles in the PM peak hour. The existing turn pocket is approximately 100 feet long. Since this movement has no conflicting movement at the intersection, it can be made unimpeded, and there is no reason for queues to develop. The right-turn pocket serves principally as a deceleration lane, allowing vehicles to exit the traffic stream before slowing to a near stop. The existing 100 feet of space is adequate for this purpose.

Westbound left turn from Carmel Valley Road onto southbound Rio Road—this movement would be made by 11 vehicles in the AM peak hour and 17 vehicles in the PM peak hour. The existing turn pocket is approximately 400 feet long, which is enough space to accommodate 20 vehicles at once. The existing storage is therefore sufficient to accommodate all of the future AM and PM peak-hour traffic volumes for this movement.

Northbound left turns from Rio Road onto westbound Carmel Valley Road—this movement would be made by 8 vehicles in the AM peak hour and 28 vehicles in the PM peak hour. The northbound approach of the existing road is 800 feet long and wide enough to accommodate two lanes—a left-turn lane and a right-turn lane. The northbound left-turn pocket would therefore provide 800 feet of storage, which is enough space to accommodate 40 vehicles at once. The existing storage could therefore accommodate all of the AM and PM peak-hour demand.

Northbound right turns from Rio Road onto eastbound Carmel Valley Road—this movement would be made by 16 vehicles in the AM peak hour and 13 vehicles in the PM peak hour. The existing 800 feet of storage is therefore sufficient to accommodate all of the future AM and PM peak-hour traffic volumes for this movement.

Access to Rancho Cañada Village from the west would be by a small-scale extension of Rio Road at the top of a new levee. (See Figure 2-4 and Appendix B, RCVSP Section 4). The portion of Rio Road west of the proposed development is currently in private ownership and the proposed improvements to Rio Road outside of the project area would require permission of the property owners or purchase of the right-of-way needed for the proposed improvements. Rio Road could be developed as either a through road, a local access road, or as an emergency access road.

A through road would allow access to all vehicles. A local access road would restrict access at the west side of the proposed development to residents of Rancho Cañada Village through the use of a gate or similar facility. For an emergency access road configuration, a gate would be employed to prevent through traffic with the exception of emergency vehicles possessing the appropriate code or key.

Since both Rio Road and Carmel Valley Road would provide adequate access into the project area from both the east and west, this impact is considered *less than significant,* and no mitigation is required.

E. Transit and Bicycle Travel

Impact TR-7: Changes to Transit and Bicycle Travel Access (Less than Significant)

The project would incorporate features that would encourage the use of alternative modes and would contribute to a reduction in vehicle trips from what otherwise would occur. The project proposes to build a road connection to Rio Road to the west that would allow access to the Crossroads commercial area that would provide a convenient route for pedestrians and bicycles to access shopping and other services without using Carmel Valley Road. Also, the project proposes to complete the trail along the Carmel River along the site frontage and dedicate an existing bridge to the trail. This would provide another pedestrian and bicycle route for the project and the general public in Carmel Valley. Trail access would be provided to the Carmel Valley Middle School adjacent to the property. The project entry roads have included bicycle paths in their design.

Thus, the project would have a *less-than-significant* impact on transit and bicycle travel. No mitigation is required.

F. Construction Traffic

Impact TR-8: Construction Traffic (Less than Significant)

Construction-related traffic is estimated to be most intensive during the grading stage of project construction. During other stages of construction, the project-related traffic is projected to be less than during this stage. According to the developer, the project's three phases will be graded together in one single effort. Based upon information provided by the developer, it is estimated that during this grading stage approximately 100,000 cubic yards of dirt would be imported to the project site. Using typical truck capacities, the developer has estimated the total number of truckloads for this construction stage at approximately 7,200 truckloads. The developer has further estimated the schedule for this hauling activity to be 28 working days, based upon a 9-hour workday. This schedule equates to 257 trucks per day or 29 trucks per hour traveling to the site (514 trips/day total, 58 trips/hour total) during the 28 working days. These trip totals are less than the estimated project trip generation (refer to Table 3.7-10) for daily trips (2,229 trips/day total) and for AM or PM peak-hour trips (184 and 233 trips/hour total, respectively) once the project is completed and occupied. The construction grading traffic would not constitute a traffic impact according to the impact criteria.

This impact would be *less than significant* and no mitigation is required.

Chapter 3.8
Air Quality

Introduction

This chapter provides a discussion of the air quality issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of local, state, and federal policies and regulations related to air quality; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts. This analysis is based on the Updated Air Quality Analysis prepared for the Rancho Cañada Village Specific Plan by EMC Planning Group (EMC Planning Group 2007), which is available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, Salinas, California.

Cumulative impacts, including discussion of climate change and greenhouse gas emissions are discussed in Chapter 4.

Impact Summary

Table 3.8-1 lists the air quality impacts and mitigation measures for the Proposed Project. As shown in Table 3.8-1, the Proposed Project would have some significant adverse impacts related to air quality within the project area. However, with the implementation of the mitigation measures described in this section, all of the impacts listed would be reduced to less-than-significant levels.

Table 3.8-1 Air Quality Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Air Quality Plan Consistency			
AIR-1: Consistency with the Local Air Quality Management Plan	LTS	None Required	–
B. Long-Term Emissions			
AIR-2: Generation of ROG and NOX, CO, and PM10 Emissions in Excess of MBUAPCD Thresholds	LTS	None Required	–
C. Construction Emissions			
AIR-3: Generation of Construction Emissions in Excess of MBUAPCD Thresholds	Potentially Significant	AIR-1: Limit Construction Activities AIR-2: Implement MBUAPCD Mitigation Measures for Construction PM10 Emissions	LTS
AIR-4: Elevated Health Risk from Exposure to Construction-Related Emissions	Potentially Significant	AIR-3: Implement MBUAPCD Mitigation Measures for Off-Road Mobile Source and Heavy Duty Equipment Emissions	LTS
D. Sensitive Receptors			
AIR-5: Exposure of Sensitive Receptors to Substantial Concentrations of CO	LTS	None Required	–
E. Odors			
AIR-6: Generation of Objectionable Odors Affecting a Substantial Number of People During Construction Activities	LTS	None Required	–
AIR-7: Long-Term Generation of Objectionable Odors Affecting a Substantial Number of People	LTS	None Required	–

LTS=Less than Significant, NI=No Impact

Environmental Setting

This section discusses existing air quality conditions in the project area; describes pollutants of concern in the project corridor area; identifies sensitive receptors in the project 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 project corridor area. Information presented in this section is based in part on communication with the by Monterey Bay Unified Air Pollution Control District (MBUAPCD).

The project site is located in Carmel Valley, which is within Monterey County, near the western end of Carmel Valley Road on a portion of the existing Rancho Cañada Golf Course. The project site is bounded by the Carmel River to the south, Carmel Middle School and Community Church of Monterey Peninsula to the north, and Carmel Valley Road to the north. Monterey County 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 3-county NCCAB.

Methodology

Literature Reviewed

The following literature was reviewed for analysis of air quality found in the proposed Rancho Cañada Village project area.

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- DKS Associates. 2007. Carmel Valley Master Plan: Draft Report. July 27. Oakland, CA. Prepared for The County of Monterey, Oakland, CA.
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- Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: The Physical Science Basis, Summary for Policy Makers. (Working Group 1 Fourth Assessment Report.) February. Available: <http://www.ipcc.ch/SPM2feb07.pdf>. Accessed: May 24, 2007.
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Existing Conditions

Climate and Topography

The NCCAB lies along the central coast of California covering an area of 5,159 square miles. The Santa Clara Valley, which extends into the northeastern tip of the NCCAB, is formed by the southern extent of the Santa Cruz Mountains and the Diablo Range, which establishes the northeast portion of the NCCAB. To the northwest, the NCCAB is dominated by the Santa Cruz Mountains. As the Santa Clara Valley extends southward, it evolves into the San Benito Valley, which runs northwest to southeast. The San Benito Valley is bound on the west by the Gabilan Range, while west of the Gabilan Range is the Salinas Valley. The Salinas Valley extends northwest to southeast from Salinas to King City. The Sierra de Salinas forms the western side of the Salinas Valley and the eastern side of the smaller Carmel Valley. The coastal Santa Lucia Range forms the western side of the Carmel Valley.

The Pacific High, which is a semi-permanent high-pressure cell in the eastern Pacific, is the main controlling factor in the NCCAB's climate. This high-pressure cell dominates in the summer, causing persistent west and northwest winds over the entire California coast. As air descends in the Pacific High, a stable temperature inversion of hot air over a cooler layer of coastal air is formed. As the onshore air currents pass over cool ocean waters, fog and relatively cool air is brought into the coastal valleys, while vertical air movement is inhibited as the warmer air aloft acts as a lid. Summer onshore air currents are typically restricted and channeled by the northwest-to-southeast orientation of mountain ridges. Weak low pressure, which then intensifies afternoon and evening airflow, is caused by surface heating in the interior of the Salinas and San Benito Valleys.

Surface winds tend to become weak and the marine layer grows shallow, dissipating altogether some days, during the fall. Occasionally, airflow is reversed in a weak offshore movement, which tends to build up pollutant levels over a period of a few days due to the stationary air mass held in place by the Pacific High pressure cell. Pollutants tend to transport into the NCCAB from the San Francisco Bay area and the Central Valley during the fall months because of the north and east winds that result from these conditions.

During winter, the Pacific High migrates to the south and exerts less influence on the air basin. Air will frequently flow out of the Salinas and San Benito Valleys in a southeasterly direction, especially during night and morning hours. While northwest winds are still dominant in winter, easterly wind flows are more frequent. During the winter and early spring, air quality is generally good in the NCCAB due to the general absence of deep, persistent inversions and the occasional storm systems.

According to data recorded by the Monterey station, the project area experiences moderate temperatures and humidity. 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 for the following six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (particulate matter smaller than 10 microns or less in diameter [PM10] and particulate matter smaller than 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. Within the project area, CO, PM10 and ozone are considered pollutants of 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 ambient air quality standards (CAAQS and NAAQS, respectively) is provided in Table 3.8-2.

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 0.070 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 parts per million (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 3.8-2.

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.

State and federal CO standards have been set for 1- and 8-hour averaging times. The state 1-hour standard is 20 ppm, not to be exceeded, whereas the federal 1-hour standard is 35 ppm, not to be exceeded more than one day per year. The state and 8-hour standard is 9.0 ppm, not be exceeded, while the federal 8-hour standard is 9 ppm, not to be exceeded more than one day per year. State and federal standards are summarized in Table 3.8-2.

Inhalable Particulates

Inhalable 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

Table 3.8-2 Ambient Air Quality Standards Applicable in California

			Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
Pollutant	Symbol	Average Time	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	NA	NA	NA
		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	35	NA	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded
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 EPA 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 2007a

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: particulate matter 10 microns or less in diameter (PM10) and particulate matter 2.5 microns or less in diameter (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 arithmetic mean. The federal PM10 standard is 150 μ/m^3 as a 24-hour average. The State PM2.5 standard is 12 μ/m^3 as an annual arithmetic mean. The federal PM2.5 standards are 15 μ/m^3 as an annual arithmetic mean and 35 μ/m^3 for the 24-hour average. State and federal standards are summarized in Table 3.8-2.

Toxic Air Contaminants

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) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) 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. The TAC of most concern with regards to the Proposed Project is diesel exhaust particulate matter, which was identified by the ARB as a TAC in October 2000.

Greenhouse Gases and Climate Change/Global Warming

As a cumulative impact, this issue is discussed in Chapter 4.

Air Quality Monitoring Data

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the federal and state governments have

established for various pollutants (Table 3.8-2) and by monitoring data collected in the region. Monitoring data concentrations are typically expressed in terms of ppm or micrograms per cubic meter ($\mu g/m^3$). The nearest air quality monitoring station in the vicinity of the project corridor 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. Air quality monitoring data from the Carmel Valley monitoring station is summarized in Table 3.8-3. This data represents air quality monitoring data for the last three years (2004-2006) in which complete data is available. As indicated in Table 3.8-3, the Carmel Valley monitoring station has experienced no violations of the ozone and PM10 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 an unclassified/attainment area with regards to the federal 8-hour ozone, CO, PM10, and PM2.5 standards. The ARB has classified Monterey County as a nonattainment area with regards to the state 1-hour ozone and PM10 standards. The ARB has classified Monterey County as an attainment area with regards to the state CO and PM2.5 standards. Monterey County's attainment status for each of these pollutants relative to the NAAQS and CAAQS is summarized in Table 3.8-4.

Table 3.8-4 Monterey County Attainment Status for State and Federal Standards

Pollutant	Federal	State
1-hour O_3	NA[1]	Nonattainment
8-hour O_3	Unclassified/attainment	NA[2]
CO	Unclassified/attainment	Attainment
PM10	Unclassified/attainment	Nonattainment
PM2.5	Unclassified/attainment	Attainment

Sources: ARB 2007c

Notes:

1 Previously in non-attainment area, no longer subject to the 1-hour standard as of June 15, 2005.

2 The ARB 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.

Table 3.8-3. Ambient Air Quality Monitoring Data Measured at the Carmel Valley Monitoring Station

Pollutant Standards	2004	2005	2006
Ozone			
Maximum 1-hour concentration (ppm)	0.093	0.073	0.085
Maximum 8-hour concentration (ppm)	0.079	0.065	0.072
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)[d]			
National[b] maximum 24-hour concentration ($\mu g/m^3$)	31.0	23.0	28.0
National[b] second-highest 24-hour concentration ($\mu g/m^3$)	23.0	22.0	25.0
State[c] maximum 24-hour concentration ($\mu g/m^3$)	33.0	24.0	29.0
State[c] second-highest 24-hour concentration ($\mu g/m^3$)	23.0	23.0	25.0
National annual average concentration ($\mu g/m^3$)	11.7	11.3	11.7
State annual average concentration ($\mu g/m^3$)[e]	–	11.9	12.0
Number of days standard exceeded[a]			
NAAQS 24-hour (>150 $\mu g/m^3$)[f]	0.0	0.0	0.0
CAAQS 24-hour (>50 $\mu g/m^3$)[f]	0.0	0.0	0.0

Source: ARB 2007b

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] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] 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.

[d] Measurements usually are collected every 6 days.

[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.

Sensitive Land Uses

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 vicinity of the project site include the following:

- single-family residences located along Carmel Valley Road and connecting roadways;
- multi-family residences and condominiums located along Carmel Valley Road and Rio Road;
- the Community Church of the Monterey Peninsula, the Carmel Youth Baseball Pony League Fields, and the Carmel Middle School located to the north of the project site; and
- rural residential and the Riverwood multi-family housing development located to the west of the project site

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of air quality in the Proposed Project area being considered by Monterey County.

Air pollution control programs were established in California before federal requirements were enacted. However, federal Clean Air Act legislation in the 1970s resulted in a gradual merging of state and federal air quality programs, particularly those relating to industrial sources. Air quality management programs developed by California since the late 1980s have generally responded to requirements established by the federal Clean Air Act (CAA).

The enactment of the California Clean Air Act (CCAA) in 1988 and the federal CAA Amendments of 1990 has produced additional changes in the structure and administration of air quality management programs. The CCAA requires preparation of an air quality attainment plan for any area that violates state standards for CO, SO_2, NO_2, or ozone. Locally prepared attainment plans are not required for areas that violate the state standards for PM10, but the ARB is currently addressing PM10 attainment issues.

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 are implemented in the County through the general planning process. 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.

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). State and federal standards for a variety of pollutants are summarized in Table 3.8-2.

Federal Policies and Regulations

The federal 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.

Areas that do not meet the federal ambient air quality standards shown in Table 3.8-2 are called *nonattainment* areas. For these nonattainment areas, the CAA requires states to develop and adopt State Implementation Plans (SIPs), which are air quality plans showing how air quality standards will be attained. 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 for such improvements as highway construction and sewage treatment plants. In California, the EPA has delegated authority to prepare SIPs to the ARB, which, in turn, has delegated that authority to individual air districts. 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 Policies and 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 that will be incorporated into the SIP. 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 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 SIPs.

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 CCAA of 1988 substantially added to the authority and responsibilities of air districts. The CCAA 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 CCAA 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 CCAA requires designation of attainment and nonattainment areas with respect to state ambient air quality standards. The CCAA 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, but the ARB is currently addressing PM10 attainment issues.

The CCAA 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 CCAA emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic

control measures (TCMs). The CCAA does not define *indirect and area-wide sources*. However, Section 110 of the federal Clean Air Act defines an indirect source as:

> a facility, building, structure, installation, real property, road, or highway, which attracts, or may attract, mobile sources of pollution. Such term includes parking lots, parking garages, and other facilities subject to any measure for management of parking supply.

TCMs are defined in the CCAA as "any strategy to reduce trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing vehicle emissions."

Local Policies and 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 California Air Resources Board 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 the Association of Monterey Bay Area Governments (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.

Monterey County General Plan (1982)

The following local policies from the Monterey County General Plan are applicable to the Proposed Project:

- Policy 20.1.1. The County's land use and development policies shall be integrated and consistent with the natural limitations of the County's air basins.
- Policy 20.1.2. The County should encourage the use of mass transit, bicycles and pedestrian modes of transportation as an alternative to automobiles in its land use plans.
- Policy 38.1.4. The County shall encourage transportation alternatives such as bicycles, car, pools, transit and compact vehicles.
- Policy 20.1.3. The County should develop and implement, where appropriate, a roadside tree program and should encourage and maintain vegetated/forested areas to the maximum extent feasible, for their air purifying functions.
- Policy 20.2.2. The County shall adopt and support, as a minimum, the Air Quality Plan for the Monterey Bay Region as prepared by AMBAG.
- Policy 20.2.5. The County shall encourage the use of the best available control technology as defined in the most current Monterey Bay Unified Air Pollution Control District rules and
- Policy 38.1.1. The County shall support the implementation of measures for reducing air pollution from transportation sources.
- Policy 41.1.2. Developers of major traffic generating activities shall provide fixed transit facilities such as bus shelters and pullouts, consistent with anticipated demand.

Carmel Valley Master Plan (revised 1996)

The following local policies from the Carmel Valley Master Plan are applicable to the Proposed Project:

- Policy 3.1.5. 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. [This also prevents additional exposure of PM10 to the sensitive receptors at the Carmel Valley Middle School.]
- Policy 20.2.7.1. At least one station to monitor air quality shall be maintained in Carmel Valley. Whenever records for August, September and October of a given year include 15 hours (or more) of 0.1 ppm (or more) of oxidants (ozone), the County shall immediately hold public hearings to consider limitation of further development in the Master Plan area.
- Policy 37.4.1. The County shall encourage overall land use patterns which reduce the need to travel.

- Policy 38.1.4.1. Public transit should be explored as an alternative to the use of private automobiles and to help preserve air quality. (Whenever feasible all new development shall include a road system adequate not only for its internally generated automobile traffic but also for bus - both transit and school - pedestrian and bicycle traffic which should logically pass through or be generated by the development.)

Impact Analysis

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, including the MBUAPCD's *CEQA Air Quality Guidelines* (MBUAPCD 2004), a project impact would be considered significant if the project would:

A. Air Quality Plan Consistency

- Conflict with or obstruct implementation of the Air Quality Management Plan (AQMP).

B. Long-Term Emissions

- Result in generation of emissions of or in excess of 137 pounds per day for VOC or NOx, 550 pounds per day of carbon monoxide, and/or 82 pounds per day of PM10 (MBUAPCD 2004).

C. Construction Emissions

- Result in generation of emissions of 82 pounds or more per day of PM10 due to construction with minimal earthmoving on 8.1 or more acres per day or grading/excavation site on 2.2 or more acres per day (MBUAPCD 2004).
- Result in a short-term increase in Toxic Air Contaminants.

D. Sensitive Receptors

- Expose sensitive receptors (e.g., residents, schools, hospitals) to substantial pollutant concentrations, i.e., those that exceed the MBUAPCD standards identified above.

E. Odors

- Create objectionable odors in substantial concentrations, which could result in injury, nuisance, or annoyance to a considerable number of persons or would endanger the comfort, health, PM10 or safety of the public.

F. Greenhouse Gases / Climate Change

- This impact is discussed in Chapter 4 as a cumulative impact.

Assessment Methodology

This analysis is based on the Updated Air Quality Analysis prepared for the Rancho Cañada Village Specific Plan by EMC Planning Group (EMC Planning Group 2007).

Construction Emissions

Short-term air quality emissions include the on-site and off-site generation of fugitive dust, onsite generation of exhaust emissions from construction equipment, and the off-site generation of mobile source emissions during the construction phase of the project. "Worst case" construction emissions typically occur during the initial site preparation, including grading, and excavation, due to the increased amount of surface disturbance and the number of construction equipment required for construction of the Rancho Cañada Village Specific Plan. Sensitive receptors in the vicinity of the project site that may be affected by short-term construction emissions include residential uses and the Carmel Middle School located north of the Specific Plan area. Don Chapin Company prepared a Construction Phase Analysis for the Rancho Cañada Village Specific Plan project, which is included in Appendix I of the Specific Plan and available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, Salinas, California. This information was used to evaluate the construction emissions using the URBEMIS2007 model.

Operational Emissions

URBEMIS2007 (version 9)

URBEMIS2007 version 9 an air quality modeling program, was used to predict quantities of volatile organic compounds (VOC), measured as ROG, NO_X, PM10, and CO emissions that would be generated by the Proposed Project from operational (vehicle trips), construction, and area source emissions (fireplaces, landscaping, etc.).

Carbon Monoxide Hot Spot Emissions

The primary mobile source pollutant of local concern is carbon monoxide. Localized concentrations of CO are a direct function of vehicle idling time and thus, traffic flow conditions. CO concentrations close to congested roadways or intersections may reach unhealthful levels, affecting local sensitive receptors (e.g. residents, school children, hospital patients, and the elderly). The visitors at the adjacent church are considered sensitive receptors that could be affected by increased CO concentrations due to operation of a commercial center. Under normal meteorological conditions, CO transport is extremely limited and disperses rapidly from the source. High CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS E or below). Therefore, to determine significance relative to CO emissions, the level of service on local roadways and intersections impacted by project generate traffic must be analyzed. The LOS of all study roadways and intersections was analyzed by Hexagon Transportation Consultants in the *Rancho Cañada Residential Development Draft Traffic Study* (Hexagon 2007) and compared to MBUAPCD CO assessment guidance found in the MBUAPCD CEQA Air Quality Guidelines (MBUAPCD 2004).

Impacts and Mitigation Measures

A. Air Quality Plan Consistency

Impact AIR-1: Consistency with the Local Air Quality Management Plan (Less than Significant)

AMBAG evaluated the Rancho Cañada Village Specific Plan for consistency with the applicable AQMP. Consultation with AMBAG indicates that the Proposed Project is consistent with the local AQMP. This letter is documented in correspondence from AMBAG staff to EMC Planning Group staff, and is presented in Appendix I of the Rancho Cañada Village Specific Plan and available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, Salinas, California. Because the Proposed Project is consistent with the AQMP, this impact is considered *less than significant*.

B. Long-Term Traffic Impacts

Impact AIR-2: Generation of ROG and NO_X, CO, and PM10 Emissions in Excess of MBUAPCD Thresholds (Less than Significant)

Long-term air quality impacts are associated with the change in permanent use of the project site. Both area and mobile sources must be considered with respect to the Proposed Project. Area sources include emissions from onsite activities and natural-gas combustion for heating requirements, as well as emissions from

personal product use. Mobile sources include vehicle trips, including employees, deliveries, and maintenance activities.

Table 3.8-5 presents the air quality emissions associated with operation of the Rancho Cañada Village Specific Plan as determined by the URBEMIS2007 air quality-modeling program. The URBEMIS air quality report is presented in Appendix I of the Rancho Cañada Village Specific Plan and available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, Salinas, California.

Table 3.8-5 Emissions of Criteria Pollutants from Operational Activities

Pollutant	MBUAPCD Thresholds (Pounds per day)	Summer emissions (Pounds per day)	Winter emissions (Pounds per day)
ROG	137	31.86	36.96
NO_X	137	48.43	59.18
CO	550	364.40	413.02
PM10	82	40.92	40.92
PM2.5	NA	8.26	8.26
SO_2	NA	0.21	0.21

Source: EMC Planning Group 2007

Table 3.8-5 indicates that project-related operational emissions of criteria pollutants are not anticipated to exceed the MBUAPCD's thresholds of significance (137 pounds per day for VOC or NOx, 550 pounds per day of carbon monoxide, and/or 82 pounds per day of PM10). Consequently, this impact is considered *less than significant*. No mitigation is required.

C. Construction Emissions

Impact AIR-3: Generation of Construction Emissions in Excess of MBUAPCD Thresholds (Less than Significant with Mitigation)

The MBUAPCD *CEQA Air Quality Guidelines* indicate that projects generating 82 lbs/day or more of construction-related PM10 emissions would result in a significant construction impact (MBUAPCD 2004). 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 (MBUAPCD 2004). 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 (MBUAPCD 2004).

The Proposed Project site is approximately 72 acres, but the construction would occur on approximately half of the site resulting in disturbance of about 36 acres. Construction-related emissions were quantified using URBEMIS2007 and a construction inventory provided by Don Chapin Company. Table 3.8-6 summarizes emissions associated with construction activities.

Table 3.8-6 Emissions of Criteria Pollutants from Construction Activities

Pollutant	MBUAPCD Thresholds (Pounds per day)	2008 construction emissions (Pounds per day)	2009 construction emissions (Pounds per day)
ROG[1]	NA	12.97	12.36
NO_X[1]	NA	96.49	91.28
CO	NA	57.24	54.87
PM10	82	136.80	136.48
PM2.5	NA	32.70	32.41
SO_2	NA	0.10	0.10

Source: EMC Planning Group 2007

1 The MBUAPCD has indicated that VOC and NO_X emissions from typical construction have been accommodated in State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS (MBUAPCD 2004)

Table 3.8-6 indicates that construction activities (predominantly site grading) would result in construction emissions in excess of MBUAPCD standards. This is a *significant* impact. Implementation of Mitigation Measures AIR-1 and AIR-2 would reduce this impact to *less than significant* levels.

Mitigation Measure AIR-1: Limit Construction Activities

The County shall prohibit 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-2: Implement MBUAPCD Mitigation Measures for Construction PM10 Emissions

The County shall require the construction contractor to implement feasible control measures including:

- 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-4: Elevated Health Risk from Exposure to Construction-Related Emissions (Less than Significant with Mitigation)

Construction activities are anticipated to involve the operation of diesel-powered equipment for various 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 the project site. 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, it is currently unknown how close construction activities may occur in relation to sensitive receptors, but construction activities may occur with these distances with regards to the play fields at the Carmel Middle School. This is a potentially *significant* impact. However, implementation of Mitigation Measure AIR-3 would reduce construction-related emissions to a *less-than-significant* level

Mitigation Measure AIR-3: 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 PuriNO_X emulsified diesel fuel in existing engines.
- Modify engine with ARB verified retrofit (i.e., diesel oxidation catalyst filters).
- Repower with current standard diesel technology (i.e., equipment shall be 2003 and newer equipment).
- Repower with CNG/LNG technology.

D. Sensitive Receptors

Impact AIR-5: Exposure of Sensitive Receptors to Substantial Concentrations of CO (Less than Significant)

High CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS E or below). Therefore, to determine significance relative to CO emissions, the level of service on local roadways and intersections impacted by project generate traffic must be analyzed. The LOS of all study roadways and intersections was analyzed by Hexagon Transportation Consultants in the *Rancho Cañada Residential Development Traffic Study* (Hexagon 2007).

Guidance from the MBUAPCD indicates that a significant CO impact would occur if any of the following traffic conditions are met at intersections affected by the Proposed Project:

- LOS at intersection/road segment degrades from D or better to E or F;
- V/C ratio at intersection/road segment at LOS E or F increases by 0.05 or more;
- delay at intersection at LOS E or F increases by 10 seconds or more; or
- reserve capacity at unsignalized intersection at LOS E or F decreases by 50 or more.

The traffic report prepared by Hexagon indicates the project would have a traffic impact at the Rio Road and Carmel Valley Road intersection under project conditions in the Carmel Valley Road Only project access scenario, and not in the Carmel Valley Road and Rio Road project access scenario. The project would have a traffic impact under project conditions in both project access scenarios at the Laureles Grade and Carmel Valley Road intersection.

The unsignalized intersection at Rio Road and Carmel Valley Road, which currently operates at an acceptable LOS C, would operate at an acceptable LOS E or better under conditions with the project in both project access scenarios. The project would add 184 AM and 233 PM trips with all access from Carmel Valley Road and 14 AM and 19 PM trips with access to Carmel Valley Road and Rio Road. This intersection does not meet signal warrants under existing conditions, but the addition of project traffic under conditions with project access via Carmel Valley Road only would cause the peak-hour volume warrant for traffic signal installation to be satisfied at this intersection. If the project has access to both Carmel Valley Road and Rio Road, this intersection would not meet signal warrants. Mitigation proposed in the traffic report prepared by Hexagon indicates that installation of a traffic signal at this intersection would mitigate the project impact by providing for the warranted signal while maintaining traffic conditions at an acceptable LOS A during the peak hours. Consequently, the MBUAPCD's conditions for a less than significant CO impact would be met at this intersection with implementation of this traffic mitigation measure.

The unsignalized intersection at Laureles Grade and Carmel Valley Road currently operates at an unacceptable LOS F and would continue to operate at an unacceptable LOS F under conditions with the project in both project access scenarios. The project would add 15 AM and 18 PM trips to this intersection. This intersection meets the peak-hour volume signal warrant under existing and project conditions. Mitigation proposed in the traffic report prepared by Hexagon (see also Chapter 3.7, *Transportation and Traffic)* indicates that installation of a traffic signal, or alternative improvement as described in the Carmel Valley Master Plan Traffic Study (DKS Associates 2007), would mitigate the project impact by improving traffic conditions to an acceptable LOS C or better during the peak hours. The project should make a fair-share contribution toward the cost of signalization by payment of the Carmel Valley Road impact fee. Monterey County has an established impact fee program to fund improvements to Carmel

Valley Road, and TAMC is pursuing an impact fee program to fund improvements to Highway 1. The project would be subject to these fees. Consequently, with the implementation of this traffic mitigation measure, the project's impact on CO would be *less than significant.*

E. Odors

Impact AIR-6: Generation of Objectionable Odors Affecting a Substantial Number of People During Construction Activities (Less than Significant)

The construction phase of the project is anticipated to result in the emission of exhaust from the heavy-duty diesel equipment used during construction activities at the project site. The odors associated with diesel fuel exhaust may occasionally be detected at the single-family homes and the Carmel Valley Middle School located north of the project site. During the summer, onshore winds traveling up the Carmel Valley would push construction emissions away from the Carmel Valley Middle School. Other times of the year experience variable wind patterns that could result in construction emissions directed toward the school. However, the use of heavy-duty construction equipment at the project site would occur over a short period of time and the rapid dissipation of gases in the air would result in a *less-than-significant* impact on the sensitive receptors located in the project vicinity.

Impact AIR-7: Long-Term Generation of Objectionable Odors Affecting a Substantial Number of People (Less than Significant)

The Proposed Project is not anticipated to create long-term objectionable odors, as residential land uses are typically not associated with odor generation. Consequently, this impact is considered *less than significant.*

Chapter 3.9
Noise

Introduction

This chapter provides a discussion of the noise impacts associated with the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. Information in this chapter is based on information in the document entitled "Noise Assessment Study for the Planned Rancho Cañada Village Specific Plan Monterey County" (project noise study) prepared by Edward L. Pack Associates, Inc. dated July 19, 2007 (Pack 2007), which is available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, Salinas, California.

The chapter includes a review of existing conditions; a summary of applicable noise policies and regulations; and an analysis of direct, and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

Table 3.9-1 Noise Impact Summary

Impact	Level of Significance	Mitigation Measures	Level of Significance After Mitigation
A. Long-Term Increases in Noise			
NOI-1: Exposure of On-Site Noise Sensitive Land Use to Noise	Potentially Significant	NOI-1: Implement Noise Reducing Treatments at Residences Located Near the Batting Practice Area	LTS
NOI-2: Exposure of Off-Site Noise Sensitive Land Uses to Increased Noise	LTS	None Required	–
B. Short-Term Increases in Noise			
NOI-3: Exposure of Noise Sensitive Land Uses to Construction Noise	Potentially Significant	NOI-2: Employ Noise-Reducing Construction Practices	LTS
C. Vibration			
NOI-4: Exposure of Sensitive Land Uses to Vibration from Construction Activity	LTS	None Required	–

LTS=Less than Significant, NI=No Impact

Environmental Setting

This section discusses existing noise conditions in the Specific Plan project 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 Hz. 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/m2), 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 3.9-2 shows typical A-weighted noise levels.

Table 3.9-2 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 (Leq): Leq represents an average of the sound energy occurring over a specified period. In effect, Leq 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 (Leq[h]), is the energy average of the A-weighted sound levels occurring during a 1-hour period.
- Percentile-Exceeded Sound Level (Lx): Lx 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 (Lmax): Lmax is the highest instantaneous sound level measured during a specified period.
- Day-Night Level (L_{dn}): Ldn 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 uses include residences, schools, and hospitals. Sensitive land uses in the project 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,
- Rancho Cañada golf course located to the east of the project site,
- The Community Church of the Monterey Peninsula, the Carmel Youth Baseball Pony League Fields, and the Carmel Middle School located to the north of the project site, and
- Rural residential and the Riverwood multi-family housing development located to the west of the project site

The noise-sensitive areas affected by traffic on Carmel Valley Road were divided into ten segments for this study. A description of these segments and associated land use is shown on Table 3.9-3.

Table 3.9-3 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 Los Laureles Grade Road	Single-family residences, lodging
5		Los Laureles Grade Road 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 project area includes residential and public land uses located along Carmel Valley Road between the City of Carmel-by-the-Sea and the Town of Carmel Valley. The existing noise environment in the project area is dominated by noise from traffic traveling on Carmel Valley Road. Other noise sources in the area include:

- The Carmel School District maintenance facility (mostly school buses entering and existing),
- Youth baseball fields and batting cages
- Golf course activities

The existing noise environment in the project area has been characterized both with sound level measurements taken in the project area and traffic noise modeling as described below.

Noise Monitoring

Noise monitoring was conducted by Edward L. Pack Associates on January 26-28, 2004 and March 4–6, 2004. Table 3.9-4 summarizes the noise monitoring results.

Traffic Noise Modeling

The report by Edward L. Pack also provides the results of traffic noise modeling for existing conditions. The results are summarized in Table 3.9-5.

Table 3.9-5 Traffic Noise Modeling Results for Existing Conditions

Road	Segment	CNEL*
Carmel Valley Road	East of Rio Road	74
	Rio Road to Carmel Middle School	73
	Carmel Middle School to Carmel Rancho Boulevard	73
Carmel Rancho Boulevard	South of Carmel Valley Road	63
	North of Rio Road	61
Rio Road East	--	46
Rio Road West	Project site to Carmel Rancho Boulevard	50
	Carmel Rancho Boulevard to Highway 1	61

Source: Edward L. Pack 2007

*50 feet from roadway centerline

Regulatory Setting

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 Project.

County of Monterey Draft General Plan

According to the Public Safety Element of the Draft Monterey General Plan, the maximum exterior sound level acceptable for residential land uses is 65 dBA CNEL. The maximum allowable interior noise level for these land uses is 45 dBA. For new roadway improvement projects and general construction projects, the acceptable nose levels shown in Table 3.9-6 must be met. Further,

Table 3.9-4 Summary of Noise Monitoring Results

Location	Description	Dates	Leq	CNEL
1	30 ft. from the south property line of the Community Church of Montetery (northest corner of the project site and approximately 700 feet from the centerline of Carmel Valley Road)	January 26–28, 2007	Day: 44.6 to 54.0 dBA Eve: 46.3 to 49.4 dBA Night: 38.0 to 47.3 dBA	51 CNEL Sunday 52 CNEL Monday
2	Behind the Carmel School District Maintenance Facility at their property line and 175 feet from the northern boundary of the project site.	January 26–28, 2007	Day: 41.3 to 44.2 dBA Eve: 41.7 to 47.1 dBA Night: 331. to 41.5 dBA	47 CNEL Sunday 51 CNEL Monday
3	54 ft. from the centerline of Rio Road west of the project site in front of the Riverwood development	March 4–6, 2007	Day: 53.5 to 57.8 dBA Eve: 47.3 to 58.6 dBA Night: 36.8 to 49.4 dBA	56 CNEL

Source: Edward L. Pack 2007.

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 Draft General Plan is appropriate and may be used in the determination of significance for the Proposed Project.

Table 3.9-6 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	50–60	60–70	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+	---

Source: Monterey County General Plan 1982

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.

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 Greater Monterey Peninsula 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, a project impact would be considered significant if the project would:

A. Long-Term Increases in Noise

- Expose persons to or generate noise levels in excess of standards established in the County's "Land Use Compatibility for Exterior Community Noise" chart.
- Expose residential single- or multi-family housing to noise levels above 60 dB L_{dn}.
- Expose outdoor activity areas of noise-sensitive land uses to a 5 dB increase in noise where existing noise levels are below 60 dBA L_{dn}, a 3 dB increase in noise where existing noise levels are between 60 and 65 dBA L_{dn}, or a 1.5 dB increase in noise where existing noise levels are above 65 dBA L_{dn}.

B. Short-Term Noise Increases

- 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.

Noise from traffic on roadways in the project area has been evaluated under existing conditions without the project and existing conditions plus the project (including the extension of Rio Road). Details of the traffic noise modeling are presented in the noise report by Edward L. Pack, which is included as Appendix G of the Rancho Cañada Village Specific Plan and is available for review at the Monterey County Resource Management Agency - Salinas Permit Center, 168 West Alisal Street, 2nd Floor, Salinas, California.

Impacts and Mitigation Measures

A. Long-Term Increases in Noise

Impact NOI-1: Exposure of On-Site Noise Sensitive Land Use to Noise (Less than Significant with Mitigation)

New noise sensitive land uses on the project site (condominiums and single family residences) will be exposed to noise from various sources. The project noise study indicates the following (Edward L. Pack 2007):

Condominiums

Traffic noise from Rio Road and operational noise from the Community Church of the Monterey Peninsula and the Carmel School District Maintenance Facility will be less than 53 CNEL. The noise study assumes nominal exterior-to-interior noise reduction of 15 dB. Under this assumption the interior noise level would be less than 38 CNEL. Because exterior and interior noise levels would be less than 60 CNEL and 45 CNEL respectively, the noise impact at the condominiums is *less than significant.*

Single Family Residences

The noise exposure at the lots closest to the baseball fields and batting cage is expected to be 52 CNEL for baseball games and 62 CNEL for batting practice. Corresponding interior noise levels would be 37 CNEL and 47 CNEL. Noise exposure at lots closest to the golf course is predicted to be 43 CNEL exterior and 28 CNEL interior. Noise exposure at lots closest to the Carmel School District Maintenance Facility is predicted to be 46 CNEL exterior and 31 CNEL interior. Noise exposure at lots closest to Rio Road is predicted to be 55 CNEL exterior and 40 CNEL interior. With the exception of the predicted noise from the batting practice area, all predicted noise levels are less than 60 CNEL exterior and 45 CNEL interior. Noise from the batting practice area is predicted to exceed 60 CNEL exterior and 45 CNEL interior. The exposure of the single-family residences to noise from the batting area is therefore considered to be *significant.*

This impact can be mitigated to a *less-than-significant* level through the implementation of Mitigation Measure NOI-1, described below.

Mitigation Measure NOI-1: Implement Noise Reducing Treatments at Residences Located Near the Batting Practice Area

The project applicant shall retain a qualified acoustical consultant to identify specific outdoor and indoor residential areas near the batting practice area that could be exposed to noise exceeding 60 CNEL exterior and 45 CNEL. The consultant shall prepare a report which identifies specific treatments to be implemented that will reduce exterior and interior noise to less than 60 CNEL and 45 CNEL respectively. Treatments that can be implemented to achieve these performance standards include but are not limited to:

- Construction of a solid barrier between the batting practice area and the outdoor use areas.
- Upgraded acoustical insulating of building structures.
- Addition of fresh air ventilation to allow windows to be closed when batting practice is occurring.

The report shall be submitted to the County for review and approval prior to issuance of buildings permits.

Impact NOI-2: Exposure of Off-Site Noise Sensitive Land Uses to Increased Noise (Less than Significant)

Table 3.9-7 summarizes predicted traffic noise levels under existing and existing plus project conditions.

Table 3.9-7 Traffic Noise Modeling Results for Future Conditions

Road	Segment	Existing CNEL*	Existing Plus Project CNEL*	Increase in Noise
Carmel Valley Road	East of Rio Road	74	74	0
	Rio Road to Carmel Middle School	73	73	0
	Carmel Middle School to Carmel Rancho Boulevard	73	73	0
Carmel Rancho Boulevard	South of Carmel Valley Road	63	63	0
	North of Rio Road	61	61	0
Rio Road East	--	46	47	1
Rio Road West	Project site to Carmel Rancho Boulevard	50	55	5
	Carmel Rancho Boulevard to Highway 1	61	62	1

Source: Edward L. Pack 2007

*50 feet from roadway centerline

The traffic noise modeling results in Table 3.9-7 indicate that with the exception of Rio Road West, project-related increases in traffic noise will be 1 dB or less at other roadways in the area. The noise impact of the project on those areas is therefore considered to be less than significant. Along Rio Road West the implementation of the project is predicted increase noise by 5 dB in a location where existing noise is less than 60 CNEL. This would be a significant impact where outdoor activity areas are exposed to traffic noise. However, outdoor activity areas at the multi-family residential areas located along Rio Road West are set back from the road and are shielded by buildings. This impact is therefore *less than significant* and no mitigation is required.

B. Short-Term Increases in Noise

Impact NOI-3: Exposure of Noise Sensitive Land Uses to Construction Noise (Less than Significant with Mitigation)

Short-term construction noise impacts may occur during construction of the project. Construction noise generates noise levels in the range of 75 to 95 dBA at a distance of 30 feet from the source and has the potential to disturb nearby residential land uses. Noise from construction equipment attenuates at a rate of 6 dB per doubling of distance. At receptor locations approximately 250 feet from the site, construction noise is predicted to be in the range of 56 to 76 dBA.

Because construction noise could exceed 85 dBA at 50 feet, noise from construction is considered to be potentially *significant*.

Implementation of the following mitigation measure would reduce this impact to a *less-than-significant* level.

Mitigation Measure NOI-2: Employ Noise-Reducing Construction Practices

The project applicant shall employ noise reducing construction practices such that noise from construction is in requirements of the Monterey County Noise Ordinance. The ordinance limits construction noise to 85 dBA measured 50 feet from the noise source when construction is located within 2,500 feet of any occupied dwelling unit. Measures that can be implemented to comply with the requirement include but at not limited to:

- Requiring all internal combustion engines used at the project site to be equipped with a type of muffler recommended by the vehicle manufacturer.
- Requiring all equipment to be in good working condition to minimize noise created by faulty or poorly maintained engine, drive train, and other components.
- Restrict or prohibit construction traffic on Rio Road west of the project site. All construction equipment should access the site via Rio Road from Carmel Valley Road to minimize noise at existing residences.
- Scheduling noisy operations for the daytime hours of 7:00 a.m. to 5:00 p.m. Monday through Friday.
- Requiring all diesel equipment to be located more than 200 feet from any residence if equipment is to operate more than several hours per day.
- Placement of berming or stockpiled material between equipment and noise sensitive location to reduce construction noise.
- Use scrapers as much as possible for earth removal rather than noisier loaders and haul trucks.
- Use a backhoe for backfilling which is quieter than dozers or loaders
- Shield or enclose power saws where practical to decrease noise emissions. Use nail guns where possible instead of manual hammering.

C. Vibration Impacts

Impact NOI-4: Exposure of Sensitive Land Uses to Vibration from Construction Activity (Less than Significant)

The operation of heavy construction equipment can produce ground vibration. The highest vibration levels are typically created by high impact equipment such as pile driving. Operation of other equipment such as scrapers and graders does not produce perceptible ground vibration beyond about 250 feet (FTA 2006).

Because no high impact construction equipment will be used and because there are no noise sensitive uses within 250 feet of the project site, this impact is considered less *than significant*.

No mitigation is required.

Chapter 3.10

Public Services, Utilities, and Recreation

Introduction

This chapter provides a discussion of public service, utility, and recreation issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and field surveys; a summary of local, state, and federal policies and regulations related to other issues; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

Table 3.10-1 lists the impacts and mitigation measures for the Proposed Project. As shown in Table 3.10-1, the Proposed Project would have some significant adverse impacts related to public services and utilities within the project area. However, with the implementation of the mitigation measures described within this chapter, all of the impacts listed would be reduced to less-than-significant levels. The project would be designed in accordance with applicable fire code design standards to reduce the risk of damage and injury during fire emergencies. Likewise, construction and engineering coordination would be used to minimize utility disruptions during construction periods.

Table 3.10-1 Public Services and Utilities Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Fire and Police Services			
PSU-1: Increased Demand for Fire and First-Responder Emergency Medical Services	LTS	None Required	--
PSU-2: Increased Demand for Police Services	Potentially Significant	PSU-1: Ensure Adequate Police Funding	LTS
B. Emergency Access			
PSU-3: Interference with Emergency Access Routes or Adopted Emergency Access Plans	LTS	None Required	--
C. Wildland Fire Hazard			
PSU-4: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires	LTS	None Required	--
D. Water Demand			
PSU-5: Increased Water Supply Demand	LTS	None Required	--
E. Infrastructure Capacities			
PSU-6: Increased Demand for Water and Sewer Infrastructure	Potentially significant	PSU-2: Test Well Supply, Identify Water Treatment and Distribution Facilities, and Avoid Impacts on Biological Resources	LTS
F. Wastewater Treatment Capacity			
PSU-7: Increased Wastewater Treatment Capacity	LTS	None Required	--
G. Utility Disruption			
PSU-8: Construction Related Service Disruptions	Potentially Significant	PSU-3: Coordinate with Appropriate Utility Service Providers and Related Agencies to Reduce Service Interruptions	LTS
H. School Enrollments			
PSU-9: Increased Student Enrollments	LTS	None Required	--
I. Recreational Demand			
PSU-10: Increased Use of Existing Neighborhood and Regional Parks	LTS	None Required	--
J. Open Space			
PSU-11: Quality and Quantity of	LTS	None Required	--

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
Open Space Used for Recreation			
K. Landfill Capacity			
PSU-12: Increased Demand for Solid Waste, Green Waste, and Recycling Disposal Needs	LTS	None Required	--
LTS-less than significant, NI= No Impact			

Environmental Setting

The Rancho Cañada Village Specific Plan area includes approximately 81+ acres located in the mouth of the Carmel Valley just south of Carmel Valley Road. Carmel Valley is situated about 130 miles south of San Francisco, near the Cities of Carmel-by-the-Sea, Pacific Grove, and Monterey.

Existing Conditions

Table 3.10-2 Summary of Public Service, Utility, and Recreation Providers in the Project Area

Public Service or Utility	Service Provider
Wastewater	Carmel Area Wastewater District
Electricity and Natural Gas	Pacific Gas & Electric Company
Communication Services	AT&T
Solid waste	Monterey Regional Waste Management District
Education	Carmel Unified School District
Police	Monterey County Sheriff's Office
Fire	Cypress Fire Protection District
Parks	Monterey County Parks Department/ Monterey Peninsula Regional Park District / California State Parks

Communication Services

AT&T (newly merged with SBC) provides telecommunication and Internet services in Monterey County, while cable television services are provided by Comcast Cable. At this time no facilities exist to support either service in the project area, however these services are available immediately to the north and west of the Proposed Project site.

Electricity and Natural Gas

PG&E is the gas and electrical service provider that has been delivering energy to the Carmel Valley area for years. While service exists to the north and west of the project site, currently there are no existing gas mains or electrical distribution systems in place to serve the project area.

Schools

The Carmel Unified School District (CUSD) serves Carmel-by-the-Sea and the unincorporated areas of the Carmel Valley, including the project area. CUSD is comprised of three elementary schools (K–5th grade), one middle school (6th–8th grade), and one high school (9th –12th grade). In addition, CUSD provides one continuation high school, an adult school, and a child development center for district residents.

The following schools are expected to serve the Proposed Project:

- Carmel River Elementary School: Monte Verde and 15th Street, Carmel, Ca.
- Carmel Middle School: 4380 Carmel Valley Road, Carmel Valley Ca.
- Carmel High School: 3600 Ocean Avenue Carmel, Ca.

According to enrollment data from the Education Data Partnership, the Carmel School District has experienced a decrease in enrollment at a rate of 1.5% per year between 1997 and 2006 (ED Data 2007).

Fire Protection

The project area falls within the jurisdiction of the Cypress Fire Protection District (CFPD), which covers approximately 12 square miles of the Carmel Valley (Frost 2006). The District operates under contract agreement with the California Department of Forestry. CFPD responds to the fire and medical emergency needs in the Carmel Valley from the Rio Road and Carmel Hill Fire Stations. Staffing of these stations is comprised of two 4-person engine companies, 1 battalion chief, and approximately 20 volunteer/standby firefighters (Frost 2006). The Rio Road Fire Station, located at 3775 Rio Road, and would be the closest to the project area.

The CFPD strives to maintain a service response time standard of 5 minutes, and as of 2005 the average response time for emergency calls was less than 4 minutes (Frost 2006). The CFPD currently has an Insurance Services Office Class 4 rating (Class 1 represents the most protected, Class 10 the least). However, the Fire Captain expects that the ISO class rating will be reduced in the future due to a recent increase in personnel and current level of response (Frost 2006).

Parks / Open Space

Over 290,000 acres of land in Monterey County is devoted to park and recreational facilities operated by various agencies (MGP 1983). The Monterey County Parks Department maintains approximately 12,155 acres of those lands within 9 county regional parks (Donofrio pers. comm.). These county parks and freshwater recreation areas provide overnight and day-use recreational opportunities for county residents. The County has a park standard ratio of 7 acres per 10,000 residents included in its General Plan policies.

The Monterey Peninsula Regional Parks District manages 24 regional parks open spaces and preserves in the County totaling approximately 14,000 acres (Donofrio pers. comm.) Located adjacent to the project area, the 10,000-acre Palo Corona Ranch is the Regional Park District's newest regional park acquisition and is managed together with the Big Sur Land Trust. Since 2004, the Regional Parks District has relied on funding from yearly assessments from single-family dwellings in the County (MPRPD 2006).

Within the County, the State of California Parks Department operates 20 parks that total 17,567 acres. Major state recreational areas include the Carmel River State Beach, Point Lobos State Reserve, Garrapata State Park, Pfeiffer Big Sur State Park, and the Los Padres National Forest (California State Parks 2004). In addition, approximately 22 golf courses are located within Monterey County, including Rancho Cañada.

Police Services

The Monterey County Sheriff's Office (MCSO) currently provides law enforcement services in the unincorporated areas of the County, including the project area. The Sheriff's patrol district is broken into three regional response stations: Central (Salinas), Coastal (Monterey) and South County (King City). The Coastal station serves the unincorporated areas of the Monterey Peninsula, Carmel Valley, and 90 miles of the Big Sur coastline (MCSO website). The Coastal station is located at 1200 Aguajito Road in the City of Monterey. Twenty-two deputies operate out of this station, however, personnel from the Salinas and King City stations are available for additional assistance as needed. In addition, the Sheriff's Department includes a Community Field Office in Carmel Valley Village that is occasionally manned by deputies.

The three 'beat' areas that cover the Carmel Valley are, Beat 7, Beat 8A, and Beat 8B. Together these beats cover the area of Carmel Valley Road from Ocean Avenue east to the 38-mile marker past Laureles Grade. Each beat is manned at minimum with one deputy, with an extra two deputies patrolling the entire area between the hours of 10pm to 8am. Average response time for service calls in the Carmel Valley range area as follows: Beat 7 - twelve minutes; Beat 8A –sixteen minutes and; Beat 8B – nineteen minutes (Galletti pers. comm.). Beat 7 would cover the project area.

The California Highway Patrol provides traffic enforcement and accident investigation for Carmel Valley. The Sheriff's Department may also aid in traffic enforcement, however their primary function is to respond to criminal violations.

Solid Waste

Within the project area, solid waste pick up services are provided by Waste Management, Inc and transferred to the Monterey Peninsula Landfill and Recycling Facility. The landfill is owned and operated by the Monterey Regional Waste Management District (MRWMD), which serves the greater Monterey Peninsula area; a 853-square mile service area that includes the project area. The landfill is located 14201 Del Monte Boulevard, Marina, Ca. and is scheduled for closure in 2107. As of 2005, the facility has a remaining capacity of 40-million tons (74-million cubic yards) of additional solid waste (MRWMD 2005). In 2004, the landfill received 369,389 tons of solid waste and recycled or diverted 142,425 tons. Currently the facility is achieving the state mandated 50% diversion rate (Shedden 2006).

Local recycling is provided by the MRWMD at 12 locations throughout the service area. Closest to the project area is the Carmel Valley Transfer Facility located at 9 Pilot Road.

Wastewater (Sewer)

The Carmel Area Wastewater District (CAWD) provides wastewater collection, treatment and disposal services to the project area. An existing 12-inch sewer trunk line runs westerly, parallel, and about 60 feet north of the northern boundary line of the Proposed Project site.

CAWD wastewater treatment facility, located 1.2 miles west on SR 1, has a permitted average dry weather treatment capacity of 3-million gallons per day (mgd) and is currently operating at 1.8 mgd (Velie 2006). The CAWD facility is a tertiary plant that provides reclaimed water for landscape irrigation during the dry season, and when irrigation demand is low during the wet season, the treated effluent is discharged into the Pacific Ocean via an existing permitted outfall.

Water Supply

The California American Water Company (Cal-Am) is the water purveyor for the County. Under regulations set forth by the State Water Resources Control Board (SWRCB) and the Monterey Peninsula Water Management District, Cal-Am is restricted to producing approximately 15,285- acre feet per year (AFY) to serve the 112,000 customers residing in Monterey County, including the project area (Stern 2006). The water sources used by Cal-Am include the Carmel River Basin and the Seaside Basin. Together, they provide potable water supply for 95% of

people in the area. The remaining population is served by private wells not regulated by Cal-Am or the Water Management District (Stern 2006).

In 1995, the SWRCB found that Cal-Am did not have sufficient water rights for its existing water diversions from the Carmel River. SWRCB found that Cal-Am had rights to only 3,376 AFY. SWRCB ordered Cal-Am to do the following: reduce its diversion from the Carmel River to 14,106 AFY immediately; obtain appropriative permits for its diversions; obtain water from other sources to make 1:1 reductions in unlawful diversions; and/or contract with another agency having rights to divert and use water from the Carmel River. Cal-Am was also ordered to implement a water conservation plan to further reduce diversions to 11,990 AFY in 1996, and to 11,285 AFY in 1997 and subsequent years. SWRCB subsequently required Cal-Am to maintain a water conservation program with the goal of limiting annual diversions to 11,285 AFY until full compliance with the order was achieved (SWRCB 1995). Cal-Am exceeded the 11,285 AFY limit in Water Year 1997 and 2003. The Water Year 2003 exceedance of the limit was not subject to an enforcement action because some of the diversion amount was subject to exemption and the adjusted diversion amount is within the limit (SWRCB 2004).

SWRCB (in Decision 1632, as amended in Order WR 98-04) has also determined that the Carmel River is a "fully appropriated stream" from the mouth of the river upstream to the Sleepy Hollow Gage (RM 17.2) between May 1 through December 31 and that SWRCB has permit authority in this reach. Certain existing diversions present prior to Decision 1632 are allowed to apply for a permit to allow diversion between May and December; all other applicants must limit their diversions to between January and April.

The Rancho Cañada Golf Club has a series of five on-site wells that it presently uses to draw water for irrigation from the lower Carmel Valley aquifer. In the fall of 2002, the Monterey County Resource Management Agency – Planning Department retained Downey Brand LLP (Sacramento, CA) to perform an independent review of the water rights of September Ranch Development Application (PLN050001) to determine whether valid riparian rights exist. The analysis concluded that the riparian rights were not severed from the property. The Rancho Canada Village project site originates form the same chain of title of property formally owned by the Hatton Family. The Golf Club holds pre - 1914 and riparian water rights to the Camel Valley aquifer. As documented in Table 13 of Decision 1632, SWRCB also recognized that Rancho Cañada holds a superior water right to Cal-Am's water rights and SWRCB reserved 700 AF for appropriation to Rancho Cañada. The Golf Club wells have produced between 309 and 684 AFY over the past 20 years (see Table 3.10-3) for irrigation of the golf course (Lombardo 2006). Cal-Am also has a potable water supply well located on the golf course property.

Requests for new or additional water supply connections from Cal-Am are placed on waiting lists as Cal-Am, operating at maximum allowed capacity, is limited in the amount that they may draw from the basins. New supplies of water for Cal-Am will need to be found in order to meet the current and future demand for potable water in the County. Cal-Am has developed the Coastal Water Project as

a new water source for the County that would be reliant on desalination techniques. It is believed that this desalination plant would provide the necessary supply to meet current and future demand; however this project will not begin for at least four years (Stern 2006).

Table 3.10-3 Existing Rancho Cañada Golf Course Use

Year	Use	Per-Acre	Precip (WY)
RY1986	623.7	3.2	21.2
RY1987	683.9	3.5	12.1
RY1988	655.7	3.4	12.1
RY1989	512.1	2.6	15.3
RY1990	500.6	2.6	14.1
RY1991	358.4	1.8	13.9
RY1992	425.0	2.2	17.8
RY1993	440.5	2.3	30.1
RY1994	465.9	2.4	14.0
RY1995	337.6	1.7	28.4
RY1996	457.2	2.3	21.0
RY1997	499.8	2.6	21.7
RY1998	346.6	1.8	47.4
RY1999	309.4	1.6	20.1
RY2000	489.3	2.5	21.0
RY2001	430.8	2.2	19.2
WY2002	522.0	2.7	15.6
WY2003	451.9	2.3	18.4
WY2004	451.8	2.3	16.4
WY2005	379.4	1.9	30.5
Average	467.1	2.4	20.5
Reported Avg./Turf Acre	2.4		
Implied Acreage	194.7		

Source: Lombardo, T. (08/23/06, Exhibit A), based on MPWMD records (see below)

Notes: RY = Reporting Year = July 1 to June 30; WY = Water Year = October 1 through September 30. RY 1986 to 1990 calculated by power consumption correlation (PCC) method; RY 1991 and after calculated by water meter (WM) method. MPWMD Data sources: 1986- "PC Master List"; 1987 - "RY87SUM.XLS"; 1988 - "Power Consumption Master List"; 1989 - "Estimated Well Production for Medium and Large Water Users in the Carmel Valley Alluvial Aquifer"; 1990 - "Power" spreadshseet; 1991 to 2005 - "WMCALC" spreadsheets for each year. Precipitation from Table 2Weather Station #5795; (Hopkins Marine Station, No Date) Precip 1993- 2006 and avg. 51-03 from National Weather Service Climatological Station, Monterey, California 93940 (elevation 385 feet) (National Weather Service 2006).

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of the public service and utility issues of the Proposed Project being considered by Monterey County.

Federal Policies and Regulations

There are no federal regulations that effect public services and utilities.

State Policies and Regulations

California Integrated Waste Management Act

In 1989, Assembly Bill 939 (AB 939), known as the Integrated Waste Management Act, was passed into law. Enactment of AB 939 established the California Integrated Waste Management Board (CIWMB), and set forth aggressive solid waste diversion requirements. Under AB939, every city and county in California is required to reduce the volume of waste sent to landfills by 50 percent, through recycling, reuse, composting, and other means. AB 939 requires counties to prepare a Countywide Integrated Waste Management Plan (CIWMP). An adequate CIWMP contains a summary plan that includes goals and objectives, a summary of waste management issues and problems identified in the incorporated and unincorporated areas of the county, a summary of waste management programs and infrastructure, existing and proposed solid waste facilities, and an overview of specific steps that will be taken to achieve the goals outlined in the components of the CIWMP.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. CUPC is responsible for assuring California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy. CPUC establishes service standards and safety rules, and authorizes utility rate changes as well as enforcing the CEQA for utility construction. CPUC also regulates the relocation of power lines by public utilities under its jurisdiction, such as PG&E. CPUC works with other state and federal agencies in promoting water quality, environmental protection, and safety.

Local Policies and Regulations

Monterey County General Plan

The Monterey County General Plan (General Plan) was adopted by the Board of Supervisors in 1982 and is periodically amended. The General Plan provides general direction for future growth throughout the unincorporated areas of the County. The General Plan's objective is to promote balanced growth throughout the County in a manner that protects the County's natural resources. The following General Plan policies regarding public services and utilities are relevant to the project.

General Land Use

26.1.4: The County shall designate growth areas only where there is provision for an adequate level of services and facilities such as water, sewage, fire and police protection, transportation, and schools. Phasing of development shall be required as necessary in growth areas in order to provide a basis for long-range services and facilities planning.

26.1.4.3: A standard tentative subdivision map and/or vesting tentative and/or Preliminary Project Review Subdivision map application for either a standard or minor subdivision shall not be approved until

- the applicant provides evidence of assured long-term water supply in terms of yield and quality for all lots which are to be created through subdivision. A recommendation on the water supply shall be made to the decision making body by the County's Health Officer and the General Manager of the Water Resources Agency, or their respective designees
- the applicant provides proof that the water supply to serve the lots meets both the water quality and quantity standards as set forth in Title 22 of the California Code of Regulations and Chapters 15.04 and 15.08 of the Monterey County Code subject to review and recommendation by the County's Health Officer to the decision making body.

Residential

Goal 27: to encourage various types of residential development that are accessible to major employment centers and at locations and densities which allow for the provision of adequate public services and facilities.

Open Space

34.1.3. Wherever possible, open space lands provided as part of a development project should be integrated into an areawide open space network.

Carmel Valley Master Plan

The 1986 CVMP is a component of the 1982 General Plan. The major function of the CVMP is to guide the future development of the valley using goals and policies that reflect an understanding of the physical, cultural and environmental

setting of the area. The CVMP contains policies and regulations relevant to the Proposed Project.

Environmental Constraints (See Countywide General Plan)

17.4.1.1 (CV) The potential for wildland fires in the valley must be recognized in development proposals and adequate mitigation measures incorporated in the designs.

17.4.1.2 (CV) All proposed developments, including existing lots of record shall be evaluated by the appropriate fire district prior to the issuance of building permits. The recommendations of the fire district shall be given great weight and should, except for good cause shown, ordinarily be followed.

17.4.15 (CV) 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.

General Land Use (See Countywide General Plan)

26.1.22 (CV) Developed areas should be evaluated in light of resource constraints especially the water supply constraint addressed by policy 54.1.7 (CV) and the character of each area. No further development in such areas shall be considered until a need is demonstrated through public hearings.

Public Services and Facilities (See Countywide General Plan)

51.2.11 (CV) Active neighborhood recreation areas should be located at or within close access to the three development areas.

- All valley residents should have nearby access to hiking and riding trails and small neighborhood open areas or parks.
- Even though the Master Plan area contains two large regional parks, there should be constant consideration of the acquisition of additional areas. Land on the south side of the valley near the village is highly suitable for a mixture of active and passive uses, and should be seriously considered in conjunction with growth around the village area.

54.1.5 (CV) Development shall be limited to that which can be safely accommodated by on-site sewage disposal, or in the case of the Lower Valley, by the Carmel Sanitary District. Consideration may be given to package plants operated under supervision of a county service district.

54.1.6 (CV) When projects for low/moderate income owners or renters are proposed at densities exceeding those recommended by the wastewater application rates of the Wastewater Study, but not exceeding 40 grams/acre/day of total nitrogen, a detailed wastewater study acceptable to the Director of Environmental Health shall be required to determine whether the recommendations of the Wastewater Study should be relaxed or upheld, and the policies of the Basin Plan, Monterey County Code (Septic System Ordinance), and other applicable health requirements will be met.

Impact Analysis

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:

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. 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: Increased Demand for Fire and First-Responder Emergency Medical Services (Less than Significant)

The Proposed Project would increase demand for fire and first-responder emergency medical services. The current staffing, equipment, and facilities are adequate to provide acceptable service ratios and response times and are not

anticipated to change substantially with implementation of the Proposed Project (Frost 2006). The extension of Rio Road (gated or ungated) would provide a direct access route to the project area and would minimize fire and first-responder emergency services response times to the area. The automatic aid agreement with the City of Carmel, Pebble Beach Fire Station, and the Carmel Valley Fire Protection District also improve the ability to provide fire protection and first-responder medical emergency services to the Proposed Project area.

The project design must comply with all applicable building code standards as well as any additional County, CVMP, and local fire district policies related to fire and emergency response. Implementation of these standards would ensure that impacts would be *less than significant.*

Impact PSU-2: Increased Demand for Police Services (Less than Significant with Mitigation)

The Proposed Project would increase demand for police services by increasing the number of permanent residents in Carmel Valley, an unincorporated area of Monterey County. The project assumes a total population of 849 persons at buildout (see RCV Specific Plan, Appendix B).

The Monterey County Sheriff's Office requires each project applicant to satisfactorily comply with the Monterey County Public Safety and Security Guidelines, as well as with specific guidelines tailored to the project for both private and commercial development. Compliance with these guidelines would improve public safety and security of the Proposed Project.

The Monterey County Sheriff's Office strives to maintain a service standard of one deputy per 1,000 persons. The 2003 ratio of deputies per residents was 1:1,250 and the department has since lost 44.5 positions (Galetti pers. comm.). This coupled with the increasing population of the area may lead to delayed response times for service calls (Galletti pers. comm.).

The Monterey County Sheriff's Office has reviewed the impacts to the Sheriff's services that would be caused by this project and finds that these impacts would be *significant* (Galletti pers. comm.). This impact can be reduced to a *less-than-significant* level with implementation of the following mitigation measure.

Mitigation Measure PSU-1: Ensure Adequate Police Funding

The applicant and the Sheriff's Office shall develop a funding mechanism to ensure that adequate funding is available for police service within the Rancho Cañada Village area. This funding shall be sufficient to cover the cost of additional staff and associated equipment to meet this increased demand.

The Sheriff's Office has determined that the impact to police services can be mitigated through funding allocations made by the applicant. While no new facilities for police services would be required to meet the increased demand, these funds would be used to provide additional staff and associated equipment

required for adequate service. This determination is made based upon the recommendation contained in the County's draft General Plan Policy PS-22 and the Sheriff's Office standard of one (1) patrol officer per 1,000 population.

B. Emergency Access

Impact PSU-3: Interference with Emergency Access Routes or Adopted Emergency Access Plans (Less than Significant)

The area is currently a golf course and does not provide emergency access routes or trails for CFPD or the Sheriff's Department. Furthermore, the future residents of the proposed development would have 2 separate access/exit routes available in the event of an emergency.

The most common event requiring evacuation in the extended project area is the periodical flooding of the Carmel River. The residential site would be located above the 100-year flood zone, and thus would be unaffected during evacuations of this nature. In addition, risk of fire is low (see Impact PSU-4 below) in the area surrounding the project site. However, if a 500-year flood event should occur, the Carmel Valley Road and Rio Road exits would suffice to serve area residents during evacuation. Thus, the Proposed Project would have a *less-than-significant* impact on adopted emergency response or evacuation plans. No mitigation is required.

C. Wildland Fire Hazard

Impact PSU-4: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires (Less than Significant)

The Proposed Project would be situated in an area that is currently developed as a golf course. The general area encompassing the project site is not located in a Very High Fire Hazard Severity Zone according to the California Department of Forestry and Fire Protection (CDF 2005). Development exists to the west and east of the parcel and a major road bounds the northern portion. To the south runs the Carmel River and beyond that exists the Palo Corona Ranch open space. The MPRPD and Big Sur Land Trust have recently acquired the open space area and portions of it are expected to be developed for public recreation. In addition, the habitat preserve and nature trails incorporated into the project design would provide a buffer zone along the north bank of the Carmel River separating the housing development from the open space.

While the Proposed Project would be located across the river from an open space area, it would not significantly increase the risk of loss, injury, or death involving

people or structures resulting from wildfires. This impact is considered to be *less than significant.* No mitigation is required.

D. Water Demand

Impact PSU-5: Increased Water Supply Demand (Less than Significant)

In order to assess water supply impacts, an existing use baseline must be established. The existing golf courses use between 309 and 684 AFY for irrigation, with an average use of 467 AFY, and an average per-acre use of 2.4 AFY. The 81-acre project site contains 57 acres of irrigated golf course. Thus, the existing average use on the project site would be about 138 AFY. Use will vary depending on climatic factors and is estimated to range from 110 to 201 AFY, depending on precipitation (See Table 3.10-4). Most irrigation occurs during the drier parts of the year (April through October) and thus a large portion of the irrigation on the golf course (likely in excess of 80%) is consumed by the golf turf through evaporation and transpiration (referred to as evapotranspiration). A portion of the remainder will runoff the course and the remainder is recharged into the Carmel Valley aquifer. As described in Section 3.2, *Hydrology and Water Quality*, current recharge to the aquifer is estimated as approximately 35 acre feet. This recharge could be reused for irrigation again, and thus is not considered part of the baseline use. Subtracting recharge, the baseline use is estimated as ranging from 82 to 149 AFY, with an average use of 103 AFY (See Table 3.10-4).

Table 3.10-4 Baseline Water Use on Rancho Cañada Specific Plan Site (Acre-Feet)

		Average Year	Wet Year (80% avg.)	Dry Year (110% avg.)	Very Dry Year (150% avg.)
Irrigation per acre		2.4	1.9	2.6	3.5
Irrigated acres	57.40	137.7	110.2	151.5	200.9
Recharge	See Section 3.2	-34.9	-27.9	-38.4	-52.4
Baseline Use		102.8	82.2	113.1	148.6

Notes:

Baseline use is assumed not to include recharge since these flows are returned to Carmel Valley aquifer. Recharge for wet, dry, and very dry years adjusted by assumed percentage of average year. Very dry year based on RY 1987 water usage when precipitation was 12.1 inches (compared to 20.5 inch average between 1986 and 2005)

The applicant's estimate of the Proposed Project average annual water demand is approximately 97 AFY including assumed treatment loss of 15% and system

transmission loss of 7% (see Table 3.10-5a). Jones & Stokes prepared a demand estimate using MPWMD water use factors and more conservative use assumptions (see Tables 3.10-5a and b, and 3.10-6) that estimates average project demand as 120 AFY including treatment and system transmission losses. The Jones & Stokes estimate was used for the EIR analysis. As described in Section 3.2, Hydrology and Water Quality, with-project recharge to the aquifer is estimated to be 33 AFY. In order to make a fair comparison to baseline use, this recharge amount is subtracted from the estimated average project demand to result in an estimated average project use of 87 AFY. Accounting for precipitation variation, project use is estimated to range from 70 to 131 AFY (see Table 3.10-5b).

Table 3.10-5a. Rancho Cañada Village Estimated Water Demand (by Applicant)

	Units	AF/Unit	Total
Housing			
Condominiums	35	0.15	5.3
Townhouses	64	0.17	10.9
Small Lot Single Family	67	0.21	14.1
Medium Lot Single Family	114	0.21	23.9
Large Lot Single Family	1	0.21	0.2
Housing Subtotal	*281*		*54.4*
Active Park	2.6	2.5	6.5
Landscape Parkways	3.3	2.5	8.3
Retained golf course	4.4	2.4	10.6
Direct Water Demand			**79.7**
Treatment (15%) and System (7%) Loss			*17.5*
Total Water Demand			**97.2**

Source: Rancho Cañada Specific Plan (Appendix B), adjusted to add treatment and system losses.

Table 3.10-5b. Rancho Cañada Village Estimated Water Demand/Use (by Jones & Stokes)

	Units	AF/Unit	Total
Housing			
Condominiums	35	0.17	6.0
Townhouses	64	0.20	12.9
Small Lot Single Family	67	0.27	18.2
Medium Lot Single Family	114	0.32	36.1
Large Lot Single Family	1	0.49	0.5
Housing Subtotal	*281*		*73.6*
Active Park	2.6	2.5	6.5
Landscape Parkways	3.3	2.5	8.3
Retained golf course	4.4	2.4	10.6
Landscape Subtotal			*25.3*
Average Year Direct Water Demand			**98.9**
Treatment (15%) and System (7%) Loss			*21.8*
Total Water Demand			**120.7**
Recharge Adjustment (See Section 3.2)			*-33.2*
Average Year Net Water Use			**87.5**
Wet Year (80% of avg.)			*70.0*
Dry Year (110% of avg.)			*96.2*
Very Dry Year (150% of avg.)			*131.2*

Note: Recharge adjustment based on Balance Hydrologics 2005.

Based on these estimates, there would be a net reduction in water use ranging from 12 to 17 AFY, with an average of 15 AFY (see Table 3.10-7). This estimate is based on conservative assumptions for demand, treatment and system losses, and may understate the amount of the net reductions. Further, the same percentage adjustments were made to the baseline use case for golf course irrigation for wet, dry, and very dry years as for the project residential demand. Residential demand, particularly for the proposed residential development which has relatively compact development and limited yards would vary far less than golf course irrigation and thus, in dry and very dry years, the estimated project demand is likely higher than it will actually be.

Given the existing impact of Cal-Am withdrawals on the Carmel River, this net reduction is a beneficial impact for both water supply and for biological resources in the river, such as steelhead. In addition, wastewater would be

conveyed to the Carmel Area Wastewater District's (CAWD) water recycling plant for eventual release into the Carmel Valley Lagoon. Presently, during the summer and fall months the lagoon waters are at critically low levels, which jeopardize the lagoon's steelhead populations. With additional wastewater flows, such as those from the Rancho Cañada Village project, CAWD would have increased opportunity to release more wastewater. Therefore, the project would provide environmental benefits to the steelhead habitat.

Table 3.10-7 Rancho Cañada Village Water Impact (Acre-Feet)

	Baseline Use	Project Use	Net Change
Average Year	102.8	87.5	-15.3
Wet Year	82.2	70.0	-12.3
Dry Year	113.1	96.2	-16.8
Very Dry Year	148.6	131.2	-17.3

Note: As noted above, this assessment is dependent on the assessment of recharge for both the baseline and project use. This estimate is based on conservative assumptions described in text and may underestimate the amount of net reduction.

The water source for the Project would be the on-site wells using water rights held by the property as described above or a connection to Cal-Am facilitated by dedication of an appropriate amount of the applicant's water right to Cal-Am. The state has reserved 700 AFY for allocation to the Rancho Cañada property, which exceeds the amount needed for golf course irrigation and the project.

Water for the new homes would be supplied either through the Cal-Am distribution system by assigning a portion of Rancho Cañada's water rights to Cal-Am for delivery back to the development, or though the creation of independent community services (private or public), contract or dedication to use the existing Rancho Cañada wells to pump, treat, and purvey the amount of water necessary for the project. Reduction in water use would be documented through the meters on the wells which are already in place as required by ordinance with MPWMD (Lombardo 2006).

Because the Proposed Project would result in an overall reduction in water use, this impact is considered *less than significant*. No mitigation is necessary. Infrastructure impacts related to a potential new water system are discussed below separately.

It is recommended that the County, as a condition of approval, require a permanent dedication of 131 AF of the applicant's water right that reserves its use solely for the Rancho Cañada Village residential development (including the park and preserve) and precludes any future use of this amount by the applicant for golf course irrigation, other use, or transfer. This amount is based on the estimated net demand during a very dry year indicated in Table 3.10-7. It is

Table 3.10-6 Water Demand by Housing Type

		Condo		Townhouse		SFR- Small		SFR-Medium		SFR-Large	
	FU Value	No.	FU Count	No.	FU Count	No.	FU Count	No.	FU Count	No.	FU Count
Wash Basins (lavatory sink) each	1	2	2.0	2	2.0	3	3.0	3	3.0	4	4.0
Two washbasins in Master Bathroom	1									1	1.0
Toilet (ULF, 1.6 gpf)	1.7	2	3.4	2	3.4	3	5.1	3	5.1	4	6.8
Toilet (ULF, 1.0 gpf)	1.3										
Toilet (ULF, 0.5 gpf)	1										
Masterbath (Tub, sep. shower)	3		0.0		0.0		0.0	1	3.0	1	3.0
Large bathtub (w/ showerhead)	3									1	
Standard bathtub (w/ showerhead)	2	1	2.0	2	4.0	2	4.0	2	4.0	2	4.0
Shower, separate stall	2		0.0		0.0		0.0		0.0		0.0
Kitchen sink and dishwasher	2	1	2.0	1	2.0	1	2.0	1	2.0	2	4.0
Kitchen sink and UL dishwasher	1.5										
Laundry/utility sink	2		0.0		0.0	1	2.0	1	2.0	2	4.0
Washing Machine	2	1	2.0	1	2.0	1	2.0	1	2.0	1	2.0
Washing Machine (UL, 18 gpc)	1										
Washing Machine (UL, 28 gpc)	1.5										
Bidet	2		0.0		0.0		0.0		0.0		0.0
Bar sink	1		0.0		0.0		0.0		0.0		0.0
Entertainment sink	1									1	1.0
Vegetable sink	1		0.0		0.0		0.0		0.0		0.0
Subtotal Interior Fixture Units			*11.4*		*13.4*		*18.1*		*21.1*		*29.8*
Landscaping (Interior FUs X 0.5)			*5.7*		*6.7*		*9.1*		*10.6*		*14.9*
Swimming Pools (per 100 SF)	1		0.0		0.0		0.0		0.0	4.5	4.5

		Condo		Townhouse		SFR- Small		SFR-Medium		SFR-Large	
	FU Value	No.	FU Count	No.	FU Count	No.	FU Count	No.	FU Count	No.	FU Count
Fixture Unit Count			*17.1*		*20.1*		*27.2*		*31.7*		*49.2*
Acre-Feet/Unit (0.01 AF/FU)			**0.17**		**0.20**		**0.27**		**0.32**		**0.49**

Notes:

Prepared by Jones & Stokes using MPWMD Fixture Unit Methodology.
All Assumptions by Jones & Stokes

further recommended that the County, as a condition of approval, require monthly reporting of water use on the golf course to verify that water use does not exceed the estimated remaining amount of the applicant's water right (569 AF).

E. Infrastructure Capacities

Impact PSU-6: Increased Demand for Water and Sewer Infrastructure (Less than Significant with Mitigation)

The Proposed Project would increase demand for sewer capacity. This increase in demand can be met by existing sewer lines and treatment facilities (see discussion under Impact PSU-7 below). The Proposed Project would add additional lines to existing infrastructure. Impacts on an increased demand for sewer capacity are *less than significant* and no mitigation is required.

As described above in Impact PSU-5, water for the new homes would be supplied either through the Cal-Am distribution system or though the creation of independent community services (public or private), contract, or dedication to use the existing Rancho Cañada wells to pump, treat, and purvey the amount of water necessary for the project. The applicant was requested to test existing well water for suitability for use as a potable water supply but testing data has not been provided to the County to date. Further, the applicant was requested to describe potential treatment methods and facilities and pipeline routing from the existing wells to supply the proposed project, but such information has not been provided. The applicant has identified the location of the treatment facilities as within the 2 acre park, and the wells are on-site so the pipeline routing would likely be across the golf course and through the residential development. While treatment facilities are likely to be necessary, the extent of the treatment facilities is likely limited in character and size and would not substantially change the character of the park facility, increase the footprint of disturbance, or be particularly noticeable.

It is probable that the existing wells would provide suitable potable water because Cal-Am utilizes a potable water supply well on the golf course and the water from the applicant's wells is likely to be of similar quality to the Cal-Am well. However, groundwater withdrawals for water supply in the lower portion of the Carmel River basin must be treated for iron and manganese prior to distribution (EIP Associates 1993). Thus, it is expected that some treatment facilities may be necessary as well as pipelines and pumping to transport treated water to the residential area. This is considered a *significant* impact. Implementation of the following mitigation would reduce this impact to a *less than significant* level:

Mitigation Measure PSU-2: Test Well Supply, Identify Water Treatment and Distribution Facilities, and Avoid Impacts on Biological Resources

The applicant shall test the proposed water supply for the project for California Title 22 constituents for potable water supply and shall design and fund any necessary treatment and distribution facilities needed to transport treated water to the project site. Testing results shall be provided to the County. The design for the new facilities shall be submitted to Monterey County for review and approval. The new facilities can be placed within the existing golf course and/or other non-habitat disturbed areas (such as existing roads or golf paths). Under no circumstances shall the new facilities result in permanent loss of native vegetation, ponds, or wetlands. All biological mitigation described for the project will apply to any potential impacts of new facilities. No grading for the proposed project shall be allowed until the new facilities have been approved by Monterey County and all biological resource mitigation has been approved by the County, USFWS, and CDFG. The applicant shall be required to fund all necessary improvements. This mitigation also applies to any new facilities required if the project utilizes a connection to the Cal-Am distribution system.

F. Wastewater Treatment

Impact PSU-7: Increased Wastewater Treatment Capacities (Less than Significant)

The Proposed Project would increase wastewater flows to the CAWD treatment facility. A 12-inch sanitary sewer trunk exists adjacent to the project area from which additional connections would be made to serve the project area. Increased wastewater flow from the residential development is estimated to range from an average dry weather flow of 84,900 gpd, up to a peak wet weather flow of 280,170 gpd (see RCV Specific Plan Appendix B). Currently, the CAWD treatment plant is operating at 40% below permitted capacity.

Increased flows resulting from the Proposed Project would not exceed the CAWD treatment facility's permitted facility or substantially decrease the ability of the plant to treat existing flows (Velie 2006). Thus, the treatment of this increased capacity is considered to be *less than significant*. No mitigation is required.

G. Utility Disruption During Construction

Impact PSU-8: Construction-Related Service Disruptions (Less than Significant with Mitigation)

Much of the water and sewage infrastructure is in place nearby. Sewer line connections would occur along the main trunk to efficiently serve the development. New water facilities may be required to supply the required fire protection and water pressure for homeowner use. However, this would not affect

water service to other areas because the water supply originates from an onsite well. Furthermore, new utility connections for power and communications would be necessary to serve the development.

Project development, installation of the infrastructure noted above, and road improvements could disrupt existing utility lines. This impact is considered potentially *significant* but would be reduced to a *less-than-significant* level with the implementation of the following mitigation measure.

Mitigation Measure PSU-3: Coordinate with Appropriate Utility Service Providers and Related Agencies to Reduce Service Interruptions

The applicant would coordinate with the appropriate utility service providers and related agencies to reduce service interruptions. This coordination would include the following:

- The applicant would contact the Underground Service Alert (800/642-2444) at least 48 hours before excavation work begins to verify the nature and location of existing underground utilities. The applicant would also notify all public and private utility owners at least 48 hours prior to the commencement of work adjacent to any existing utility, unless the excavation permit specifies otherwise.
- The applicant would coordinate with the remaining sections of the Rancho Cañada Golf Club and the CFPD to minimize or eliminate potential water interruption. Such coordination efforts may include requiring the construction contractor to "hot-tap" existing water lines for new waterline connections when possible to maintain service of existing water lines, and isolate construction areas and back feed water through alternate lines to provide continuous use.
- The applicant would coordinate with CAWD 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 portable pipeline that connects to unaffected sewage lines.

H. School Enrollments

Impact PSU-9: Increased Student Enrollments (Less than Significant)

The Proposed Project could potentially increase student enrollments within the Carmel Unified School District. A conservative multiplying factor of 0.18 students per household was used to determine the potential increase of school-age children attending public schools. Using the estimated build-out population projected within the Specific Plan (Appendix B), approximately 51 school-aged children would be generated from the Proposed Project. The introduction of new students would result in placing further demands upon school services. However,

because CUSD has been experiencing a decline in enrollment, additional facilities would not be required to accommodate an increase of 51 students. This impact is *less than significant*. No further mitigation is necessary.

I. Recreational Demand

Impact PSU-10: Increased Use of Existing Neighborhood and Regional Parks (Less than Significant)

The Proposed Project would result in an increase of approximately 849 residents in the Carmel Valley area. The Monterey County standard for provision of regional parkland is 7 acres per 10,000 residents, or 0.0007 acres per person. The total number of County and Regional Park lands available to the public is approximately 392,192 acres. Based on the U.S. Census' 2005 Monterey County population estimate, the current ratio of parkland per resident is nearly 0.95acres/person, which indicates that the County is not only meeting, but greatly exceeding it's parkland standard. At buildout, the Proposed Project would increase demand for parkland by a total of 0.59 acres. Implementation of the Proposed Project would bring the ratio of parkland per resident to 0.949:1, which would result in a negligible impact on the existing demand on County and regional parks.

The increased population would also create a small increase in demand for active recreation facilities. Although, implementation of the Proposed Project would require the removal of one golf course, 22 golfing facilities would still be available, including the east course of the Rancho Cañada Golf Club.

In accordance with County Subdivision Ordinances and the Quimby Act, the Proposed Project is required to provide 2.44 acres of park area. The Development Plan for the project provides 2.50 acres of land for two neighborhood parks, 0.4 acres of open space, and 31 acres of habitat preserve land in the Rancho Cañada Village. Each park will provide passive recreational opportunities for residents and visitors to the Rancho Cañada Village. In addition, a network of paths and trails would be constructed into the natural habitat preserve, which would connect into the Carmel Valley Trail System's planned regional trail system. The project design is such that each resident of the development is within a 5 minute (0.25 mile) of a park or the habitat preserve area.

This parkland design feature, in conjunction with the ample County and regional parkland currently available to residents, is sufficient to offset increased demand associated with the Proposed Project. In fact, the Proposed Project would result in an increase of the ratio of parkland per resident with the creation of 39 acres of additional recreational area. Thus, the Proposed Project is not anticipated to create or accelerate substantial physical deterioration of existing facilities or create a demand for new facilities beyond that included in the project design. Impacts would be *less than significant*. No mitigation is required.

J. Open Space

Impact PSU-11: Quality and Quantity of Open Space Used for Recreation (Less than Significant)

The Proposed Project would increase the current quantity of open space in the Carmel Valley area by dedicating 31 acres for habitat conservation, 2.44 acres for neighborhood parkland, and 0.4 acres of open space. The proposed trail network would accommodate increased recreational accessibility within or adjacent to open space areas as well as provide connections to a larger regional trail system. The Proposed Project includes resource management components that would preserve and enhance the quality of the land planned for open space. The maintenance and preservation of the proposed open space would also help to enhance and protect open space that exists adjacent to the project area, near the ecologically sensitive Carmel River. This action will offset the loss of golf course open space and thus the impacts to the quantity and quality of open space would *be less than significant*. No mitigation is required.

The biological impacts of the Proposed Project are discussed in Chapter 3.3, *Biological Resources*.

K. Landfill Capacity

Impact PSU-12: Increased Demand for Solid Waste, Green Waste, and Recycling Disposal Needs (Less than Significant)

The Proposed Project would increase the number of residents in the unincorporated Monterey County area. These residents would generate an increased demand for solid waste, green waste, and recycling disposal needs. Based on an average of waste generation rates provided by the California Integrated Waste Management Board (CIWMB 2005), the new residential uses would generate approximately 154 tons of solid waste per year. Additionally, construction activities related to the Proposed Project would temporarily generate a substantial amount of solid waste.

MRWMD is currently disposing of approximately 622-tons of waste per day at the facility, which is substantially below the maximum permitted disposal of 3,500-tons per day (MRWMD 2005). The use of green waste and recycling containers for residential and commercial collection has greatly contributed to reducing the total amount of waste disposed at the landfill. According to the MRWMD, waste produced by the implementation of the Proposed Project would have a negligible impact on the lifespan and operational aspects of the landfill (Shedden 2006).

The Proposed Project would comply with the Chapter 10.41 Monterey County Code of Ordinances, which requires residences to separate recyclables from solid waste and store trash in approved containers for weekly removal.

Increased solid waste, green waste, and recycling needs resulting from the Proposed Project can be accommodated by the existing disposal services and facilities and, therefore, impacts would be *less than significant*. No mitigation is necessary.

Chapter 3.11

Cultural Resources

Introduction

This chapter provides a discussion of the cultural resources related to construction of the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and previously conducted archaeological investigations; a summary of local, state, and regulations related to cultural resources; and an analysis of direct and indirect environmental impacts of the project. Where feasible, mitigation measures are recommended to reduce the level of impacts. All analysis for potential impacts on cultural resources is based on the cultural resources investigations conducted by Archaeological Consulting in 2003 and 2005 (Breschini 2003, 2005).

Impact Summary

Based on the cultural resources investigations conducted by Archaeological Consulting, no cultural resources have been identified within the Proposed Project area that would be impacted by the project. However, there remains the potential for the presence of buried resources that could not be identified during archival research and field survey as the nature and location of the project suggest that it is sensitive for prehistoric archaeological deposits. Table 3.11-1, provides a summary of the potential cultural resource impacts of the proposed Rancho Cañada Village Specific Plan project.

Table 3.11-1 Cultural Resources Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Historical Resources			
CR-1: Demolition, Destruction, Relocation, or Alteration of Historical Resources	LTS	None Required	—
B., C., and D. Archaeological Resources, Human Remains, and Paleontological Resources			
CR-2: Ground Disturbing Activities, Such As Grading, Trenching, or Excavation	Potentially Significant	CR-1: Archaeological Resources-Stop Work if Buried Cultural Deposits are Encountered During Construction Activities CR-2: Archaeological Monitoring During Ground Disturbing Activities Within the Project Area During Construction CR-3: Archaeological Resources-Stop Work if Human Remains are Encountered During Construction Activities CR-4: Paleontological Resources-Stop Work if Vertebrate Remains are Encountered During Construction	LTS
CR-3: Erosion or Usage of the Project Area That Could Expose Buried Archaeological Resources Due to Long-Term Use of the Area	Potentially Significant	CR-5: Consult With a Qualified Archaeologist to Identify Resources and Assess Impacts	LTS

LTS= Less-than-Significant

Environmental Setting

Methodology

Literature Reviewed

The following literature was reviewed for analysis of cultural resources found in the Proposed Project area:

- 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.

Prehistoric Context

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 likely 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 southern Bay Area 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 AD 500, 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 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). The specific project study area was likely used by the Taunan subgroup of the Ohlone (along with other groups in the region) who occupied the hilly regions around Alameda Creek and Arroyo del Valle, south of Livermore Valley (Milliken 1995).

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 near the Proposed Project area, and many are active in maintaining their traditions and advocating for Native American issues.

Historic Context

Monterey Bay was the focus of several Spanish exploratory expeditions after it was first noticed by Juan Cabrillo in 1542. 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 new ranchos developed on 68 Mexican land grants. An agrarian economy emerged, based on cattle ranching on large ranchos. This economy received a boost when the Mexican regime 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 continued to play a key role after the Americans 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. 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 train 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. In Carmel, the Arts and Crafts movement

took hold in local architecture as the town became 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 and Associates 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 and Associates 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 and Associates 2006).

Existing Conditions

The project area consists of 81+ acres of the Rancho Cañada Golf Club in Carmel, Monterey County. Based upon a site inspection and review of historic topographic maps and aerial photographs, this facility appears to date from circa 1970 (ENGEO 2006). Only two structures were found to exist within the project area. These appear to be limited to a 1970s Spanish Colonial/Mission Revival restroom, and the concrete monument sign at the entrance to the facility. Expressing the Spanish Colonial/Mission Revival theme conveyed by the restroom building, the wall sign features mission tile coping and individual plastic Old English-style (medieval style) signage lettering. Portions of the project area have been planted with grass turf for use as a golf course, while the remaining areas of the project area feature both introduced ornamental trees and plants (viz., cypresses, pines, and palms) as well as clusters of native plants, such as willows, oaks, and scrub.

Within entire Monterey County, 12 fossil sites were identified as having outstanding scientific value. The fossils at these 12 sites generally reflect the type of assemblages found throughout the county (microorganisms or invertebrates); however, they also possess special characteristics that make them unique or rare, or in some way provide important stratigraphic or historic information. However, the project site is not in the general vicinity of any of the 12 significant fossil sites. (Brandman and Associates 2006)

Regulatory Setting

This section discusses the local, state, and federal policies and regulations that are relevant to the analysis of cultural resources in the Proposed Project area being considered by Monterey County.

State Policies and 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.
2. Evaluate the significance of the resources.
3. Evaluate the effects of the project on significant resources.
4. 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 California Register of Historical Resources (CRHR).
- The resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code (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 (California Code of Regulations [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]).

Impact Analysis

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:

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 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.

Assessment Methodology

To assess potential impacts of the Proposed Project on cultural resources, the results of the previous cultural resources investigations conducted by Archaeological Consulting (2003, 2005) were reviewed in detail. Archaeological Consulting conducted archival research at the Northwest Information Center in Sonoma County, conducted field survey, and prepared reports. In addition, Jones & Stokes reviewed project maps and the surrounding topography to independently assess the sensitivity for the presence of cultural resources within the project area.

Impacts and Mitigation Measures

A. Historical Resources

Impact CR-1: Demolition, Destruction, Relocation, or Alteration of Historical Resources (Less-than-Significant)

Implementation of the Proposed Project would require that the two structures that currently exist within the project area be removed; a restroom, and the concrete monument sign at the entrance to the facility. However, neither the built features nor the designed landscape features appear to be historic resources for the purposes of CEQA or NEPA. The features found within the project area are less than 50 years old, are not associated with significant persons or patterns and events of history. Nor does the property exhibit distinctive characteristics or high artistic values that would indicate that it is the work of a significant builder or landscape designer. This impact is considered to be *less than significant* and would not require mitigation.

B, C and D. Archaeological Resources, Human Remains, and Paleontological Resources

Impact CR-2: Ground Disturbing Activities, Such As Grading, Trenching, or Excavation (Less than Significant with Mitigation)

Ground disturbing activities have the potential to adversely affect unknown archaeological or paleontological resources, including the discovery of human remains. While no known buried resources will be impacted by the Proposed Project, there is always the possibility that previously unrecorded sites will be disturbed during construction. This is considered a *potentially significant* impact but would be reduced to a *less-than-significant* level with implementation of the following mitigation measures.

Mitigation Measure CR-1: 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 project proponent will be responsible for ensuring that treatment measures are implemented, in accordance with the archaeologist's recommendations.

Mitigation Measure CR-2: Archaeological Monitoring During Ground Disturbing Activities Within the 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 on buried deposits if present.

Mitigation Measure CR-3: 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-4: 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 project proponent will be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

Impact CR-3: Erosion or Usage of the Project Area That Could Expose Buried Archaeological Resources Due to Long-Term Use of the Area (Less than Significant with Mitigation)

Long-term use of the area could result in the exposure of buried archaeological resources that were not visible or uncovered during archaeological survey, or construction of the 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 project. This is considered a *potentially significant* impact but would be reduced to a *less-than-significant level* with implementation of the following mitigation measures.

Mitigation Measure CR-5: Consult With a Qualified Archaeologist to Identify Resources and Assess Impacts

If archaeological resources are uncovered as a result of long-term use of the project area, resulting from the implementation of the project, the project proponent would 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.

Chapter 3.12

Population and Housing

Introduction

This chapter provides a discussion of the population and housing issues related to the proposed Rancho Cañada Village Specific Plan in the Carmel Valley. This chapter includes a review of existing conditions based on available literature and a summary of local, state, and federal policies and regulations related to population and housing. Analyses of the environmental impacts of the Proposed Project are discussed, and where feasible, mitigation measures are recommended to reduce the level of impacts.

Impact Summary

Table 3.12-1 provides a summary of the potential population and housing impacts of the proposed Rancho Cañada Village project. As shown in Table 3.12-1, the Proposed Project would have some significant adverse impacts related to population and housing within the project area. However, with implementation of the mitigation measures described within this section, all of the impacts listed would be reduced to less-than-significant levels.

Table 3.12-1 Population and Housing Impact Summary

Impact	Level of Significance	Mitigation Measure	Level of Significance after Mitigation
A. Induce Population Growth			
POP-1: Induce Substantial Population Growth	LTS	None Required	_
B. Cause Displacement of People or Housing			
POP-2: Displacement of Existing Housing or Population	LTS	None Required	_

LTS= Less than Significant

Environmental Setting

Population Trends

According to the U.S. Census, the total population of Monterey County was 401,762 for the year 2000, a 13% increase from the 1990 Census. The project site is located within Census Tract[1] (CT) 116, which had a population of 7,349, accounting for approximately 2% of the total County population in the year 2000 (U.S. Census 2000a). Table 3.12-2 shows population numbers for 2000 and projected population for 2030 based on U.S. Census and AMBAG projection data for the County, Carmel Valley Village[2], Carmel Valley[3], Carmel-by-the-Sea, and CT 116.

CT 116 experienced a 5% growth in population between the 1990 and 2000. The only area that did not experience growth was Carmel-by-the-Sea, which saw a 3.7% decrease in population and is expected to continue to decrease (AMBAG 2004).

Table 3.12-2 Population Trends in Monterey County by Area

Area	Population, 1990	Population, 2000	Population, 2015 estimate	Population, 2030 estimate
Monterey County	355,660	401,762	412,104	602,731
Census Tract 116	6,892	7,349	--	--
Carmel-by-the-Sea	4,239	4,081	3,924	3,945
Carmel Valley Village CDP (Census Designated Place)	4,407	4,700	--	--
Carmel Valley CCD	5,559	6,281	--	--
Unincorporated Monterey County	94,254	100,252	114,776	135,375

Sources: AMBAG projections data, 2004. U.S. Census 2000a U.S. Census 1990

[1] A Census Tract is a small, relatively permanent subdivision of a county. The boundaries of a CT may follow either visible features, governmental unit features, or other non-visible features. A Census Tract is designed to be a relatively homogenous unit with respect to population characteristics, economic status, and living conditions (U.S Census Bureau).

[2] Carmel Valley Village CDP is a census-designated place. A CDP is a "closely settled, named, unincorporated communit[y] that … contain[s] a mixture of residential, commercial, and retail areas similar to those found in incorporated places of similar sizes" (U.S. Census Bureau).

[3] Carmel Valley CCD is a census county division. A CCD is a "geographic statistical subdivision of [a] count[y] established cooperatively by the Census Bureau and officials of state and local governments," created in order to "establish and maintain a set of subcounty units that have stable boundaries and recognizable names" (U.S. Census Bureau).

Between 2000 and 2030, the population of the County as a whole 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 2000, approximately 40% of the population in Monterey County identified themselves as "white." Approximately 46% identified themselves as "Hispanic or Latino" of any race. Table 3.12-3 shows percentage of population in Monterey County by race and actual numbers for 2000 from the U.S. Census 2000.

Table 3.12-3 Race Characteristics of Monterey County

Race	Population, 2000	Percentage, 2000
Hispanic or Latino (of any race)	187,969	46.8%
Not Hispanic or Latino	213,793	53.2%
White	162,045	40.3%
Black or African American	14,085	3.5%
American Indian and Alaska Native	1,782	0.4%
Asian	23,203	5.7%
Native Hawaiian and Other Pacific Islander	1,543	0.4%
Some other race	1,190	0.3%
Two or more races	9,945	2.5%
Total population	**401,762**	**--**

Source: U.S. Census Bureau 2000b.

Employment and Income

Between 2000 and 2007, an estimated 16,346 new jobs will be created within the County (Monterey County 2003). While this represents an 8% increase over seven years, nearly 67% of these new jobs are considered to be 'low wage' service and retail sector employment (Monterey County 2003). In fact, nearly 28% of the projected new jobs are expected to have an annual wage of less than $20,000 (Monterey County 2003).

Data from the 2003 Housing Element indicates that 41% of households within unincorporated Monterey County were considered to be low or very low income[4] (Monterey County 2003). Table 3.12-4 describes the income and poverty status of the greater project area.

[4] Very low income = households at or below 50% of areawide median income. Low income households are those that are between 51 and 80% of the areawide median income.

Table 3.12-4 Income Characteristics in 2000

Geographic Area	Median Household Income	Percentage at or below poverty
County of Monterey	$48,305	13.5%
Census Tract 116	$65,424	4.3%
Carmel Valley Village	$70,799	3.9%
Carmel Valley	$70,313	4.3%
Carmel-by-the-Sea	$58,163	6.6%

Source: U.S. Census 2000c Census 2000d

In 2000, the median household income for Monterey County was slightly above the statewide median during the same time (U.S. Census 2000c). Within CT 116, the median household income was approximately 35 percent greater than the countywide median.

According to state and federal definitions, a household is considered to be overpaying for housing when they spend more than 30% of their annual income on housing costs. In 2000, approximately 36% of all households within the County were overpaying for housing. The percentage of households overpaying significantly increased with those making less than $35,000 annually (Monterey County 2003).

Housing

Future growth including the creation of housing is determined by the County and included in the General Plan. It is highly important that land designated for residential units grows at a rate that keeps pace with the County's population growth. The County experienced a significant growth in housing between 1970 and 1980 as housing units were added at an average rate of 2,700 units per year (Monterey County 2003). However since 1990, the housing pace has slowed to an average of 1,048 new units per year (Monterey County 2003). Between October 2005 and 2006, 240 new housing units were created or under construction in the unincorporated area of the County (Monterey County 2007).

Table 3.12-5 illustrates selected housing characteristics for the County, CT 116, Carmel Valley Village, Carmel Valley, and Carmel-by-the-Sea.

Table 3.12-5 Selected Housing Characteristics in 2000

Geographic Area	Total Housing Units	Percentage Owner-Occupied Units	Percentage Renter-Occupied Units	Percentage for Seasonal or Recreational Use	Median Housing Value (1999 $)	Median Contract Rent (1999 $)
County of Monterey	131,708	54.7%	45.3%	3.2%	$265,800	$713
Census Tract 116	3,892	74.4%	25.5%	5.9%	$626,700	$1,091
Carmel Valley Village	2,087	68.5%	31.5%	2.3%	$473,200	$802
Carmel Valley	2,919	70.4%	29.5%	7.9%	$457,100	$785
Carmel-by-the-Sea	3,331	56.8%	43.2%	28.0%	$675,300	$1,055

Source: U.S. Census 2000e

In 2000, only 9% of all residential units in unincorporated Monterey County were multi-family units, while single-family units comprised 82% of the total housing stock (Monterey County 2003). This trend in single-family housing continues as less than 83% of all new construction permits issued between October 2005 and October 2006 were for single-family units (Monterey County 2007).

In 2002, 241 units in Carmel Valley were reported to be “affordable” rental housing units, and were designated for elderly, disabled, and family housing. No affordable housing units were available for homeownership within Carmel Valley (Monterey County 2003). The median housing price in Monterey County was $670,000 in the second quarter of 2006 (Monterey County 2007). This reflects a 52% increase from the same time in 2003. It can be inferred from historical data, that the median housing price within CT 116 and Carmel Valley are significantly higher than the countywide median.

According to the Association of Monterey Bay Area Governments, Monterey County is projected to experience a slightly higher percentage increase in population and employment than housing within the next few decades. Between the planning years of 2000 and 2030, the County as a whole will experience a population increase of nearly 50%, while housing stock would increase by approximately 44% (AMBAG 2004).

Regulatory Setting

This section discusses the local policies and regulations that are relevant to the analysis of population and housing issues of the Proposed Project being considered by the Monterey County.

Federal and State Regulations

No Federal or State policies or regulations apply to the housing and population issues related to the Proposed Project.

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

Residential

Goal 27: to encourage various types of residential development that are accessible to major employment centers and at locations and densities which allow for the provision of adequate public services and facilities.

Objective 27.1: Designate adequate sites for a variety of residential development

Policies

27.1.1 Sufficient areas for residential use shall be designated consistent with the County's growth policies and projections.

27.1.3 Residential development should be concentrated in growth areas.

27.1.4 If appropriate, high density residential areas shall be designated closest to urban areas or unincorporated communities.

Objective 27.2: Provide for adequate access and circulation within residential areas

Policies

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.

Inclusionary Housing Ordinance

The County's Inclusionary Housing Ordinance was originally adopted in 1980 and has been revised several times since that date. Ordinance No. 04185, adopted in 2003, now requires that 20% of all new development meet the County's affordable housing need either through provision of housing (on or off-site) and/or payment of in-lieu fees and is applicable to the proposed development application.

The proposed project consists of 281 units and therefore will be required to contribute and amount equal to 56.2 inclusionary units (6% very low, 6 % low and 8% moderate). The fractional 0.2 can be paid as an In-Lieu fee.

Greater Monterey Peninsula Area Plan

The General Plan designated eight separate non-coastal areas of the County for which "Area Plans" are required. The Greater Monterey Peninsula Area Plan (Area Plan) is one of these areas. The Area Plan includes the project site, but its land use designations, objectives, policies, and goals do not supersede those set forth in the Master Plan, except with regard to subject matter not addressed in the Master Plan. The Area Plan does not include subject matter relevant to the proposed project that is not already covered by the Master Plan; as such consistency analysis with the Master Plan is adequate in satisfying those of the Area Plan.

Carmel Valley Master Plan

The 1986 Carmel Valley Master Plan (Master Plan) is a component of the 1982 General Plan. The major function of the Master Plan is to guide the future development of the valley using goals and policies that reflect an understanding of the physical, cultural and environmental setting of the area. The Master Plan contains policies and regulations relevant to the proposed project:

Residential Land Use (See Countywide General Plan)

27.3.5 (CV) The Carmel Valley development limit shall consist of the existing 572 buildable lots of record, plus 738 additional lots which shall be subject to the quota and allocation system and the policies of this Plan governing deduction from the quota for additional units, caretakers, senior citizen, and low and moderate income units. This constitutes the 20-year buildout allowed by this Plan. The existing lots of record shall include the remaining 150 lots in the amended Carmel Valley Ranch Specific Plan.

27.3.6 (CV) All development proposals shall make provision for low or moderate income housing in accordance with the Inclusionary Housing Ordinance, except that all development shall build such units on- site. Low and moderate-income residential units shall be counted as part of the total new residential units and subtracted yearly from the quota and not the allocation.

27.3.9 (CV) Projects for low- or moderate-income family housing shall be exempt from any annual allocation provisions, but shall be subtracted from the 20-year buildout quota on a basis of one such unit reducing the remaining buildout by one unit.

Impact Analysis

Criteria for Determining Significance

In accordance with CEQA, State CEQA Guidelines, applicable local plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:

A. Induce Population Growth

- Induce substantial population growth in an area, either directly or indirectly, in excess of that anticipated in local land use plans.

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 POP-1: Induce Substantial Population Growth (Less than Significant)

The Proposed Project would result in the addition of 281 residential units within the project area and would accommodate an approximate 849 residents. 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). The population upon build-out of the proposed project would account for approximately 2.5 percent of the projected growth for the unincorporated area of the County.

The proposed addition of 281 new residential units would induce population growth by creating housing opportunities in excess of what is currently available. However, this increase would not be substantially above the level of development currently projected by AMBAG for the region. Additionally, the 281 units would be deducted from the remaining 513 allowable residential units allowed by the

CVMP and thus would not exceed the planned residential growth in the CVMP (see Appendix E). Approval of the proposed project would not contribute a substantial portion of the future growth that is projected to occur within the County. This impact is considered to be *less than significant*. No mitigation is required.

B. Cause Displacement of People or Housing

Impact POP-2: Displace Existing Housing or Population (Less than Significant)

The Proposed Project would be built on a golf course that does not currently support residential housing. No residences or individuals would be displaced by the Proposed Project. This impact is considered to be *less than significant*. No mitigation is required.

Chapter 4
Other CEQA Findings

Introduction

This chapter contains analyses of the Proposed Project'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 impacts were identified are also included in this chapter.

Key data sources reviewed in the preparation of this chapter include:

- *1982 Monterey County General Plan*. Monterey County.
- *Carmel Valley Master Plan*. Monterey County 1986.
- *Rancho Cañada Residential Development Traffic Study.* Hexagon Transportation Consultants. July 25, 2007.
- *Carmel Valley Master Plan Traffic Study*. DKS Associates 2007.
- *Carmel Valley Traffic Improvement Program Draft Subsequent Environmental Impact Report (SEIR).* Jones & Stokes Associates, 2007.
- *Monterey County General Plan Update Draft Program Environmental Impact Report.* Monterey County 2006.

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 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" (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 this analysis of cumulative impacts.

- A cumulatively considerable impact occurs only if the Proposed Project would contribute something to the total effect. A cumulatively considerable impact is more likely to occur if either the project's contribution 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 Project 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 and Projects with Related or Cumulative Impacts

The potential for project-generated effects to contribute to a significant cumulative impact would arise if several projects with similar effects were being

constructed concurrently with the Proposed Project 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 Project considers cumulative conditions in its assessment of cumulative impacts. The cumulative conditions are based on the buildout assumptions of the CVMP analysis, which were presented in Appendix F of the Subsequent Draft EIR for the Carmel Valley Traffic Improvement Program (Jones & Stokes 2007) and the Association of Monterey Bay Area Governments (AMBAG) Model used for the CVMP Traffic Study (DKS Associates 2007). The buildout year is assumed to be 2030.

The cumulative buildout assumptions were updated with additional data available after release of the Draft EIR for the Carmel Valley Traffic Improvement Program that refine, but do not substantially change the buildout assumptions. Tables presenting the estimate are included in Appendix E of this document.

Residential Development Assumptions in the CVMP

For this cumulative analysis, the following residential development is accounted for in the CVMP area:

- Residential Units approved in approved subdivisions before 1998, but not built as of 2000 - 428 units (of which 107 are inside the CVMP) including unbuilt units in the Rancho San Carlos/Santa Lucia Preserve.
- Residential Units in approved subdivisions from 1998 to 2007 – 151 units including the September Ranch approval.
- Residential Units approved from 1999 – 2007 - A total of 128.5 SFDs and adjunct units (senior units are accounted as 0.5 units) received building permits on existing lots from 1999 to 2007 and are presumed unbuilt as of 2000. Building permits were also issued for a total of 47 SFDs and adjunct units between 1999 and 2007 on lots subdivided after 1987; these units were assumed to be included in the approved subdivision totals noted above.
- Residential Units approved after 2007 - CVMP policy allows up to 1,310 total units to be built after 1986. Per County data, of building permits issued between 1986 and 2007, building permits were issued for a total of 355.5 single family dwelling units and 152.5 adjunct units on lots within the CVMP area in existence prior to January 1, 1987 for a total of 508 units. From 1986 to 2007, the County approved an estimated 289 units in new subdivisions in the CVMP area. Thus, from 1986 to 2007, the County has approved 797 units, which leaves a remaining residential unit quota of 513 units (for pre-87 lots and new subdivision).

- 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.

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 2007. 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 (Monterey County 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).

Although the County has been seeking to develop and adopt a comprehensive update to the General Plan since 1999, at the time of preparation of this draft EIR, it is uncertain whether such an update will be actually adopted within the near term and what precisely such an update might contain. At the time of

issuance of the Notice of Preparation for this EIR, the adopted General Plan was the 1982 General Plan, which is used for this analysis.

As a point of information, the CVMP considered in the last version of General Plan Update (adopted in 2007, but not ultimately implemented by the County) did not change the buildout assumptions within the CVMP area.

The current version of the General Plan Update (GP 2007), as described in the December 3, 2007 NOP includes several changes to the CVMP that could affect buildout levels and character. New subdivision is limited to 266 new lots in the current description of the GP 2007. A potential affordable housing overlay is proposed for 13 acres in the Mid-Valley area which could increase allowable densities beyond the current CVMP for this area. Special Treatment Areas are included for the Carmel Valley Ranch (continuing prior CVMP policies for this development), the Condon/Chugach Property (4 additional units), one property at the end of Center Street (one building site), Rancho San Carlos (continuing prior CVMP policies for this development) and for the Rancho Canada Village 40-acre site (allowing essentially similar development as analyzed in this document). A study area is also proposed for the Gardiner/Tennis Club site, but no specific development potential is under consideration at this time. However, such proposals have not yet been evaluated in the Subsequent EIR being prepared for this version of the General Plan Update and thus are not evaluated in this document (except for the Rancho Canada Village site). The Subsequent EIR for the GP 2007 will evaluate the potential impacts of the affordable housing overlay, the STAs, the study area and any other proposed changes to the CVMP.

Evaluation of Project Contribution to Cumulative Impacts

Geology, Soils, and Seismicity

Cumulative Impact GEO-C1: Cumulative Impacts of Development on Geologically Hazardous Areas (Less than Considerable)

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 and 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 Project would comply with these established policies, the project would not contribute considerably to a cumulative impact.

Cumulative Impact GEO-C2: Cumulative Accelerated Runoff, Erosion, and Sedimentation (Less than Considerable with Mitigation)

As described in Chapter 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 proposed development would not contribute considerably to a cumulative runoff, erosion, or sedimentation impact.

Hydrology and Water Quality

Cumulative Impact HYD-C1: Cumulative Impacts to Hydrology and Water Quality (Less than Considerable with Mitigation)

Future development in the region would require 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 Chapter 3.2, *Hydrology and Water Quality*, of this EIR, the Proposed Project 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 Project would have a less than considerable contribution to this cumulative impact.

Biological Resources

Cumulative Impact BIO-C1: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Less than Considerable with Mitigation)

The CVMP area has substantial areas that are undeveloped and rural in character with limited residential and commercial development relative to size of the overall CVMP area. Various habitat types are located in the CVMP, including riparian woodlands near the Carmel River and chaparral vegetation on the valley floor. Special status species such as California red-legged frogs, southwestern pond turtles, migratory birds, and steelhead are known to utilize these habitats. Construction and maintenance activities associated with cumulative development in the region could result in the direct loss or indirect disturbance of special-status species or their habitats within the County. Impacts on special-status species or their habitats could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Development of the Rancho Cañada Village project in combination with other projects will result in impacts to Monterey pine stands, riparian woodlands, protected trees, and habitats for special status species. However, implementation of Mitigation Measures BIO-1 through BIO-25 would reduce the project's impacts to a less-than-significant level through avoidance, transplantation, and replacement of disturbed or lost resources. Because these mitigation measures would ensure that no net losses of critical habitats result from project development, contributions to cumulative impacts on special status species would also be avoided. Other projects in the project area have completed or will be required to complete the appropriate level of CEQA compliance and permitting, including the establishment of mitigation measures to avoid or minimize similar impacts. Therefore, the project would not contribute significantly to a cumulatively impact on biological resources.

Aesthetics

Cumulative Impact AES-C1: Cumulative Degradation of the Existing Visual Character of the Region (Less than Considerable 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 Chapter 3.4, *Aesthetics*, with mitigation, the project's effects on the 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 could change the character of the CVMP area within the immediate

vicinity of the new project area, but given the limitations and policies in the CVMP itself, such buildout is unlikely to change the overall character of the area, in particular taking into account the limited buildout allowed by CVMP policies.

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 Chapter 3.4 includes mitigation to reduce project level impacts on visual resources to less-than-significant levels, the overall development in the region could result in a significant cumulative impact. However, because the project would be consistent with the CVMP and County General Plan and views of the development would be limited, the Proposed Project it is not expected to make a considerable contribution to this impact.

Land Use, Population and Housing

Cumulative Impact LU-C1: Cumulative Local Land Use Impacts (Less than Considerable with Mitigation)

As discussed in Chapter 3.5, the Monterey County General Plan provides a general direction for future growth throughout the unincorporated areas of the County. The CVMP is a component of the County's General Plan that guides the future development of the valley. In order for a project to be built in the Carmel Valley, it must be compliant with the CVMP, Greater Monterey Peninsula Area Plan, and the County General Plan. As described in Chapter 3.5, the Rancho Cañada Village project is not in compliance with the CVMP, as the current land use designation for the site is for Public/Quasi Public uses and not for residential use. If the project is advanced, the CVMP land use designation for the site will need to be altered and the zoning of the site changed. Apart from this inconsistency, the project is considered otherwise consistent with other applicable CVMP policies with mitigation proposed in this Draft EIR and can be integrated into Carmel Valley without resulting in land use changes overall that would imperil meeting the goals of the CVMP.

It is possible that other development could be approved in the future that may potentially conflict with CVMP and County land use policies and designations by encroaching on incompatible land uses. This could result in cumulative significant land use impacts to occur. However, the Proposed Project would not facilitate these other non-compliant land uses and thus would not contribute to any cumulative significant land use impacts.

Hazards and Hazardous Materials

Cumulative Impact HAZ-C1: Cumulative Significant Hazards to the Public or Environment (Less than Considerable 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 proposed residential development would require the use and temporary storage of hazardous materials. Hazardous material treatment, transport, and storage are highly regulated by city, county, state, and federal regulations. While the Proposed Project 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- considerable contribution to a cumulative impact regarding the exposure of the public to hazardous materials.

Transportation and Circulation

Traffic Conditions and Scenarios

As discussed in Chapter 3.7, *Transportation and Traffic*, traffic conditions were analyzed for the weekday AM and PM peak hours of traffic because it is during these periods that the most congested traffic conditions occur on an average day. Carmel Valley Road was analyzed based on peak-hour and average daily traffic.

The *Transportation and Traffic* Chapter of this DEIR evaluated traffic conditions for four scenarios. Short-term conditions were evaluated in Chapter 3.7 using Scenarios 1, 2, and 3. Cumulative traffic impacts are evaluated below using the following scenarios:

Scenario 2: *Background Conditions.* Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments in the project area. The added traffic from approved but not yet completed developments was provided by the Monterey County Public Works Department.

Scenario 4: *Cumulative Conditions.* Cumulative conditions consist of existing traffic volumes plus the trips associated with approved, pending, and planned developments. The primary source for the cumulative analysis was the 2007 DKS Associates report, *Carmel Valley Master Plan Traffic Study*, which evaluated the proposed Carmel Valley Traffic Improvement Plan (CVTIP*).* For the Laureles Grade and Highway 68 intersection, the cumulative volumes for the movements to and from Laureles Grade were derived from the DKS Associates report, and the through volumes on Highway 68 were taken from the cumulative volumes in the 2005 Hexagon report, *Corral de Tierra Mixed-Use Development Traffic Report*. The *Carmel Valley Master Plan Traffic Study* evaluated four potential future conditions.

- **Scenario A** assumed a buildout of the CVMP with potential new dwelling units proportionally distributed across potential development locations and with development not specifically allocated to the Proposed Project site.
- **Scenario B** assumed buildout of the CVMP with the specific allocation of dwelling units to the sites of pending projects, including Rancho Cañada Village.
- **Scenario C** includes the same land use as Scenario B but adds the previously approved Capital Improvement Projects (CIP) list of traffic improvements (e.g. prior to the 2007.
- **Scenario D** includes the same land use as Scenarios B and C but adds additional planned (Carmel Valley Master Plan Carmel Valley Road Improvement List) traffic system improvements beyond those previously proposed.

The first two scenarios (A and B) assume no traffic improvements beyond those currently under construction. None of these scenarios include the Rio Road extension. All scenarios assume project access from Carmel Valley Road only.

Cumulative Conditions on Regional Highways

Based on the cumulative conditions described in the Monterey County General Plan Draft Program EIR (Monterey County 2006), the following segments of Highway 1 near Carmel and Highway 68 between Monterey and Salinas would have deficient operations with cumulative conditions (as described in the draft PEIR) less than LOS D during the PM Peak Hour without the TAMC 14-Year Investment Plan Transportation Improvements:

- Highway 1 between Carmel Valley Road and Ocean Avenue (LOS E)
- Highway 68 west of Laureles Grade between Oxton Road and Olmstead Road (LOS F), between Ragsdale Road and south of Portola Road/north of Terero Drive (LOS F), and Highway 68 between Ragsdale Road and B Road (LOS E)
- Highway 68 east of Laureles Grade between Laureles Grade and south of Portola Road/north of Terero Drive (LOS F)

Based on the cumulative conditions described in the Monterey County General Plan Draft Program EIR (Monterey County 2006), the following segments of Highway 1 near Carmel and Highway 68 between Monterey and Salinas would have deficient operations less than LOS D during the PM Peak Hour with cumulative conditions (as described in the draft PEIR) less than LOS D with the TAMC 14-Year Investment Plan Transportation Improvements:

- Highway 1 between Carmel Valley Road and Ocean Avenue (LOS E)
- Highway 68 west of Laureles Grade between Oxton Road and Olmstead Road (LOS F), between Ragsdale and B Road (LOS F)
- Highway 68 east of Laureles Grade between Laguna Place and Quail Ridge Road (LOS F)

Cumulative Traffic Impacts

Cumulative Impact TR-C1: LOS Decrease at Signalized Intersections (Less than Considerable with Mitigation)

The results of the level of service analysis under cumulative conditions are summarized in Table 4-1. As shown, the results indicate that LOS would be deficient at two signalized intersections.

The Highway 1/ Rio Road intersection would have an acceptable LOS C during the AM peak hour but would have a deficient LOS D during the PM peak hour for all cumulative conditions.

The Highway 68 / Laureles Grade intersection would have an acceptable LOS C during the AM peak hour but would have a deficient LOS E during the PM peak hour for all cumulative conditions.

The project would contribute traffic to both of these deficient intersections. This is a cumulatively considerable contribution. Implementation of Mitigation Measure TR-C1, described below, and TR-2, previously described in Chapter 3.7, would mitigate this contribution to a less than significant level.

Mitigation Measure TR-C1: Contribute Fair-Share Impact Fee for Improvement of Laureles Grade / Highway 68 Intersection

This improvement would entail restriping the eastbound right turn lane to a shared through-right turn lane and widening Highway 68 by approximately 12 feet over a distance of approximately 300 feet, plus suitable taper, east of the intersection. Implementation of this improvement would improve intersection operations to an acceptable LOS C. This improvement would likely require the acquisition of right-of-way. TAMC is pursuing an impact fee program to fund improvements to Highway 1 and to Highway 68. The project would be subject to these fees.

Mitigation Measure TR-2: Contribute Regional Impact Fee for Improvements to Highway 1 and Highway 68

This mitigation measure is described in Chapter 3.7.

Cumulative Impact TR-C2: LOS Decrease at Unsignalized Intersections (Less than Considerable with Mitigation)

Under cumulative conditions with the project, as shown in Table 4-1, all unsignalized intersections other than two intersections discussed below would have acceptable levels of service. Thus, project contributions to those intersections would be less than considerable and mitigation is not required.

Rio Road and Carmel Valley Road

The unsignalized intersection at Rio Road and Carmel Valley Road would operate at an unacceptable LOS F under cumulative conditions with the project. However, it should be noted that the cumulative conditions were evaluated with project access via Carmel Valley Road only and not with project access via Carmel Valley Road and via Rio Road (to the west). Nevertheless, since Scenario A cumulative conditions (which do not include Rancho Cañada Village) show the Rio Road/Carmel Valley Road intersection to have failing LOS F conditions, and the project would contribute trips to this intersection, any contribution is considered to be cumulatively considerable.

The project would add 14 AM and 19 PM trips to this intersection. This intersection meets the peak-hour volume signal warrant under the cumulative conditions. As such, the implementation of the Proposed Project would result in a considerable cumulative contribution at this intersection. Implementation of Mitigation Measure TR-C2 would reduce this contribution to a less-than-significant level.

Mitigation Measure TR-C2: Contribute Fair-Share to Signalization of Rio Road and Carmel Valley Road

Installation of a traffic signal would mitigate the project impact by providing for the warranted signal while maintaining traffic conditions at an acceptable LOS A during the peak hours. The project proponent shall make a fair-share contribution toward the cost of signalization of this intersection.

Laureles Grade and Carmel Valley Road

The unsignalized intersection at Laureles Grade and Carmel Valley Road currently operates at an unacceptable LOS F and would continue to operate at an unacceptable LOS F under cumulative conditions with the project without improvement. The project would add 15 AM and 18 PM trips to this intersection. This intersection meets the peak-hour volume signal warrant under existing and cumulative conditions. As such, the implementation of the Proposed Project would result in a considerable cumulative contribution at this intersection. Implementation of Mitigation Measure TR-1 (previously identified in Chapter 3.7) would reduce this contribution to a less-than-significant level.

Table 4-1. Cumulative Intersection Levels of Service

		Scenario A		Scenario B		Scenario C	
Intersection	Peak Hour	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS
Hwy 1 & Carmel Valley Rd	AM	23.7	C	23.8	C	23.8	C
	PM	26.4	C	26.4	C	26.4	C
Carmel Rancho Blvd & Carmel Valley Rd	AM	19.6	B	19.6	B	19.6	B
	PM	32.6	C	33.5	C	33.5	C
Hwy 1 & Rio Rd	AM	29.8	C	29.8	C	29.8	C
	PM	38.6	D	38.0	D	38.0	D
Crossroads Dwy & Rio Rd	AM	9.2	A	9.2	A	9.2	A
	PM	10.5	B	10.5	B	10.5	B
Carmel Center Pl & Rio Rd	AM	5.6	A	5.6	A	5.6	A
	PM	7.8	A	7.9	A	7.9	A
Carmel Rancho Blvd & Rio Rd	AM	10.1	B	10.1	B	10.1	B
(unsignalized)	PM	14.3	A	14.4	A	14.4	B
Rio Rd & Carmel Valley Rd	AM	27.5	D	(1)	F	(1)	F
(unsignalized)	PM	63.8	F	69.3	F	69.3	F
Laureles Grade & Carmel Valley Rd	AM	(1)	F	(1)	F	15.6	C
(unsignalized)	PM	(1)	F	(1)	F	10.1	C
Laureles Grade & Hwy 68	AM	21.5	C	21.1	C	21.1	C
	PM	61.2	E	61.1	E	61.1	E

(1) High delay cannot be calculated.

Mitigation Measure TR-1: Contribute Fair-Share Impact Fee to Improvement of Laureles Grade and Carmel Valley Road
This mitigation measure is described in Chapter 3.7.

Cumulative Impact TR-C3: Peak Hour LOS Decrease for Two-Lane and Multi-Lane Portions of Carmel Valley Road (Less than Considerable with Mitigation Except Segment 3 which is Considerable and Unavoidable)

Future cumulative peak-hour levels of service for the two-lane segments and multi-lane segments of Carmel Valley Road, shown in Table 4-2 and 4-3, indicate that segments 5, 6, and 7 would operate at unacceptable levels of service (LOS E) for Scenario A and Scenario B. Scenario C includes the addition of a 0.25 mile-passing lane along each of these segments as a means to improve the levels of service to acceptable levels (LOS D).

Segment 3 is shown to operate at unacceptable levels of service (LOS D) under all cumulative future scenarios. The *Carmel Valley Master Plan Traffic Study* (DKS Associates 2007) recommends measures to improve the level of service for segment 3, including changing the policy of the segment's LOS standard or adopting a strategy to reduce the number of vehicles traveling this segment.

The other six segments would operate at acceptable levels of service under all cumulative scenarios.

Future cumulative conditions would result in significant impacts. The implementation of Mitigation Measure TR-C3 would ensure that impacts along Segments 5, 6 and 7 would be reduced to less-than-significant levels. Similar to the conclusion in the *Carmel Valley Master Plan Traffic Study* (DKS Associates 2007), no feasible mitigation is available to mitigate impacts along Segment 3, and thus the project would have a significant and unavoidable contribution to this cumulative impact.

Mitigation Measure TR-C3: Contribute Fair-Share Impact Fee to Improvement of Carmel Valley Road Segment Operations
Installation of passing lanes as described in Carmel Valley Master Plan Traffic Study (DKS Associates 2007), would improve segment operations along Segments 5, 6 and 7 to an acceptable LOS D during peak hours. The project proponent shall make a fair-share contribution toward the cost of improvements by payment of the Carmel Valley Road impact fee.

Cumulative Impact TR-C4: Peak Hour LOS Decrease for Portions of Highway 1 and 68 (Less than Considerable with Mitigation)

The project would contribute to traffic along Highway 1 and Highway 68 where current operations are deficient.

Based on turning volumes, the project would contribute 49 trips northbound and 85 trips southbound on Highway 1 north of Carmel Valley Road during the PM Peak Hour. As current (2000) PM Peak Hour operations between Carmel Valley Road and Ocean Avenue are LOS F, this contribution represents a significant impact.

Based on turning volumes, the project would contribute 8 trips westbound and 5 eastbound trips on Highway 68 east of Laureles Grade during the PM Peak Hour, and 3 westbound trips and 5 eastbound trips on Highway 68 west of Laureles Grade during the PM Peak Hour. As current (2000) PM Peak Hour segment operations along certain Highway 68 segments between Monterey and Salinas are LOS E and LOS F, this contribution represents a significant impact.

These impacts can be mitigated through contribution of a fair-share regional impact fee to pay for planned improvements to Highway 1 near Carmel and Along Highway 68 (Mitigation Measure TR-2) to a less than significant level.

Mitigation Measure TR-2: Contribute Fair-Share Regional Impact Fee for Improvements to Highway 1 and Highway 68
This mitigation measure is described in Chapter 3.7, *Transportation and Traffic*.

Cumulative Impact TR-C5: Adequate Sight Distance (Less than Considerable)

As described in Chapter 3.7, the sight distance at the intersection of Rio Road and Carmel Valley Road is satisfactory for the speeds prevailing on Carmel Valley Road and the project would not contribute considerably to a cumulative impact.

Cumulative Impact TR-C6: Adequate Project Access (Less than Considerable)

As described in Chapter 3.7, the site access is adequate and the project would not contribute considerably to a cumulative impact.

Cumulative Impact TR-C7: Changes to Transit and Bicycle Travel Access (Less than Considerable)

As described in Chapter 3.7, the site would improve transit and bicycle travel through provision of trail connections and would accommodate bicycle and pedestrian travel within the project thus the project would not contribute considerably to a cumulative impact.

Table 4-2. Cumulative Peak-Hour Levels of Service on Two-Lane Segments of Carmel Valley Road

	Carmel Valley Rd			AM Peak Hour			PM Peak Hour		
Segment	From	To	LOS Standard	2-way Volume	PTSF [a]	LOS	2-way Volume	PTSF [a]	LOS
			Scenario A						
1	Holman Rd	East	C	680	64.9%	C	680	67.3%	C
2	Esquiline Rd	Holman Rd	C	700	64.5%	C	723	67.9%	C
3	Ford Rd	Esquiline Rd	C	1144	78.2%	D	1031	72.4%	D
4[b]	Laureles Grade	Ford Rd	D	1598	84.8%	D	1498	81.5%	D
5[b]	Robinson Cyn Rd	Laureles Grade	D	1596	87.5%	E	1613	84.4%	D
6[b]	Schulte Rd	Robinson Cyn Rd	D	2048	91.3%	E	1924	88.8%	E
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	2241	95.5%	E	2059	89.8%	E
			Scenario B						
1	Holman Rd	East	C	680	65.5%	C	679	67.9%	C
2	Esquiline Rd	Holman Rd	C	701	65.0%	C	721	68.4%	C
3	Ford Rd	Esquiline Rd	C	1137	78.1%	D	1023	72.2%	D
4[b]	Laureles Grade	Ford Rd	D	1578	84.4%	D	1478	81.1%	D
5[b]	Robinson Cyn Rd	Laureles Grade	D	1563	90.9%	E	1578	87.7%	E
6[b]	Schulte Rd	Robinson Cyn Rd	D	2007	90.8%	E	1893	92.3%	E
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	2200	95.0%	E	2027	89.3%	E
			Scenario D						
1	Holman Rd	East	C	680	65.5%	C	679	67.9%	C
2	Esquiline Rd	Holman Rd	C	701	65.0%	C	721	68.4%	C
3	Ford Rd	Esquiline Rd	C	1137	78.1%	D	1023	72.2%	D
4[b]	Laureles Grade	Ford Rd	D	1578	84.4%	D	1478	81.1%	D
5[b]	Robinson Cyn Rd	Laureles Grade	D	1563	72.9%[c]	D	1578	70.4%[c]	D
6[b]	Schulte Rd	Robinson Cyn Rd	D	2007	78.0%[c]	D	1893	79.3%[c]	D
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	2200	76.7%[c]	D	2027	72.1%[c]	D

Table 4-3. Cumulative Peak-Hour Levels of Service on Multi-Lane Segments of Carmel Valley Road

Carmel Valley Rd					AM Peak Hour			PM Peak Hour		
Seg	From	To	Dir.	LOS Std	Volume (vph)	Density (pc/mi/ln)	LOS	Volume (vph)	Density (pc/mi/ln)	LOS
					Scenario A					
8	Rancho S. Carlos Rd	Rio Rd	EB	C	1022	10.01	A	1439	13.92	B
			WB	C	1501	17.09	B	1220	12.06	B
9	Carmel Rancho Bl	Rio Rd	EB	C	1300	13.30	B	1672	19.44	C
			WB	C	1853	24.50	C	1375	17.97	B
10	Carmel Rancho Bl	Hwy 1	EB	C	1386	17.30	B	1334	16.54	B
			WB	C	1240	18.32	C	1150	15.53	B
					Scenario B					
8	Rancho S. Carlos Rd	Rio Rd	EB	C	1023	10.01	A	1410	13.64	B
			WB	C	1459	16.61	B	1215	12.00	B
9	Carmel Rancho Bl	Rio Rd	EB	C	1307	16.35	B	1681	19.54	C
			WB	C	1861	24.60	C	1381	18.04	C
10	Carmel Rancho Bl	Hwy 1	EB	C	1388	17.33	B	1333	16.53	B
			WB	C	1241	18.33	C	1149	15.52	B
					Scenario C					
8	Rancho S. Carlos Rd	Rio Rd	EB	C	1023	10.01	A	1410	13.64	B
			WB	C	1459	16.61	B	1215	12.00	B
9	Carmel Rancho Bl	Rio Rd	EB	C	1307	16.35	B	1681	19.54	C
			WB	C	1861	24.60	C	1381	18.04	C
10	Carmel Rancho Bl	Hwy 1	EB	C	1388	17.33	B	1333	16.53	B
			WB	C	1241	18.33	C	1149	15.52	B

Cumulative Impact TR-C8: Construction Traffic (Less than Considerable)

As described in Chapter 3.7, construction traffic would not constitute a significant direct traffic impact according to the impact criteria. Since the project would be constructed in the near-term, cumulative buildout conditions are not relevant to evaluation of construction traffic.

Air Quality

Cumulative Impact AIR-C1: Cumulative Effect on Air Quality (Less than Considerable)

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 Chapter 3.8, *Air Quality*, the Proposed Project is considered to be consistent with this plan and thus would not contribute to a cumulative impact related to criteria pollutants.

Cumulative Impact AIR-C2: Cumulative Elevated Health Risk from Exposure to Construction-Related Emissions (Less than Considerable with Mitigation)

As indicated in Chapter 3.8, *Air Quality*, construction of the proposed development is 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. It is anticipated that diesel fuel will be reformulated over the next several years to reduce particulate emissions and 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 in Chapter 3.8 for construction activities that would reduce project-level contributions to potential cumulative impacts to less than considerable.

Cumulative Impact AIR-C3: Increased Project Greenhouse Gas Emissions May Contribute to Climate Change (Significance Undeterminable)

Overview

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 (CO_2), nitrous oxide (N_2O), 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; and

- 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.

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and Toxic Air Contaminants, which are pollutants of regional and local concern. Worldwide, California is the 12th to 16th largest emitter of CO_2 (CEC 2006), and is responsible for approximately 2% of the world's CO_2 emissions (CEC 2006).

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. Transportation is responsible for 41% 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 CO_2 and N_2O 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 CO_2 include uptake by vegetation and dissolution into the ocean. California GHG emissions in 2002 totaled approximately 491 MMT-CO_2 eq.

No inventory of emissions has been completed to date for Monterey County or for the CVMP. Sources of greenhouse gas emissions in the CVMP area include (but are not limited to): on road vehicles; 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.

Regulatory Setting

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 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.

Some of the proposed Groups 2 and 3 measures that could become effective during implementation of the Proposed Project include the following:

- Measure 2-6, Education: Guidance/protocols for local governments to facilitate GHG emission reductions.
- Measure 2-9, Energy Efficiency: Light-covered paving, cool roofs and shade trees.
- 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.

Significance Criteria

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 Draft 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. However, it is addressed here to provide disclosure of potential impacts.

Cumulative Impact Analysis

The analysis examines project construction and project operational emissions in isolation first and then total project emissions in a cumulative context.

Cumulative Impact AIR –C3a: Project Construction Greenhouse Gas Emissions (Less than Considerable, in isolation)

Project construction will result in GHG emissions from the following construction-related sources: (1) construction equipment emissions and (2) emissions from workers' vehicles traveling to and from the construction sites. The primary emissions occur as CO_2 from gasoline and diesel combustion, with more limited vehicle tailpipe emissions of nitrous oxide and methane as well as other GHG emissions related to vehicle cooling systems. An estimate of construction emissions was not prepared as this would necessitate a detailed inventory of all future construction equipment and activity, which would be too speculative at this time. Although GHG emissions such as carbon dioxide can persist in the atmosphere for decades, construction emissions are a one-time event. Thus, the one-time emissions associated with construction are limited in comparison to ongoing GHG sources. As described below, any project emissions,

taken in isolation, are insufficient to "cause" measurable or quantifiable climate change on a global scale. Contributions to global GHG emissions and associated cumulative impacts are discussed separately below.

Cumulative Impact AIR-C3b: Project Operational Direct and Indirect Greenhouse Gas Emissions (Less than Considerable, in isolation)

Project operational GHG emissions were estimated for increases in vehicle traffic, area sources (such as landscaping and building energy use, which would constitute the large majority of project emissions. Additional sources of operational GHG emissions would include use of commercial refrigerants (especially hydrofluorocarbon compounds) and indirect emissions associated with the energy associated with wastewater treatment. These other sources were not quantified due to their relatively small contribution to the project's overall GHG emissions, and due to the lack of sufficient detailed information by which to estimate such emissions.

Table 4-4 presents the results of the GHG emission estimate for the project and for CVMP buildout. Supporting calculations for this estimate are presented in Appendix F.

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. The project would result in emissions that are approximately 0.001 percent of California's emissions, which is equivalent to 0.0002 percent of global emissions. Even if all of the GHG emissions in Table 4-4 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. Thus, project emissions, in isolation, are considered less than significant.

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 below.

Cumulative Impact AIR-C3c: Project Contributions to Cumulative Greenhouse Gas Emissions (Significance Undeterminable)

It is possible that GHG emissions associated with the project (from construction and operations), when combined with emissions due to CVMP buildout, Monterey County buildout, throughout California and throughout the world, might contribute to climate change.

Climate change, by a substantive scientific consensus represented by the analysis of the IPCC, is a significant cumulative impact, 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 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) CO_2 eq from 2000 to 2030, which represents an increase of between 25 and 90 percent.

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 above, 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 Rancho Cañada Specific Plan would or would not contribute considerably to this significant cumulative impact.

Project GHG Emission Reduction Features

There are a number of features included in the Rancho Cañada Specific Plan that will help to reduce future GHG emissions, including the following;

- **Compact Development** – By concentrating residential development closer to existing services at the mouth of Carmel Valley, the Specific Plan would likely reduce overall miles compared to a more spread out pattern of single-family development across the CVMP.
- **California Building Energy Efficiency Standards** - All buildings in the Specific Plan will be required to meet Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings.
- **Non-Vehicle Transport Opportunities** – The project will provide for bicycle and pedestrian access from the project westward to commercial areas at the mouth of Carmel Valley, which will offset some emissions that would otherwise occur due to vehicle trips.
- **Local Water Sources** – The project will utilize an on-site water source, thus reducing the energy necessary to pump water to the project site compared with alternative development locations that could be further from water sources.
- **Landscaping and Tree Planting** – The Specific Plan requires landscaping throughout the new residential development. This new landscaping and trees will assist to maintain the current carbon dioxide uptake of the existing golf course.
- **Restoration** – In addition to plantings within the new development, the project will include proposed restoration plantings along the Carmel River. These additional trees and scrub vegetation will also provide carbon dioxide uptake.

While these measures will not eliminate project GHG emissions, their inclusion in the project will result in a lower GHG emissions level than had they not been

Table 4-4. Cumulative Greenhouse Gas Emissions Within the CVMP

Condition	Units	CO2 equivalent (tons/year)
Rancho Canada Village	281 units	4,816
2030 Additional Residential (including project)	513 units	8,092
2030 Additional Visitor-Serving Units	285 units	4,496
2030 Additional Commercial	315,815 square feet	26,322
2030 Total		38,910

Source for Buildout assumptions for residential and commercial = Jones & Stokes 2007
Other assumptions for estimate in Appendix F.

incorporated into the project. It is also important to note that future state actions taken pursuant to AB-32 including requirements for lower carbon-content in motor vehicle fuels, improved vehicle mileage standards (provided California is not barred due to federal action), and increased share of renewable energy in electricity generation will also serve, in time, to further reduce GHG emissions related to this project.

Consistency with AB-32

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 a key 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 GHG reduction measures incorporated in the project and the application of AB-32 mandates over time (including to development within and related to the Rancho Cañada Specific Plan area, there is no reason to find that approval of the Rancho Cañada Specific Plan 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 NOI-C1: Exposure of Noise-Sensitive Land Uses to Cumulative Traffic Noise that Exceed County Noise Compatibility Standards (Less than Considerable)

As discussed in Chapter 3.9, project-related noise increases to existing land uses have been identified along three road segments on Rio Road: Rio Road east, Rio Road west from the project to Carmel Rancho Boulevard, and Rio Road west from Carmel Rancho Boulevard to Highway 1. As shown in Table 3.9-7 in Chapter 3.9, future noise levels along Rio Road east to Carmel Valley Road are relatively low and do not result in any land use incompatibilities. Although the Proposed Project would connect the new residential area to Rio Road to the west, the residents of Rancho Cañada Village would be the only contributor of new traffic noise between the project and Carmel Rancho Boulevard. Since the segment traffic noise level would be less than 55 dBA (the residential noise standard), the project is not considered to contribute considerably to a cumulative impact along this segment of Rio Road. West of Carmel Rancho Boulevard, existing noise levels are 61 dBA (which exceeds the residential standard) and the project would increase traffic noise levels by 1dBA for the residential area along

this segment. However, this limited project-level increase is below the threshold amount of noticeable change, and this contribution is considered less than considerable.

Significant cumulative noise impacts are expected to result along Carmel Valley Road, as described in the Carmel Valley Traffic Improvement Program DSEIR (Jones & Stokes 2007) due to cumulative traffic increases, particularly in areas where existing noise contours are greater than 60 dBA more than 100 feet from the roadway. However, the project's contribution to roadway noise level (see Table 3.9-7 in Chapter 3.7) is far less than 1 dBA and thus would not substantially result in change noise levels along this roadway. As such, the project would not contribute to a significant cumulative impact on noise along Carmel Valley Road.

Public Services and Utilities

Cumulative Impact PSU-C1: Cumulative Increase in Demand for Public Services and Utility Infrastructure and Capacities (Less than Considerable)

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. Although public service and utility providers in Monterey County and associated cities have accounted for increases in the public needs in master planning, the accommodation of such growth may place constraints on public utilities and services for future developments.

Fire and Emergency Services

The Rancho Cañada Village Specific Plan, along with other development projects, would increase demand for fire protection and medical emergency services. As stated by the Cypress Canyon Fire Protection District (Frost pers. comm.), the project would not impact service ratios and response times. Continuing increases in population would eventually require the District to secure additional personnel and fire equipment to provide adequate levels of service. Any new development projects planned in the District would contribute to a cumulative fire protection impact. As with all public services, the CVMP has adequately considered the fire protection services need of the future build-out population. Since the Project would only serve to accommodate, not increase, the build-out population, the project would not contribute considerably to a significant cumulative impact on fire and emergency services.

Police Services

Cumulative development within and surrounding the project area will result in an increased demand for police services. As populations increase crime generally tends to increase, including traffic-related accidents and burglary/theft related incidents. However, as with all public services, the CVMP has adequately considered the police services need of the future build-out population. Since the

Project would only serve to accommodate, not increase, the build-out population, the project would not contribute considerably to a significant cumulative impact on police services.

School Services

Although the Carmel School District has been experiencing a decline in student enrollment, cumulative residential development in the CVMP area would contribute to an increasing demand for school services. As with all public services, the CVMP has adequately considered the school services need of the future build-out population. Since the Project would only serve to accommodate, not increase, the build-out population, the Project would not contribute considerably to a significant cumulative impact on schools.

Water

Cumulative development in the Carmel Valley and greater region would result in increasing demand for water supplies, which is primarily delivered by Cal-Am. Currently, water availability is extremely limited and many new developments are placed on hold until new sources of water can be found. Therefore, any new development reliant on Cal-Am for potable water supply would contribute to cumulative water impacts.

Compared to the existing water demand, the residential development would result in a net reduction in water use. As such, the project would benefit both water supply and biological resources in the Carmel River. No contribution to a significant cumulative impact on water supply would result from the implementation of the Proposed Project.

Wastewater

The Proposed Project, in combination with other development projects, would result in an increased demand for wastewater treatment services provided by CAWD. As stated in Chapter 3.10, the CAWD treatment facility is operating at 40% below its available capacity. The addition of a maximum 0.28 mgd from the Rancho Cañada Village development is not expected to constitute a considerable contribution to a cumulative impact on wastewater services. Furthermore, the CVMP has adequately considered the wastewater services need of the future build-out population, which includes that of the Project.

Solid Waste

Cumulative development would increase the number of residents in the unincorporated Monterey County area. These residents would generate an increased demand for solid waste, green waste, and recycling disposal needs.

MRWMD is currently operating substantially below its maximum daily permitted disposal tonnages. According to the MRWMD, waste produced by the implementation of the Proposed Project would have a negligible impact on the lifespan and operational aspects of the landfill. In addition, the total amount of waste disposed at the landfill by existing and future development can be reduced through the implementation of green waste and recycling containers for residential and commercial collection. Through the compliance with these waste

reduction practices, the Proposed Project would not result in a considerable contribution to a cumulative impact on solid waste services.

Recreational Services

Although the project would result in a loss of a golf course, it would increase the current quantity of open space in the Carmel Valley area by dedicating 31 acres for habitat conservation, 2.5 acres for neighborhood parkland, and 0.5 acres of open space. As discussed in Chapter 3.10, the County contains numerous parks and open space areas, which greatly exceed population to parkland ratio requirements. As such, this future development is not expected to result in a negative cumulative impact on recreational services. The project would instead have a net beneficial impact on recreational resources by providing recreational areas in excess of County requirements.

Cultural Resources

Cumulative Impact CR-C1: Cumulative Impacts on Unknown and Undiscovered Cultural Resources (Less than Considerable with Mitigation)

Cumulative impacts related to cultural resources could occur where excavation or construction activities uncover buried historical, archeological, or paleontological resources. Record and map searches of the project area revealed no significant historical or archeological resources. Additionally, mitigation measures in Chapter 3.11, *Cultural Resources*, specify treatment protocols to address potentially undiscovered cultural resources. Additionally, any new development would be required to adhere to City, County, state, and federal requirements related to cultural resources as part of the CEQA process. These impacts can be mitigated at the project level, and thus the Proposed Project's contribution to cumulative impacts associated with damage or loss of such resources in the region is less than significant.

Population and Housing

Cumulative Impact POP-C1: Cumulative Impacts on Population and Housing (Less than Considerable)

A specific plan is a tool for the systematic implementation of the general plan. It effectively establishes a link between implementing policies of the general plan and the individual development proposals in a defined area. Specific plans may be used in all or part of the County to ensure systematic execution of the General Plan. The CVMP was enacted as part of the Monterey County General Plan; therefore, the purpose of a specific plan within the CVMP area is to systematically implement the CVMP.

The proposed Specific Plan would not increase the allowable quota of new residential units. The Proposed Project would create 281 new units, which would be deducted from the remaining 513 allowable units leaving a balance of 232 units that could be built in the CVMP area under the existing quota.

Because the Proposed Project would not include additional units above those allotted within the CVMP quota, it would not have a considerable contribution to cumulative impacts on population and housing.

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 impact. 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 Project's likely 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 (Monterey County 2006). The existing 1982 General Plan is in effect as the legal General Plan pending a future General Plan Update.

Growth Projections

Buildout under the current 1982 General Plan is expected to result in an increase of 13,570 new dwelling units, new commercial uses of 1,054 acres, and 8,151 new jobs, with an estimated buildout population of 136,973 persons, compared to a 2000 population of 100,252 persons (Monterey County 2006). The AMBAG region and Monterey County have high jobs-to-housing ratios, while the unincorporated area has a very low jobs-to-housing ratio.

Growth-Related Impacts of the Proposed Project

Direct Impacts

As discussed in Chapter 2, *Project Description*, the Proposed Project involves the creation of housing units within Carmel Valley. The proposed Rancho Cañada Village Specific Plan would not increase the allowable quota of new residential units. The Proposed Project would create 281 new units, which would be deducted from the remaining 513 allowable units leaving a balance of 232 units that could be built in the CVMP area under the existing master plan.

Indirect Impacts

As a housing project, the project will not contribute to a direct demand for housing. However, additional residents will contribute to indirect demand for employment and services, which in turn could result in tertiary indirect impacts from other economic development and population growth. This growth could occur in Carmel Valley, in unincorporated Monterey County, or in adjacent cities or elsewhere. Thus, indirect growth resulting from the Proposed Project is expected to lead to a number of indirect impacts on the natural and built environment, including those summarized below.

- **Aesthetics –** New growth could change scenic vistas, visual character, ridgelines, and other visual resources.
- **Air Quality –** Local air quality could worsen as a result of growth, because of elevated levels of vehicle emissions and increases in diesel

particulate matter generated by construction activities. Additional growth could also increase greenhouse has emissions in the County

- **Biological Resources –** The conversion of undeveloped land to homes, roads, businesses, and other built uses and expansion of intensive could reduce the area of wildlife habitat remaining in the region.
- **Cultural Resources –** The conversion of undeveloped land to homes, roads, businesses, and other built uses could affect historic and prehistoric resources that may exist.
- **Geology, Soils, and Seismicity –** Expansion of residential and other uses could increase the numbers of persons and structures subject to earthquakes, landslides, and other geophysical impacts.
- **Hazards and Hazardous Materials** – New growth could increase potential for wildland fire, and spills of petroleum and hazardous materials.
- **Hydrology and Water Quality** – The conversion of undeveloped land to homes, roads, businesses, and other built uses could increase impervious surfaces resulting in drainage and flooding impact and could increase point and non-point source pollution
- **Noise –** Construction of homes, roads, businesses, and other built uses could result in equipment- and vehicle-related noise impacts. Additional noise generated by home maintenance and transportation activities could result from the subsequent population growth.
- **Public Services, Utilities, and Recreation –** As population grows, the demand for police and fire protection and for services such as schools, hospitals, and parks would undergo a corresponding increase. Additional utilities, such as increased wastewater treatment capacity and extensions of utility infrastructure, also would be needed.

- **Transportation and Traffic –** Area and local traffic would increase as a result of new development and increased numbers of through-commuters traveling to employment hubs.

By enabling growth, the Proposed Project would indirectly foster, in varying degrees, all of the growth-related impacts identified above. The County is responsible for effectively implementing General Plan policies and other measures intended to mitigate the potential adverse impacts of future growth including CEQA review of plans and projects. Although the Proposed Project would contribute to growth, this growth would be within the range identified by the CVMP because no expansion of the residential quota is proposed. No further analysis is required, and no additional mitigation beyond that identified in the General Plan policies, the CVMP policies, and this EIR is proposed for growth-related effects.

Significant and Unavoidable 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 Project would be reduced to a less-than-significant level through the implementation of identified mitigation measures and environmental commitments, with the exception of the impact listed below.

- **Cumulative Impact TR-C3: Peak Hour LOS Decrease for Carmel Valley Road (Segment 3 through Carmel Valley Village)** – As presented in this chapter and in the SEIR for the Carmel Valley Traffic Improvement Program (Jones & Stokes 2007), no feasible mitigation was identified to address cumulative traffic level of service, which will decline to LOS D with CVMP buildout along Segment 3. Although technically feasible mitigation was identified in the SEIR (such as widening to 4 lanes, adding passing lanes, or routing bypass traffic through residential areas) none of these measures are considered acceptable of consistent with the CVMP or with existing uses in the Village and surrounding areas.

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 project proposes the creation of a housing community. This would require commitments of both renewable and nonrenewable energy and material resources for constructing the project. These may include natural woods, concrete, and mineral resources, fossil fuels, water, and other finite resources. Additionally, the project would involve converting a portion of land onsite into urban land uses, which tend to be irreversible for all practical purposes.

Chapter 5
Alternatives Analysis

Alternatives Analysis

In accordance with Section 15126.6 of the State CEQA Guidelines, an EIR must evaluate a "range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project." The discussion of alternatives should focus on "alternatives capable of eliminating any significant adverse impacts or reducing them to below a level of significance, even if these alternatives could impede to some degree the attainment of the project objectives or would be more costly." CEQA further directs that "the significant effects of an alternative shall be discussed, but in less detail than the significant effects of the project as proposed." The factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.

The decision to select alternative locations needs to be based on whether off-site locations would avoid or substantially lessen any of the significant effects of the project. The lead agency also must determine if no feasible alternative locations exist and disclose the reasons for this assessment. The final decision regarding the feasibility of alternatives lies with the decision-maker for a given project who must make the necessary findings addressing the potential feasibility of reducing the severity of significant environmental effects (PRC 21081; see also State CEQA Guidelines 15091).

State CEQA Guidelines define "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." When making the decision as to whether an alternative is feasible or infeasible, the decision-making body may consider the stated project objectives in an EIR in light of any relevant economic, environmental, social, and technological factors.

Project Goal and Objectives

According to the RCV Specific Plan, the Proposed Project has the following goals and objectives:

Economic Goals

- Create Affordable (Inclusionary) and Workforce housing that remains affordable for as long as possible.
- Create a mixed-income community with a range of housing opportunities across the economic spectrum
- Ensure that new development pays for 100% of infrastructure and services needed to support the new neighborhood.
- Establish mechanisms for maintaining and operating private infrastructure.

Environmental Goals

- Create a compact, efficient community that will minimize impacts on the environment.
- Integrate the surrounding native habitats into the open spaces within the community.
- Create buffers around the community that help transition from a native habitat/ecosystem to an urban habitat/ecosystem.
- Encourage multi-modal transportation opportunities, especially bicycle, pedestrian, and transit by creating small blocks, interconnected streets, sidewalks, and bicycle paths and through the use of traffic-calming measures appropriate for a residential neighborhood.

Social Goals

- Create a diverse, mixed-income community with a full spectrum of life cycle housing opportunities.
- Provide 50% Workforce and Affordable Housing units to serve the housing needs of people employed within the boundaries of the Carmel Valley and Monterey Peninsula area.

Proposed Project

Project Features

The key features of the Proposed Project, as described in Chapter 2, include:

- **Housing** - 281 residential units on 40 acres of land, of which 182 would be single-family homes, 64 town homes, and 35 condominiums/flats. Half (50%) of the residences (140 units) would be deed-restricted affordable and workforce units, and the other units would be market rate.
- **Open Space** - 39 acres of permanent open space to include habitat preserve, active recreation areas, and trails;
- **Roads** - local streets, connection to Carmel Valley Road via Rio Road to the east, and connection to Rio Road to the west;
- **Flood Protection** – the residential site is within the floodplain; the project will raise elevations at the residential site by removing soil along the Carmel River and importing soil from off-site; and
- **Utilities** – connections to public services and utilities.

A project description that describes the project features in further detail is presented in Chapter 2, *Project Description*.

Impacts of the Proposed Project

State CEQA Guidelines 15126.6 (f) states "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 EIR identifies the following environmental effects.

- **Geology and Soils** – The project would require extensive excavation and importation of fill. Excavation may result in unstable soils, erosion, and sedimentation. The project soils at the residential site may be subject to liquefaction. These impacts can be mitigated to a less-than-significant level with mitigation identified in Chapter 3.1.
- **Hydrology** –The project could result in increases in high flow velocities and changes in the level and character of flood events upstream and downstream as well as local site drainage. However, through the incorporation of recommended mitigation measures in Chapter 3.2, these impacts can be mitigated to a less-than-significant level.
- **Water Quality** –While the project would increase residential runoff, it would decrease the use hazardous materials currently used for golf course

landscape maintenance (pesticides, herbicides, and fertilizer). Construction of the project may result in runoff and sedimentation. These construction and runoff effects on water quality are mitigable to less-than-significant levels through with mitigation identified in Chapter 3.2.

- **Biological Resources** – The project would remove native and non-native vegetation that may support several special-status species but would also restore native vegetation and wildlife habitat along the Carmel River in areas that are presently golf course. The project would also reduce water withdrawals from the Carmel River aquifer that would benefit biological resources dependent upon surface flow. Overall, with the proposed habitat restoration and mitigation in Chapter 3.3, the project would result in less than significant impacts on biological resources.
- **Visual Aesthetics** – The residential development would change the visual aesthetic features relative to the existing golf course and would add news sources of light and glare. These impacts can be mitigated to a less-than-significant level with mitigation identified in Chapter 3.4.
- **Land Use** – The project is not consistent with the Carmel Valley Master Plan land use designation and zoning for the site. This is a significant impact that can only be remedied through amendment of the CVMP and the Greater Monterey Peninsula Area Plan. Apart from the inconsistency with the land use designation and zoning, the project is otherwise consistent with the CVMP.
- **Hazards and Hazardous Materials** – The project would result in public exposure to petroleum and hazardous materials during construction and operation but these impacts can be mitigated to a less-than-significant level with mitigation identified in Chapter 3.6.
- **Transportation and Traffic** – The project would increase local and regional traffic. These impacts can be mitigated to a less-than-significant level with mitigation, which primarily consists in payment of fair-share mitigation fees identified in Chapter 3.7.
- **Air Quality** – Construction related emissions of PM10 would be less than significant with mitigation identified in Chapter 3.8. Construction emissions of other criteria pollutants would be less than significant. Construction emissions of diesel particulates would be significant, but project mitigation in Chapter 3.8 would reduce the project-level impact to less than significant.
- **Noise** – Construction noise would be significant, but it can be addressed through the construction best management practices included in mitigation in Chapter 3.9. New residential units would be exposed to levels above residential standards, but the resultant noise level can be addressed through mitigation in Chapter 3.9. Traffic noise would increase locally, however this increase would not result in significant impacts to existing land uses.
- **Water Supply** – The project would require less water for residential use than is currently withdrawn for landscape irrigation on the existing golf course. As such, the project would reduce withdrawals from the Carmel River aquifer, which may benefit both water supply and biological resources.

- **Other Public Services and Utilities** – The project would increase demand for other public services, including police and fire protection, schools, landfills, and wastewater treatment. These service and utility demands would be accommodated by existing infrastructure and providers without resulting in the need for new or expanded off-site facilities. New utility extensions on site will be paid for by the new development itself. Project impacts can be mitigated to a less-than-significant level with mitigation identified in Chapter 3.10.
- **Cultural Resources** – The project could disturb undiscovered buried cultural resources. These potential impacts can be mitigated to a less-than-significant level with mitigation identified in Chapter 3.11.
- **Population/Housing** – The project would induce population growth by creating housing opportunities in excess of what is currently available. However, growth is strictly regulated by the CVMP and the project would not create additional housing beyond that allowed by the residential quota. Therefore, this growth is not substantially above the level of development projected by the CVMP and the existing General Plan for the region. Thus, these impacts are considered less than significant.
- **Construction Disruption** – Construction may adversely affect traffic, access, and emergency access, air quality, and noise. While these temporary impacts are potentially significant, implementation of mitigation measures included in Chapter 3 would reduce them to levels below significance.
- **Contributions to Cumulative Impacts** – In addition to the direct and indirect impacts described above, the project would also contribute to cumulative impacts. Cumulative contributions within most subject areas are addressed through project-level mitigation. Additional cumulative mitigation is described in Chapter 4 for project contributions to cumulative traffic impacts. However, even with mitigation, cumulative contributions cannot be mitigated to a less-than-significant level for impacts to cumulative traffic along Carmel Valley Road (Segment 3).

Alternatives Analyzed in the Draft EIR

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 project objectives while avoiding, reducing, or minimizing significant impacts identified for the Proposed Project. All of these alternatives were determined to be feasible (or potentially feasible) and would meet at least some of the project objectives (though not necessarily all of the objectives). The ability of these alternatives to substantially lower the significant impacts identified for the Proposed Project is discussed below. All subject areas are analyzed for each alternative determined to be potentially feasible, though at a much more general level than in Chapter 3.

Other alternatives considered but dismissed from further evaluation are discussed at the end of this Chapter.

Alternative 1 – No Project

CEQA requires analysis of the No-Project Alternative.

Alternative Characteristics

Under the No-Project Alternative, no improvements are anticipated. The site would remain a public golf course on the western portion of the Rancho Cañada Golf Club.

Feasibility

The retention of the site as a public golf course is feasible, in that the site would simply be managed and operated in its current state by the Rancho Cañada Golf Club.

Ability to Meet Project Objectives

By not creating housing units, this alternative would not meet any of the economic or social objectives of the Proposed Project. This alternative also does not meet the applicant's environmental goals for preservation of open space and habitat areas.

According to CEQA Guidelines section 15126.6 (a), alternatives evaluated in an EIR need to attain "most of the basic objectives of the project." According to CEQA Guidelines section 15126.6 (b), discussion of the alternatives can include analysis of alternatives that "would impede to some degree the attainment of the project objectives, or would be more costly."

Therefore, this alternative is considered feasible to avoid or substantially lessen significant effects of the Proposed Project at the site, but would not meet the project objectives or goals.

Direct and Indirect Impact Analysis

- **Aesthetics and Visual Resources** – This alternative would not change site aesthetics. The site would remain in its current state as a golf course.
- **Air Quality** – Air quality would remain unchanged, as no new emission sources would be introduced on the site.
- **Biological Resources** – Existing biological resources would not be disturbed. However, the existing habitat (golf course) would be less suitable than the Proposed Project's open space preserve. In addition, the water requirements for golf turf irrigation would continue to draw on the Carmel River aquifer.
- **Cultural Resources** – No disturbances to cultural resources would occur.

- **Geology, Soils, and Paleontology** – No geology, soils, or paleontology impacts would occur.
- **Hazards and Hazardous Materials** – No new sources of hazards or hazardous materials would result.
- **Hydrology and Water Quality** – The alternative would continue the current level of landscaping chemical application to maintain the golf course. No new sources of runoff would occur.
- **Land Use, Population, and Housing** – There would be no land use impacts. No increase in population or housing would occur beyond background growth.
- **Noise** – No new sources of noise would be introduced.
- **Public Services, Recreation, and Utilities** – No increase in public service demands would result from the maintenance of the golf course. However, the current drawdown of the aquifer would continue for landscape irrigation, which is above that needed for the Proposed Project.
- **Transportation and Traffic** – No new traffic would be introduced.

Cumulative Impacts

Under the No Project Alternative, 281 residential units would not be located on the west course of the Rancho Cañada Golf Club. Instead, these units would be developed elsewhere in the Valley in accordance with the residential buildout quota allowed under the CVMP. This impact analysis focuses on the likely impacts resulting from cumulative residential development elsewhere in the valley with this alternative.

- **Aesthetics and Visual Resources** – It is likely that the 281-units would mostly be developed in a low-density, rural fashion that is similar to the existing character of the Valley, although it is possible that some development would occur in medium-density designated areas. However, in order to accommodate this low-density character for 281 units, an area larger than 40-acres would be required. Even though the density would be compatible with the character of Carmel Valley, the No Project Alternative is likely to result in some visual impacts from the conversion of a larger area of previously undeveloped land. Screening and distancing from major roadways would likely mitigate these impacts to a large extent, but permanent visual changes but highly dispersed impacts may still result from this spread of development.
- **Air Quality** – Because the same number of residents would be accommodated elsewhere in the CVMP under the No Project Alternative, effects on criteria pollutants are likely to be similar to the Proposed Project. Construction-related effects may be slightly increased due to the larger area that may be developed, however, these impacts could likely be reduced to less-than-significant levels through the implementation of best management practices similar to those proposed in this draft EIR. With more highly dispersed development likely located further from existing services without potential non-vehicular travel options, overall residential vehicle miles

traveled may be greater than the Proposed Project and thus could result in greater vehicle-related greenhouse gas emissions.

- **Biological Resources** – Depending on the exact locations chosen for the development of housing elsewhere, effects on biological resources may result in additional or more severe impacts. Overall, it is likely that the buildout of 281 units throughout the Valley would have a larger development footprint and may be located in previously undisturbed areas. The Proposed Project would be located on an area that is previously disturbed and developed, and by concentrating development on 40-acres it would minimize impacts on habitat and species loss. In addition, it is uncertain that the 39-acres of open space and habitat preserve planned for the Proposed Project would be created elsewhere in Carmel Valley as a result of more dispersed residential development.
- **Cultural Resources** – Depending on the exact sites chosen for development, this alternative would have similar effects as the Proposed Project if undiscovered resources were encountered during construction.
- **Geology, Soils, and Paleontology** – Although the Proposed Project would require extensive grading and filling to accommodate the development at the golf course, it is likely that the total footprint of development throughout the valley would exceed 40-acres. Despite variations in location, effects on geology and soils would likely be similar to the Proposed Project. Depending on the exact sites chosen for development, this alternative would have similar effects as the Proposed Project if undiscovered paleontological resources were encountered during construction.
- **Hazards and Hazardous Materials** – Effects on hazards and hazardous materials would likely be similar to the Proposed Project.
- **Hydrology and Water Quality** – Depending on the exact locations chosen for the development of housing elsewhere, effects on hydrology and water quality may result in additional or more severe impacts. Overall, it is likely that the buildout of 281 units throughout Carmel Valley would have a larger development footprint and would therefore create impervious areas greater than the Proposed Project. It is likely that new development may not be located within flood zones due to high costs associated with development in potential flood areas, and thus flooding impacts may be reduced under the No Project Alternative. However, the increase in impervious area could reduce groundwater recharge in the Valley and could cause additional water quality impacts associated with increased run off.
- **Land Use, Population, and Housing** – The No Project Alternative would not result in the creation of 281 units in a medium to high-density development, of which 140 units would have been affordable and workforce. While these additional 281 units would be developed elsewhere in the Carmel Valley according to CVMP and Monterey County housing policies, it is presumable that the majority would be constructed as market rate units since the construction of workforce units are not as economically profitable. Furthermore, the workforce units are not afforded the same provision as affordable units (20% per development) and are least likely to be constructed elsewhere in the Carmel Valley in association with smaller more dispersed

residential development. The No-Project Alternative would allow potential future development of up to 175 units of Visitor-Serving units on the site, unlike the Proposed Project.

- **Noise** – Depending on the proximity and type of sensitive receptors near areas proposed for housing development, noise effects are unlikely to result in significant impacts under the No Project Alternative that could not be mitigated to a less-than-significant level.
- **Public Services, Recreation, and Utilities** – Overall demand for much of the public services, recreation and, utilities are likely to be similar to the Proposed Project. However, depending on the site locations chosen, existing infrastructure may not be in place to serve the developments. This could require additional construction and costs to connect to public utilities, including water, sewer, and telecommunications. Furthermore, potable water may not be available on-site as under the Proposed Project, resulting in additional demand from Cal-Am to provide water services. As discussed in Chapter 3.10, Cal-Am is currently operating at its maximum allowed capacity and a new source of water is needed for it to meet current and future demand. As such, the No Project Alternative may result in significant impacts on water supply.
- **Transportation and Traffic** – Although the No Project Alternative would result in the development of 281 units spread throughout Carmel Valley, impacts on traffic and circulation are likely to be similar to the Proposed Project. Because the same number of residents would be accommodated, similar trip generation would result. Even though development would be dispersed, it is highly likely that Carmel Valley Road would remain the primary route of access for these units and impacts on LOS would be similar to the Proposed Project. The CVMP Traffic Study evaluated different future traffic scenarios, which included a Scenario A that dispersed residential development throughout the CVMP, and a Scenario B that included the Proposed Project (and other proposed development) and the results indicated that traffic results were nearly the same. This is likely due to the single access character of Carmel Valley (everyone for the most part, must use Carmel Valley Road) and the influence of traffic from outside the valley.

Alternative 2 – East Golf Course Alternative

Alternative Characteristics

This alternative would locate the 40-acre residential area along the East Golf Course east of the Rancho Cañada clubhouse oriented closer to Carmel Valley Road. The habitat /open space area would be located along the Carmel River in the adjacent area to the south. Presuming the need for a similar amount of area, it was not considered feasible to locate the development entirely outside the 100-year floodplain, as the area outside the floodplain was too narrow to accommodate the 40-acre development. Access would be via a combined access road to the clubhouse from Rio Road or directly from Carmel Valley Road via a

new intersection. No connection to Rio Road to the west would be included in the Proposed project

This alternative was developed to examine the potential to avoid impacts related to proximity to the middle school, the church, and the residential developments west along Rio Road.

Feasibility

The creation of the project on the east golf course is feasible, in that the developer owns the entire Rancho Cañada Golf Club and there is sufficient land to construct such a project and still allow for 18-holes of golf on a remaining course. Furthermore, access can still be provided, either directly or indirectly, via Carmel Valley Road for residents of the future development. The east course is also located in proximity to existing infrastructure that would serve the project area. The water source proposed for the project would be useable for this site as well.

Ability to Meet Project Objectives

With the exception of the connection to Rio Road to the west, this alternative would result in the creation of all the key features of the Proposed Project in an alternative location on the Rancho Cañada Golf Club. In doing so, it would achieve the majority of social, environmental, and economic goals set forth by the original project. However, because the location of the project site is located approximately 0.5- mile further to the east than the Proposed Project, pedestrian and bicycle accessibility to the shopping area outside of the neighborhood would be reduced, thus not fulfilling the environmental goal for multi-modal transportation. Thus, the East Golf Course Alternative is considered to meet most, but not all of the project goals and objectives.

Direct and Indirect Impact Analysis

- **Aesthetics and Visual Resources** – Under this alternative, the housing development would likely be located in the northeastern portion of the east course due to size and environmental constraints on this area of the Rancho Cañada Golf Club. This would place the residential development within 300-feet of Carmel Valley Road, thus resulting in significantly higher visual impacts than under the original project design. Additional mitigation measures would be necessary for this alternative in order to screen views from the roadway.
- **Air Quality –** This alternative would create identical numbers of residential units and require similar grading and filling. Construction access would not need to be as close to the middle school and thus construction diesel particulate exposure would be lower to school receptors. Operational air quality impacts would be similar to that of the Proposed Project.
- **Biological Resources –** The east golf course contains similar biological features as the west course. Ponds, trees, and vegetated areas would be

disturbed in order to accommodate the proposed development, and impacts to these resources would be similar to the Proposed Project. Contiguous open space area is important to accommodate a viable habitat preserve. The development of the project on the east course would limit the space available for the habitat preserve north of the Carmel River. It is possible that a preserve of equal size as the Proposed Project (31 acres) could be implemented under this alternative, however it would need to be located north and south of the Carmel River. While the location of this preserved open space would be altered, the impacts (and benefits) of its implementation would also be similar to that of the Proposed Project.

- **Cultural Resources** – This alternative would likely require similar excavation and ground disturbing activities as the Proposed Project, and would therefore have similar cultural resource impacts. No additional resources are known to exist on the east course area of the Rancho Cañada Golf Club.
- **Geology and Soils** – Development of residential units on the east course of the Rancho Cañada Golf Club would have similar effects on geology and soils as the Proposed Project. As with the west course area, portions of the east course are located within the 100-year flood zone, such that similar grading and filling of the development area would be required.
- **Hazards and Hazardous Materials** – This alternative would have similar hazardous materials impacts as the Proposed Project.
- **Hydrology and Water Quality –** This alternative would likely have similar hydrology and water quality impacts as the Proposed Project as encroachment on the floodplain, elevation of the site, site drainage design and stormwater runoff best management practices would also be required.
- **Land Use, Population, and Housing** – This alternative would have similar population and housing impacts as the Proposed Project. The east course of the Rancho Cañada Golf Club is currently zoned, operated, and maintained in a similar manner as the west course. As such, land use effects, including the conversion of a golf course to residential development and zoning conflicts, would be similar to the Proposed Project. The project land use compatibility context would shift from the middle school, church, and residential adjacent uses to the residential adjacent uses east of the east golf course location.
- **Noise** – As the project would be far closer to Carmel Valley Road, it is likely that additional mitigation would be required for new residential building design as noise levels would be substantially higher for the residences built closer to Carmel Valley Road. This alternative would not result in increased traffic noise levels to existing land uses west along Rio Road, however this alternative does not avoid significant impacts as noise level effects in this area were not considered significant under the Proposed Project. Sensitive receptors under this alternative include existing single-family residences located immediately east of this portion of the Rancho Cañada Golf Club. The project would expose these existing residences to new sources of noise, both temporarily and permanently. However, these increases in noise levels would be similar to those presented in Chapter 3.9, and are not likely to result in additional significant impacts.

- **Public Services, Recreation, and Utilities** – Due to existing, adjacent developments, utility infrastructure is located in proximity to the east course location. Similar to the Proposed Project, this alternative would require the extension of existing transmission lines for sewer, electricity, and telecommunications. Because this alternative would result in the same number of residents at build-out, effects on service providers, schools, and recreation would be similar to the Proposed Project as well. Impacts related to water supply would be similarly beneficial.
- **Transportation and Traffic** – This alternative would shift the residential development approximately 0.5-mile to the east. While this does not preclude alternative means of transportation to the commercial area at the mouth of the Valley, it may discourage residents from bicycling or walking to conduct everyday activities such as grocery shopping. While this would not result in a significant impact under CEQA, it would not fulfill the environmental project goal of creating a community that encourages multi-modal transportation. In order to preserve the west course of the Rancho Cañada Golf Club, vehicular access would be feasible only via Carmel Valley Road under this alternative. This scenario has been studied in the analysis of Alternative 5 below. As discussed, the Carmel Valley Road only access would result in an additional, significant LOS impact at the Carmel Valley Road/Rio Road intersection. With the installation of a traffic signal, this alternative's impact on LOS would be reduced to a level below significance. Since this alternative would result in the same number of residents at build-out, ADT effects and impacts on other intersections and roadways would be similar to the Proposed Project.

Cumulative Impact Analysis

Under this alternative, 281 residential units would still be located on the Rancho Cañada Golf Club. As such, cumulative impacts are nearly the same as the Proposed Project with one exception. This alternative would likely have less construction-period particulate emissions exposure to the middle school locations given that the construction location and access are not as close to the school as the Proposed Project.

Alternative 3 – Medium Density Alternative

Alternative Characteristics

This alternative would include 186 residential units on the 40-acre residential site (gross density of 4.5 units/acre). This gross density would be considered medium density (1–5 units/acre) in the CVMP although specific densities within the Village could be high-density in certain locations. The open space area and preserve would be the same as the Proposed Project.

In order to ensure that this alternative was economically feasible, this alternative was designed to include as many market-rate units as the Proposed Project (141 units), would require the mandated percentage of affordable units (20% or 37

units in this alternative), with only a minimal amount of workforce housing (4% or 7 units). The general amount of infrastructure needed to support this alternative was presumed to be the similar to the Proposed Project, although specific housing unit utilities and streets would be less.

Feasibility

This alternative is technically feasible as the project site is available, utility connections and road connections are available, and water supply exists as for the Proposed Project.

This alternative includes the same amount of market-rate units as the Proposed Project, but the amount of affordable and workforce units has dropped by nearly 100 units. The cost of major infrastructure (site elevation, road connections, park improvements) are likely similar to the Proposed Project, but the cost of certain infrastructure within the residential development (streets, utilities, etc.) will be less. Given that the market-rate units are the primary economic driver, and the subsidized affordable units are reduced substantially with a corresponding decline in certain infrastructure costs, this alternative is considered potentially feasible at this time

No economic study has been conducted to verify the economic feasibility of this alternative. If this alternative were advanced, it is suggested that an economic feasibility study be conducted to verify the tentative presumption above.

Ability to Meet Project Objectives

By including the same number of market rate units, this alternative would also meet the economic goals for infrastructure development and maintenance. In order to do so however, the number of affordable and workforce housing units would decrease by 100-units. While this medium-density development would reduce the number of available workforce and affordable housing units, approximately 24% of the total development would still be comprised of these mixed-income and inclusionary units. As such, this alternative would satisfy the project's economic and social goals for creating a community that supports a full spectrum of housing opportunities, but not as well as the Proposed Project. This project would provide the same habitat and open space conservation identified in the Proposed Project, therefore fulfilling the original project's environmental goals.

Thus, the Medium Density Alternative would meet most, but not all of the project goals and objectives.

Direct and Indirect Impact Analysis

- **Aesthetics and Visual Resources** – Although a similar acreage of the parcel would be developed under this alternative, the reduction in the total number of units on the 40-acre parcel would be slightly more compatible with the rural character of the Carmel Valley. Although the reduced density would

further lessen visual impacts on the character of the project area, these impacts were considered less than significant for the Proposed Project. Visual effects on scenic vistas would also be reduced, but mitigation described for the Proposed Project would still be applicable in order to screen views from Carmel Valley Road.

- **Air Quality** – A reduced residential development would result in a reduced site population and project vehicle trips generated. While this may lessen air quality effects, these impacts are considered less than significant for the Proposed Project. Although the Medium Density Alternative would require less construction, the amount of grading and fill requirements would be similar to the Proposed Project. As such, the alternative would likely result in similar construction related air quality impacts, and mitigation would still be applicable.
- **Biological Resources** – Although this alternative would result in fewer residential units, it would require the same area of land on the parcel for development and would create similar areas of open space, habitat preserve, and parks spaces. As such, direct impacts on Biological Resources would be similar to the Proposed Project. The slightly decreased water requirement for the reduced density population may further result in an indirect benefit for biological resources associated with the Carmel River.
- **Cultural Resources** – This alternative would have similar effects as the Proposed Project if undiscovered resources were encountered during construction.
- **Geology and Soils** – The same area of land would be developed for residential units. Therefore, effects on geology and soils, including the grading and filling requirements, would be similar to the Proposed Project.
- **Hazards and Hazardous Materials** – Effects on hazards and hazardous materials would be similar to the Proposed Project.
- **Hydrology and Water Quality** – Impacts would be similar to, but slightly less than the Proposed Project on Hydrology and Water Quality. Since the Medium-Density Alternative would result in a similar development footprint, it would likely result in comparable impervious surface areas as the Proposed Project. However, the reduced population would not require as much potable water from the Carmel River aquifer. Such changes to water usage is not likely to result in significant effects on hydrology and water quality.
- **Land Use, Population, and Housing** – Any residential development on this parcel would result in similar land use effects, as the area is zoned only for public and quasi-public uses and visitor accommodation. As such, a reduced density alternative would not lessen or avoid land use impacts relative to consistent with land use designations and zoning. This alternative would create only 186 residential units, 38 of which would be affordable housing and 7 of which would be workforce housing. Although this is a decrease of approximately 95-units from the Proposed Project (all of which would be affordable and workforce), these units would remain in the stock of housing units allowable under the CVMP residential quota and would likely be developed elsewhere. This alternative would also displace the potential for

175 visitor-serving units to be built at this location. No new significant effects on population or housing are likely to result under this alternative.

- **Noise** – Due to the decreased number of residents under this alternative and fewer trips generated, noise effects along Rio Road to the west of the site would also be slightly lessened. However, this alternative does not avoid significant impacts, as noise level effects in this area were not considered significant under the Proposed Project.
- **Public Services, Recreation, and Utilities** – The reduced population of this alternative would result in slightly lessened demands on public services, recreation, and utilities, including potable water, emergency services, and schools. However, these lessened demands would not likely change the significance of impacts identified under the Proposed Project with mitigation.
- **Transportation and Traffic** – The decreased population supported by this alternative would generate fewer trips along Rio Road, Carmel Valley Road, and regional highways. Although impacts to LOS may be slightly lessened, it is unlikely to change the significance of impacts identified under the Proposed Project, as most of the project impacts are contributions of traffic to already failing intersections and roadway segments.

Cumulative Impact Analysis

Under this alternative, 186 residential units would be located on the Rancho Cañada Golf Club. Similar to the Proposed Project, within the CVMP residential quota, this would mean lesser residential development in other locations in Carmel Valley as long as the quota is in place. Similar to the No Project Alternative, the "other" 95 units not built with this alternative would be spread throughout Carmel Valley on residentially designated sites and result in similar impacts as the No Project Alternative but on a smaller scale.

Alternative 4 – Low Density Alternative

Alternative Characteristics

This alternative would include 40 residential units on the same 40-acre residential site (gross density of 1 unit/acre). The open space area would be the same as the Proposed Project. This alternative would include 33 market rate units, 7 affordable units and no workforce units (as they are not mandatory). The percentage of affordable units in the development would be 20% in compliance with Monterey County minimal requirements. This gross density would be considered low density (1 unit/acre) in Carmel Valley although specific densities within the Village could be medium density in certain locations.

Feasibility

This alternative is technically feasible as the project site is available, utility connections and road connections are available, and water supply exists as for the Proposed Project.

The cost of major infrastructure (site elevation, road connections, park improvements) are likely similar to the Proposed Project, but the cost of certain infrastructure within the residential development (streets, utilities, etc.) will be substantially less.

No economic study has been conducted to verify the economic feasibility of this alternative. Given the extensive infrastructure for the project site, it is possible that this alternative may not be economically feasible.

For the purposes of this EIR, this alternative is considered potentially feasible. If this alternative were advanced, it is suggested that an economic feasibility study be conducted to verify the tentative presumption above.

Ability to Meet Project Objectives

This alternative would still provide the habitat and open space conservation identified in the Proposed Project, therefore fulfilling the original project's environmental goals.

This alternative would change the community dynamic from mixed-income and inclusionary to primarily market-rate, to one that is far less economically diverse. Thus, this alternative would result in a potential loss of affordable and workforce housing for Carmel Valley. As such, this alternative would not satisfy some of the Project's Economic Goals, or any of the Project's Social Goals.

Thus, while this alternative is feasible, it meets only a few of the project's goals and objectives and does not meet most of the project objectives.

Although CEQA does not require analysis of alternatives that do not meet most of the project objectives, this alternative was analyzed to disclose what low-density residential use of the site might entail.

Direct and Indirect Impact Analysis

- **Aesthetics and Visual Resources** – Although a similar acreage of the parcel would be developed under this alternative, this low-density type of development would be more compatible with the rural character of the Carmel Valley. Although the reduced density would further lessen visual impacts on the character of the project area, these impacts were considered less than significant. Visual effects on scenic vistas would also be reduced, but mitigation described for the Proposed Project would still be applicable in order to screen views from Carmel Valley Road.

- **Air Quality** – A reduced residential development would result in a reduced population and vehicle trips generated. While this would lessen air quality effects, operational impacts are considered less than significant for the Proposed Project. Although this alternative would require less construction, the amount of grading and fill requirements would be similar to the Proposed Project. As such, the alternative would likely result in similar construction-related air quality impacts in character (but somewhat reduced in scale), and mitigation would still be applicable.
- **Biological Resources** – The project footprint area would be similar for both the Proposed Project and the alternative. Therefore, this alternative would not avoid or increase direct impacts on biological resources. The decreased water requirement for the reduced population would further result in an indirect benefit for biological resources associated with the Carmel River.
- **Cultural Resources** – This alternative would have similar effects as the Proposed Project if undiscovered resources were encountered during construction.
- **Geology and Soils** – Effects on geology and soils under this alternative would be similar to that of the Proposed Project.
- **Hazards and Hazardous Materials** – No additional hazardous materials effects would result under this alternative. This alternative would have similar effects as the Proposed Project.
- **Hydrology and Water Quality** – Since this alternative would result in a similar development footprint but would be less dense, it would reduce the amount of new impervious surface areas compared the Proposed Project and associated stormwater runoff. The reduced population would not require as much potable water from the Carmel River aquifer.
- **Land Use, Population, and Housing** – Any residential development on this parcel would result in similar land use effects, as the area is zoned only for public and quasi-public uses and visitor accommodation. As such, this alternative would not lessen or avoid land use impacts related to consistency with land use designations or zoning. As a low-density development, the level of compatibility with adjacent land uses would in general be higher, but the Proposed Project, while inconsistent with land use designations/zoning, was not considered to result in significant impacts related to land use compatibility. Also, as a low-density development, this alternative would be more consistent with the general rural character of the CVMP, but again, the Proposed Project was not considered inconsistent with the CVMP rural character due to its location, setting, and design. No new significant effects on population or housing are likely to result under this Low-Density Alternative.
- **Noise** – Due to the decreased number of residents under this alternative and fewer trips generated, noise effects along Rio Road to the west of the project site would also be slightly lessened. However, this alternative does not avoid significant impacts, as noise level effects in this area were not considered significant under the Proposed Project.

- **Public Services, Recreation, and Utilities** – The reduced population of this alternative would result in lessened site demands on public services, recreation, and utilities, including potable water, emergency services, and schools. However, these lessened demands would not likely change the significance of impacts identified under the Proposed Project.
- **Transportation and Traffic** – The decreased population supported by this alternative would generate fewer trips along Rio Road, Carmel Valley Road, and regional highways. Although impacts to LOS may be slightly lessened, it is unlikely to change the significance of impacts identified under the Proposed Project, as most of the project impacts are contributions of traffic to already failing intersections and roadway segments.

Cumulative Impacts

Under this alternative, 40 residential units would be located on the Rancho Cañada Golf Club. Similar to the Proposed Project, within the CVMP residential quota, this would mean lesser residential development in other locations in Carmel Valley as long as the quota is in place. Similar to the No Project Alternative, the "other" 241 units not built with this alternative would be spread throughout Carmel Valley on residentially designated sites and result in similar impacts as the No Project Alternative but on a smaller scale.

Alternative 5 – Proposed Project with Rio Road Extension Emergency Access Only

Alternative Characteristics

This alternative would be the same as the Proposed Project, but would have site access via Rio Road to the east to Carmel Valley Road. This alternative would provide for pedestrian, bicycle, and emergency access along the Rio Road tieback levee between Rancho Cañada Village and the current terminus of Rio Road at Val Verde Street. Vehicle access would be restricted to emergency access only with a locked gate.

Feasibility

This alternative is feasible alternative since access would still be provided via Carmel Valley Road and a secondary emergency access route would be available. Emergency providers would be able to use access from the west or the east so that adequate service ratios can be maintained for the development.

Ability to Meet Project Objectives

This alternative would result in the creation of all the key features of the Proposed Project in the same location on the west course of the Rancho Cañada

Golf Club. The restriction of site access to Rio Road would not impede or restrict the attainment of Project objectives or goals.

Impact Analysis

- **Aesthetics and Visual Resources** – This alternative would have identical visual and aesthetic impacts as the Proposed Project with perhaps a slight reduction in road width possible along the emergency road segment to Rio Road.
- **Air Quality** – The same number of trips generated from this alternative would be identical to that of the Proposed Project. Residences using vehicles to access the commercial area at the mouth of the Valley would have a slightly longer drive, which would increase operationally emissions slightly. Opportunities for non-vehicular travel would be the same as the Proposed Project. In addition, this alternative would result in similar construction related emissions. As such, air quality impacts are considered similar to that of the Proposed Project.
- **Biological Resources** – This alternative would not avoid or increase impacts on biological resources. Effects similar to the Proposed Project would result.
- **Cultural Resources** – This alternative would have similar effects as the Proposed Project if undiscovered resources were encountered during construction.
- **Geology and Soils** – Effects on geology and soils under this alternative would be similar to that of the Proposed Project.
- **Hazards and Hazardous Materials** – No additional hazardous materials effects would result under this alternative. This alternative would have similar effects as the Proposed Project.
- **Hydrology and Water Quality** – This alternative would not avoid or increase impacts on hydrology or water quality. Effects similar to the Proposed Project would result.
- **Land Use, Population, and Housing** – Effects on land use, population, and housing under this alternative would be similar to that of the Proposed Project.
- **Noise** – A slight decrease in noise levels for receptors along Rio Road west of the project site would result from the prohibition of vehicular site access to the west. However, as discussed within Chapter 3.9, noise effects in this area were not considered significant under the Proposed Project. Although traffic would be routed through Carmel Valley Road, it is unlikely to result in a significant increase in noise levels.
- **Public Services, Recreation, and Utilities** – This alternative would close Rio Road to the west to site vehicular access, however access for emergency service providers and recreational access would be maintained. For fire and police departments, a key or code would be provided for the gate that would separate the development from Rio Road. This gate would be constructed to effectively restrict vehicle egress and ingress while allowing for pedestrian

and bicycle access. Therefore, no additional effects to public services or recreation would result. Effects on utilities would remain similar to those of the Proposed Project.

- **Transportation and Traffic** – Under this alternative, all site access would be via Rio Road east to Carmel Valley Road. As shown in Table 5-1, ADT effects would be similar for the project and for this alternative. As shown in Table 5-2, this alternative would result in similar traffic effects at intersections as the Proposed Project in general but would have additional LOS impacts at the intersection of Rio Road and Carmel Valley Road, which would meet a signal warrant. With addition of Mitigation Measure TR-ALT-1, LOS impacts resulting from this alternative at this intersection would be reduced to less-than significant levels. Although the Hexagon traffic study indicated that PM peak hour operations at Carmel Rancho Blvd and Carmel Valley Road would decline to an unacceptable LOS D, the DKS CVMP Traffic Study results for cumulative conditions, including Rancho Cañada Village indicated LOS C operation at this location (See Table 4-1), and thus, this is not considered a significant impact. As shown in Tables 5-3 and 5-4, this alternative would have the same impacts as the proposed project to Carmel Valley Road segment operations. Likewise, this alternative would have similar impacts to Highway 1 and Highway 68 segment operations.

  Mitigation Measure TR-ALT-1: Signalize of Rio Road / Carmel Valley Road Intersection.
  Installation of a signal at this intersection would mitigate the alternative project impact by improving traffic conditions to an acceptable LOS A during peak hours. If this alternative is advanced, the project proponent shall pay for the signalization of this intersection. The signal shall be installed prior to occupancy of any residential units in the project.

Alternative 6 – Stemple Property Avoidance Alternative

Alternative Characteristics

A portion of the Specific Plan Area is on a property not owned by the project applicant, referred to as the "Stemple Property". The Proposed Project includes the northernmost roadway in the development on this property. This alternative, as shown in Figure 5-1, would redesign the project so that it would not include any permanent development on the Stemple Property. This would reduce the area of the development by several acres, would require realignment of the east-west road on the northern side of the development, and would increase the density of the development slightly.

The Lombardo Land Group has an access easement, as shown on Figure 5-1 on part of the Stemple Property, but this alternative would not use the Stemple Property for new roadways or residences.

Table 5-1. Project and Alternative 5 Conditions

ADT on Carmel Valley Road

			Background		Alternative 5—CVRd Access Only				Project—CVRd & Rio Rd Access		
Segment	24-HR Threshold Volume	Existing LOS	Traffic Volume	Threshold Exceeded	Alternative Daily Trips	Alternative Traffic Volume	Project LOS	Threshold Exceeded	Project Daily Trips	Project Traffic Volume	SThreshold Exceeded
1	8,487	D	4,764	NO	37	4,801	D	NO	37	4,801	NO
2	6,835	C	5,250	NO	38	5,288	C	NO	38	5,288	NO
3	N/A	N/A	9,641	NO	39	9,680	N/A	NO	39	9,680	NO
4	11,600	E	12,579	YES	40	12,619	E	YES	40	12,619	YES
5	12,752	D	14,139	YES	170	14,309	D	YES	170	14,309	YES
6	15,499	D	17,636	YES	173	17,809	D	YES	173	17,809	YES
7	16,340	E	20,874	YES	176	21,050	E	YES	176	21,050	YES
8	48,487	C	25,570	NO	180	25,750	C	NO	180	25,750	NO
9	51,401	C	30,044	NO	2150	32,194	C	NO	10	30,054	NO
10	N/A	E	27,307	NO	1300	28,607	E	NO	500	27,807	NO

Source: DKS Associates, Carmel Valley Master Plan Traffic Study, 2007, ADT 2005

Project trips are NET trips, that is, less the existing golf course trips.

Table 5-2. Project and Alternative 5 Intersection Levels of Service

		Background		Alternative 5 (CV Rd Access Only)				Project with CV Rd & Rio Rd Access			
Intersection	Peak Hour	Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Added Trips to Crit. Movements	Avg. Delay	LOS	Avg. Delay	Added Trips to Crit. Movements
Hwy 1 & Carmel Valley Rd	AM	17.6	B	18.3	B	0.7		18.2	B	18.2	
	PM	24.5	C	27.5	C	3.5		25.9	C	25.9	
Carmel Rancho Blvd & Carmel Valley Rd (2)	AM	19.2	B	20.0	B	1.2		19.2	B	19.2	
	PM	29.8	C	37.7	D	13.6		30.7	C	30.7	
Hwy 1 & Rio Rd	AM	29.2	C	29.3	C	0.0		29.3	C	29.3	
	PM	30.9	C	31.3	C	0.5		31.4	C	31.4	
Crossroads Dwy & Rio Rd	AM	9.4	A	9.5	A	-0.3		9.2	A	9.2	
	PM	10.7	B	10.9	B	-0.3		10.7	B	10.7	
Carmel Center Pl & Rio Rd	AM	5.9	A	6.1	A	0.3		5.9	A	5.9	
	PM	8.2	A	8.5	A	2.1		8.3	A	8.3	
Carmel Rancho Blvd & Rio Rd	AM	2.1	A	2.1	A	0.0		2.6	A	2.6	
(unsignalized)	PM	4.3	A	4.8	A	-0.2		5.6	B	5.6	
Rio Rd & Carmel Valley Rd	AM	17.5	C	28.7	D	12.3	184	17.8	C	17.8	14
(unsignalized)	PM	35.1	E	(1)	F	6.5	233	33.8	D	33.8	19
Laureles Grade & Carmel Valley Rd	AM	(1)	F	(1)	F	0.0	15	(1)	F	(1)	15
(unsignalized)	PM	(1)	F	(1)	F	0.0	18	(1)	F	(1)	18
Laureles Grade & Hwy 68	AM	16.9	B	17.2	B			17.2	B		
	PM	32.7	C	33.5	C			33.5	C		

(1) High delay cannot be calculated.

(2) DKS Associates, using Cumulative Scenario B, which included Rancho Canada Village found that Carmel Rancho Blvd. and Carmel Valley Road had a LOS C (delay of 33.5), which is different than the Hexagon result. The DKS result, which included cumulative buildout was used for project evaluation.

Table 5-3. Project / Alternative 5 Conditions

Peak-Hour Levels of Service on Two-Lane Segments of Carmel Valley Road

Carmel Valley Rd				AM Peak Hour			PM Peak Hour		
Segment	From	To	LOS Std.	2-way Vol	PTSF [a]	LOS	2-way Vol	PTSF [a]	LOS
Background Conditions									
1	Holman Rd	East	C	423	35.4%	A	529	44.2%	B
2	Esquiline Rd	Holman Rd	C	440	35.6%	A	572	45.5%	B
3	Ford Rd	Esquiline Rd	C	824	57.9%	C	889	59.0%	C
4[b]	Laureles Grade	Ford Rd	D	1164	69.7%	C	1211	69.9%	C
5[b]	Robinson Cyn Rd	Laurles Grade	D	1212	74.1%	D	1398	75.3%	D
6[b]	Schulte Rd	Robinson Cyn Rd	D	1617	80.2%	D	1720	81.1%	D
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	1896	84.1%	D	1974	84.3%	D
Alternative 5 Conditions - CV Rd Only									
1	Holman Rd	East	C	426	35.7%	A	533	44.4%	B
2	Esquiline Rd	Holman Rd	C	443	35.8%	A	576	45.8%	B
3	Ford Rd	Esquiline Rd	C	827	58.0%	C	893	59.1%	C
4[b]	Laureles Grade	Ford Rd	D	1167	69.8%	C	1215	70.0%	C
5[b]	Robinson Cyn Rd	Laureles Grade	D	1227	74.6%	D	1416	75.8%	D
6[b]	Schulte Rd	Robinson Cyn Rd	D	1632	80.5%	D	1738	81.4%	D
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	1911	84.3%	D	1992	84.6%	D
Project Conditions CV Rd+Rio Rd Access									
1	Holman Rd	East	C	426	35.7%	A	533	44.4%	B
2	Esquiline Rd	Holman Rd	C	443	35.8%	A	576	45.8%	B
3	Ford Rd	Esquiline Rd	C	827	58.0%	C	893	59.1%	C
4[b]	Laureles Grade	Ford Rd	D	1167	69.8%	C	1215	70.0%	C
5[b]	Robinson Cyn Rd	Laurles Grade	D	1227	74.6%	D	1416	75.8%	D
6[b]	Schulte Rd	Robinson Cyn Rd	D	1632	80.5%	D	1738	81.4%	D
7[b]	Rancho S. Carlos Rd	Schulte Rd	D	1911	84.3%	D	1992	84.6%	D

Table 5-4. Project / Alternative 5 Conditions

Peak-Hour Levels of Service on Multi-Lane Segments of Carmel Valley Road

Carmel Valley Rd					AM Peak Hour			PM Peak Hour		
Seg.	From	To	Dir	LOS Standard	Volume (vph)	Density (pc/mi/ln)	LOS	Volume (vph)	Density (pc/mi/ln)	LOS
Background Conditions										
8	Rancho S. Carlos Rd	Rio Rd	EB	C	858	8.4	A	1299	12.6	B
			WB	C	1140	13.0	B	1065	10.6	A
9	Carmel Rancho Bl	Rio Rd	EB	C	1117	11.4	B	1537	14.6	B
			WB	C	1476	16.0	B	1289	13.8	B
10	Carmel Rancho Bl	Hwy 1	EB	C	1197	12.3	B	1243	10.5	A
			WB	C	1015	12.3	B	1222	13.6	B
Alternative 5 Conditions - CVRd Access Only										
8	Rancho S. Carlos Rd	Rio Rd	EB	C	873	8.6	A	1302	12.6	B
			WB	C	1140	13.0	B	1080	10.7	A
9	Carmel Rancho Bl	Rio Rd	EB	C	1147	11.7	B	1715	16.3	B
			WB	C	1615	17.5	B	1356	14.5	B
10	Carmel Rancho Bl	Hwy 1	EB	C	1215	12.5	B	1341	13.7	B
			WB	C	1092	13.3	B	1254	13.9	B
Project Conditions - CVRd & Rio Rd Access										
8	Rancho S. Carlos Rd.	Rio Rd	EB	C	873	8.6	A	1303	12.7	B
			WB	C	1140	13.0	B	1081	10.7	A
9	Carmel Rancho Bl	Rio Rd	EB	C	1109	11.4	B	1583	15.1	B
			WB	C	1483	16.1	B	1273	13.7	B
10	Carmel Rancho Bl	Hwy 1	EB	C	1202	12.3	B	1295	13.3	B
			WB	C	1038	12.6	B	1220	13.5	B

Feasibility

In concept this alternative is feasible as it is similar to the proposed project, but in a slightly smaller area.

Ability to Meet Project Objectives

This alternative would meet the objectives of the project.

Impact Analysis

This alternative would have virtually the same impacts as the Proposed Project as it is expected to have the same number of units and other infrastructure, with only a slight reduction in project area. The residential area would be slightly more dense than the Proposed Project.

- **Aesthetics and Visual Resources** – This alternative would have virtually the same visual and aesthetic impacts as the Proposed Project. The slight increase in density is not likely to substantially change the visual perception of the project.
- **Air Quality** – The number of trips generated from this alternative would be identical to that of the Proposed Project. Opportunities for non-vehicular travel would be the same as the Proposed Project. In addition, this alternative would result in similar construction related emissions. As such, air quality impacts are considered similar to that of the Proposed Project.
- **Biological Resources** – This alternative would not likely substantially reduce or increase impacts on biological resources as the area of reduced impact on the Stemple property is disturbed coyote brush scrub and is unlikely to contain special status plant or wildlife species. Thus, biological impacts would be similar to the Proposed Project.
- **Cultural Resources** – This alternative would have similar effects as the Proposed Project if undiscovered resources were encountered during construction.
- **Geology and Soils** – Effects on geology and soils under this alternative would be similar to that of the Proposed Project.
- **Hazards and Hazardous Materials** – No additional hazardous materials effects would result under this alternative. This alternative would have similar effects as the Proposed Project.
- **Hydrology and Water Quality** – This alternative would not substantially change impacts on hydrology or water quality relative to the Proposed Project although the area of impermeable surfaces may be slightly reduced, depending on design.
- **Land Use, Population, and Housing** – Effects on land use, population, and housing under this alternative would be the same as the Proposed Project.

- **Noise** – This alternative would have similar noise impacts as the proposed project. Noise levels would be lower for new houses along the north side of the development and would be higher for some new houses along the south side of the development than the Proposed Project due to the relocation of roadways. Noise impacts outside the Specific Plan would be the same as the Proposed Project.
- **Public Services, Recreation, and Utilities** – This alternative would have the same impacts on public services, recreation, and utilities as the Proposed Project.
- **Transportation and Traffic** – Under this alternative, site access would be the same as the Proposed Project, but the roadways through the project would be redesigned to avoid the Stemple property. Overall traffic generation and access to and from the site would be the same as the Proposed Project.

While this alternative would avoid one private piece of property, which may ultimately prove to be necessary unless there is a willing seller, this alternative would not avoid or substantially reduce a significant environmental impact of the proposed project. If this alternative were to be advanced, the impact analysis and mitigation recommended for this alternative would be the same as the Proposed Project and this EIR could be used to comply with CEQA for this alternative.

Environmentally Superior Alternative

As noted above, since the Low-Density Alternative does not meet most of the project goals and objectives, it is not included in the identification of the environmentally superior alternative, which per CEQA, must meet most of the project goals and objectives.

As described above, Alternative 6 (Stemple Property Avoidance Alternative) has virtually the same impacts as the Proposed Project and thus are considered the same for this identification of the environmentally superior alternative.

For direct and indirect impacts, the No-Project Alternative would be the environmentally superior alternative compared with the Proposed Project and with the feasible alternatives analyzed above because it would avoid the physical environmental effects of development on the site. It would also avoid inconsistency with the CVMP land use designations and zone, and it would avoid the indirect effects related to traffic generation.

However, for Carmel Valley as a whole, cumulatively the No-Project Alternative would *not* be the environmentally superior alternative as it would cumulatively result in more highly dispersed pattern of residential development that would require more land, more vehicular travel, and likely more extensive infrastructure (in particular concerning water supply) than the Proposed Project and the other feasible alternatives analyzed.

CEQA requires the identification of another alternative as the environmentally superior alternative in the event that the No-Project Alternative is not identified as such.

For direct and indirect impacts, the Medium-Density Alternative would be the environmentally superior alternative compared to the Proposed Project, Alternative 5 (Proposed Project with Rio Road Extension Emergency Access Only) and Alternative 6 (Stemple Property Avoidance Alternative) because it would have somewhat lessened aesthetic impacts and would result in substantially less indirect effects related to traffic generation.

However, for Carmel Valley as a whole, cumulatively the Medium-Density Alternative would still *not* be environmentally superior alternative as it would cumulatively result in more highly dispersed pattern of residential development that would require more land, more vehicular travel, and likely more extensive infrastructure (in particular concerning water supply) than the Proposed Project, Alternative 5 (Proposed Project with Rio Road Extension Emergency Access Only) and Alternative 6 (Stemple Property Avoidance Alternative).

For direct and indirect impacts, Alternative 5 (Proposed Project with Rio Road Extension Emergency Access Only) would also *not* be environmentally superior alternative compared to the Proposed Project because it would not avoid or substantially avoid significant direct or indirect impacts of the Proposed Project and would actually increase traffic impacts relative to the intersection of Rio Road and Carmel Valley Road. However, this impact could be readily mitigated to a less-than-significant level with signalization of this intersection. Cumulatively, Alternative (the Proposed Project with Rio Road Extension) has the same effects as the Proposed Project and Alternative 6 (Stemple Property Avoidance Alternative). Therefore, for Carmel Valley as a whole, cumulatively the Proposed Project or Alternative 6 (Stemple Property Avoidance Alternative) *would* be environmentally superior to the No Project Alternative and the other feasible alternatives as either alternative would cumulatively result in a less highly dispersed pattern of residential development that would require less land, less vehicular travel, and likely less overall infrastructure, in particular in that the Proposed Project would result in a net decrease in withdrawals from the Carmel River, whereas assured water supplies in other parts of Carmel Valley are uncertain.

Alternatives Considered but Dismissed from Further Analysis

The following alternatives were considered but ultimately were dismissed from further analysis because they were determined to be infeasible, did not meet most of the project objectives, or did not avoid or substantially reduce one or more significant impacts of the Proposed Project.

CEQA defines "feasibility" as follows: "*capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.*" Project objectives and Proposed Project impacts were described above at the beginning of this Chapter.

Compliance with Existing Zoning Alternative

The current zoning in the project area is Public/Quasi-Public. The following land uses are permitted under the Public/Quasi-Public zoning: crop and tree farming; grazing of cattle, sheep, and goats; water system facilities; home occupations; public recreational uses; golf courses and country clubs; mineral and natural materials removal; and public/quasi-public facilities such as hospitals, hospices, churches, cemeteries, firehouses, schools, and convalescent homes. This alternative would include one or more of these uses in the 40-acres proposed for housing under the Proposed Project.

This alternative would not meet most of the project objectives because it would not provide housing and was thus dismissed from further evaluation.

Care Facilities Prohibition Alternative

One scoping comment suggested that secondary units, care facilities, and day care facilities should be prohibited from the development and Workforce I and Workforce II units should be limited to one family per unit. The Rancho Cañada Village will prohibit secondary units, but would allow care facilities and day care facilities. Per County code, dwelling units are limited to one family per unit, and thus the units at Rancho Cañada Village will be limited to one family per unit. Thus, this alternative is the same as Proposed Project but would prohibit care facilities inside the development.

This alternative is feasible as one could technically prohibit care facilities. In general, this alternative would meet most of the project objectives, as the project does not hinge on having care facilities within the development.

However, this alternative does not avoid or substantially lessen any of the identified significant or cumulative impacts of the Proposed Project. Prohibition of care facilities within the Specific Plan is not likely to substantially lower traffic generation and could actually increase it as residences would need to seek care facilities in other off-site locations; however, this might be offset by traffic resultant from off-site residences seeking to use a care facility within the Specific Plan area. At any rate, such a prohibition is not likely to reduce traffic substantially, if at all. Small-scale care facilities, as allowed by the Specific Plan, would not by themselves result in noticeable significant impacts to neighboring land uses, and would be governed by applicable regulations and standards within the Specific Plan.

Flood Control Alternatives

The applicant initially proposed development within the designated floodway along Carmel River. Several Lower Carmel Valley flood control alternatives were considered pursuant to comments made in scoping. A floodwall/levee alternative was developed by Jones & Stokes to examine potential ways to lower site fill importation volumes. These alternatives are considered below.

Floodway Development Alternative

The original application proposed development in the designated floodway of the Carmel River. This application was rejected by the County due to inconsistency with County policies for flood protection. The application was revised to move development out of the floodway for the currently proposed project. This alternative is not considered feasible as it violates County flood control policies

Lower Carmel Valley Flood Control Alternatives

A comment in scoping suggested that flood control improvements should be incorporated into the project consistent with recommendations for flood control for lower Carmel Valley found in the *Monterey County Master Drainage Plan, Lower Carmel Valley Watersheds* (Koretsky-King and Associates 1975) and in the 2002 *Lower Carmel River Flood Control Project, Draft Final Report (*Philip Williams & Associates Ltd. 2002). Both of these assessments were aimed at reducing flood damages to properties along the lower Carmel River. The purpose of these studies was to inform broader efforts at flood control by the Monterey County Water Resources Agency (Monterey County Water Resources Agency 2003).

As described in Chapter 3.2 the project is not estimated to increase flooding upstream or downstream of the Rancho Cañada property. Mitigation is identified to address certain local drainage, scour/erosion, and stormwater runoff impacts. Thus, while additional flood control improvements might be feasible that could also have benefit to other adjacent properties, such improvements are not necessary to address the impacts of this project, and thus would be in excess of mitigation proportionality and nexus allowed by CEQA. For this reason, alternatives seeking to address pre-existing flood risk (as opposed to project-related flood risks) are beyond the scope of this project and mitigation for this project.

As an ancillary benefit, the raising of Rio Road as part of the Proposed Project would help to meet some of the goals of the improvements proposed for CSA 50, (the area to the west and downstream of the project site) by limiting one path of current floodwaters into CSA 50.

Floodwall/Levee Alternative

The proposed project intends to provide flood control by raising the elevation of the residential site above the elevation of the 100-year flood elevation and by increasing the elevation of the tie-back levee to the west (along the prospective Rio Road extension). This alternative would not raise the elevation of the residential site but would raise the elevation of the tie-back levee above the 100-year flood elevation. Instead, a levee/floodwall would be constructed along the southern perimeter of Rancho Cañada Village and would transition into the raised tie-back levee. This alternative would still require the same amount of excavation in the existing golf course to compensate for the loss of floodplain due to construction of the floodwall/levee but would likely require no fill to be imported from off-site for elevating the site as the golf course excavation would produce ample material (120,000 cubic yard) for levee construction and sit leveling. This alternative would likely have a similar effect on flooding and river velocities as the project because the floodplain would have a similar cross-section as that with the Proposed Project.

This alternative is nominally feasible, although with the residential development at a lower elevation, pumping may be necessary to drain the project site drainage/runoff could no longer flow via gravity due to the presence of the floodwall/levee. This alternative would meet most of the project goals and objectives as it would allow the residential development and the habitat elements to proceed. Site design would need to be altered to accommodate the floodwall/levee footprint.

Overall, this alternative would result in similar impacts as the Proposed Project within most impact subject areas. The alternative would require less fill than the Proposed Project because of the lower elevation for the residential area. This would lower or eliminate the need for as much importation of fill as the Proposed Project from off-site and the associated air emission impacts, but would not necessarily avoid the need for mitigation for diesel emissions. However, as discussed in Chapter 3.8, these impacts can be mitigated to a less-than-significant level.

While this alternative would affect the site aesthetics as the levee/floodwall would affect some views from the residential development of the habitat/open space are and the river, this is not considered a significant impact as these residential site views do not exist today (and thus are not part of the baseline), and views can be obtained by a short walk to the habitat/open space areas with ease.

Because the only impact reduced by this alternative (construction emissions) can be readily mitigated through proposed mitigation in the Draft EIR, this alternative was not considered further.

Reclaimed Water Reuse Alternative

A scoping comment suggested that the project should be required to use reclaimed water for site irrigation and for the remaining golf course. This alternative would require the project applicant to use reclaimed water to irrigate remaining golf course and all landscaping in the Village.

This alternative would lower the potable water use relative to the Proposed Project. However, since the project overall will lower use of Carmel River aquifer supply, the project will not result in a significant impact on the Carmel River aquifer. Thus, this alternative would not avoid or substantially lessen a significant adverse impact of the Proposed Project and was not considered further.

Rio Road Extension Alternative

The adopted CVMP circulation element (Monterey County 1986) included an extension of Rio Road from its existing terminus eastward and northward to link with Carmel Valley Road. This alternative would meet the project objectives.

This alternative is considered technically feasible as land is available to complete the extension and the Rancho Cañada Village development could be designed to accommodate a through road. However, the applicant does not control the land west of the project and thus securing the land, absent public agency involvement, may be problematic and could imperil the logistical feasibility of this alternative.

The CVMP Traffic Study (DKS Associates 2007) and the associated SEIR (Jones & Stokes 2007) has identified that the Rio Road extension is not necessary in order to address cumulative traffic impacts along Carmel Valley Road or other CVMP roadways. Thus, the County has no current planning to complete this extension. Lacking a public agency involvement, the applicant would have no choice but to acquire the necessary land through a willing-seller approach were this alternative to be advanced. The applicant has not proposed this alternative, but rather access to the west and east of the project with design of internal development roads to discourage cut-through traffic.

However, this alternative would not avoid or substantially reduce any significant impacts of the Proposed Project. Extension of Rio Road as a through road would likely divert traffic from Carmel Valley Road as motorists may use Rio Road as an alternative route of travel to and from the mouth of the Valley to avoid congestion on Highway 1. This could result in increased traffic impacts relative to the Proposed Project at Highway 1/Rio Road and Rio Road/Carmel Valley Road. In addition, traffic noise would increase west of the project along Rio Road that might exceed residential standards.

Because this alternative would not avoid or substantially reduce any significant impacts of the Proposed Project and has been determined to not be necessary as

part of the CVMP circulation program, this alternative was dismissed from further consideration.

Traffic/Transit Improvements Alternative

In scoping, comments suggested the following additions to the project: (1) a MST bus stop inside the project; (2) a stoplight at Via Nona Marie Road and Rio Road; and (3) move the stoplight at the middle school to the entrance to Rancho Cañada.

As described in Chapter 3.7, Monterey-Salinas Transit (MST) provides bus service along Carmel Valley Road in front of the project site. The 24 line provides service between Carmel Valley Village and the Monterey Transit Plaza with 60-minute headways during weekday peak hours. Lines 4, 5, 24, and 36 provide service in the shopping area at the mouth-of-the-valley and travel in the vicinity of the project study area. A bus stop is located in the project vicinity, on Carmel Valley Road near the Rio Road/Carmel Valley Road intersection.

While feasible to place a bus stop inside the development itself, this is not necessary to address any significant impact of the project that is not otherwise addressed by other mitigation. It is unlikely that, given the proximity to an existing bus stop, the addition of such a bus stop would avoid or substantially reduce any significant impacts of the Proposed Project as it is unlikely to substantially change the transport modes of the residents of the Specific Plan area.

The addition of a signal at the currently unsignalized intersection of Rio Road and Via Nona Marie Road is not necessary to address a significant impact at this location. This site has low traffic volumes at present and would continue to have low volumes in the future that would not result in level of service impacts. All road extensions will meet County requirements for safety and thus a signal is not necessary for safety purposes at this location.

Movement of the stoplight from the middle school to the intersection of Rio Road and Carmel Valley Road is not necessary to avoid or substantially reduce a significant impact of the Proposed Project. As presented in Chapter 3.7, the Proposed Project would not have a significant impact on the Rio Road / Carmel Valley Road intersection or on Carmel Valley Road west of this location.

Thus, while feasible, these suggestions were not carried forward for further analysis as they do not avoid or substantially reduce significant impacts of the Proposed Project.

Visitor-Serving Development

Prior to the current application, the owner of the property had considered developing a resort/hotel complex in the location of the current project that

included 175 visitor-serving units. The CVMP allows for developing of up to 175 units at the project site.

This alternative is considered feasible as the project site is available, water is available to serve the development, mitigation is available to address project impacts (like it is for the Proposed Project), and the project is consistent with the CVMP.

This alternative would avoid the land use/zoning inconsistency of the Proposed Project. Project site impacts are likely similar to the Proposed Project.

However, this alternative would not meet most of the project objectives because it would not provide housing, and thus it was dismissed from further consideration.

Chapter 6
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