

# Existing Conditions and Resources Inventory Report



Hatton Canyon Property



May 2013 – Rev. December 2013

**AECOM**



# TABLE OF CONTENTS

Section	Page
<b>1 INTRODUCTION.....</b>	<b>1-1</b>
<b>2 LAND USE AND POLICY REVIEW.....</b>	<b>2-1</b>
2.1 Regional Land Uses.....	2-1
2.2 Land Use and Zoning .....	2-2
2.3 Relevant Planning Policies.....	2-7
2.1.1 Greater Monterey Peninsula Area Plan .....	2-7
2.4 Easements.....	2-7
2.5 Existing Facilities .....	2-7
<b>3 SIGNIFICANT RESOURCE VALUES.....</b>	<b>3-1</b>
3.1 Physical Resources .....	3-1
3.1.1 Climate .....	3-1
3.1.1 Topography .....	3-1
3.1.2 Geology and Seismicity.....	3-1
3.1.3 Paleontology.....	3-2
3.1.4 Soils.....	3-2
3.1.5 Hydrology, Water Quality, and Floodplains .....	3-2
3.1.6 Climate Change and Sea Level Rise .....	3-8
3.2 Natural Resources.....	3-13
3.2.1 Plants .....	3-13
3.2.2 Animals .....	3-35
3.2.3 Ecology.....	3-36
3.2.4 Monitoring.....	3-41
3.3 Cultural Resources .....	3-41
3.3.1 Prehistoric Background .....	3-41
3.3.2 Ethnographic Background.....	3-45
3.3.3 Archaeological Investigations .....	3-48
3.3.4 Historic Background.....	3-48
3.3.5 Architectural Resources and Landscapes .....	3-50
3.3.6 Collections.....	3-50
3.4 Aesthetic Resources .....	3-50
3.4.1 Visual Resources and Viewsheds.....	3-50
3.4.2 Designated Scenic Areas and Routes .....	3-50
<b>4 RECREATION RESOURCES.....</b>	<b>4-1</b>
4.1 Regional Recreation .....	4-1
4.1.1 Federal Parks .....	4-1
4.1.2 California State Parks.....	4-1
4.1.3 Regional Parks.....	4-1
4.2 Unit Recreation.....	4-2
4.2.1 Recreational Activities .....	4-2
4.2.2 Recreation Facilities .....	4-2
4.2.3 Accessibility .....	4-2
4.3 Patterns and Levels of Recreational Use .....	4-3

# TABLE OF CONTENTS

Section	Page
4.3.1 Regional Patterns and Use.....	4-3
4.3.2 Patterns and Use at Hatton Canyon.....	4-4
<b>5 INTERPRETATION AND EDUCATION.....</b>	<b>5-1</b>
5.1 Facilities.....	5-1
5.2 Themes.....	5-1
5.3 Programs and Special Events.....	5-1
5.4 Regional Interpretation.....	5-1
<b>6 ACCESS, CIRCULATION AND TRANSPORTATION.....</b>	<b>6-1</b>
6.1 Access.....	6-1
6.2 Roads/Circulation.....	6-1
6.2.1 Planned Roadway Improvements.....	6-1
6.3 Parking.....	6-1
6.4 Traffic Volumes.....	6-1
6.5 Alternative Modes of Transportation.....	6-2
<b>7 PARK OPERATIONS AND MAINTENANCE.....</b>	<b>7-1</b>
7.1 Existing Facilities.....	7-1
7.2 Staff and Services.....	7-1
7.3 Concessions.....	7-1
7.4 Contracts and Agreements.....	7-1
7.5 Utilities and Services.....	7-1
7.5.1 Water and Wastewater Services.....	7-1
7.5.2 Electricity.....	7-2
7.5.3 Phone and Telecommunications.....	7-2
7.5.4 Solid Waste.....	7-2
7.5.5 Security and Emergency Services.....	7-2
<b>8 SUPPORT.....</b>	<b>8-1</b>
8.1 Partnerships.....	8-1
8.1.1 Big Sur Land Trust.....	8-1
8.1.2 Transportation Agency of Monterey County.....	8-1
8.1.3 Monterey Peninsula Regional Park District.....	8-1
<b>9 REFERENCES.....</b>	<b>9-3</b>

## Appendices

- A Regional CNDDDB Occurrences
- B Cultural Resources - Confidential

## Exhibits

Exhibit 1-1 Regional Location of Hatton Canyon.....	1-2
Exhibit 1-2 Local Context of Hatton Canyon.....	1-3
Exhibit 1-3 Major Features.....	1-5

# TABLE OF CONTENTS

		<b>Page</b>
Exhibit 2-1	Designated Open Space Areas .....	2-5
Exhibit 3-1	Faults in the Vicinity of Hatton Canyon.....	3-3
Exhibit 3-2	Soil Types within Hatton Canyon .....	3-5
Exhibit 3-3	Watersheds .....	3-7
Exhibit 3-4	Floodplain Map of Hatton Canyon.....	3-9
Exhibit 3-5	Projected Effects of Sea Level Rise at Hatton Canyon .....	3-15
Exhibit 3-6	Vegetation Communities and Other Landscapes at Hatton Canyon .....	3-17
Exhibit 3-7	Wetlands within Hatton Canyon .....	3-19
Exhibit 3-8	Special-Status Plant Occurrences .....	3-31
Exhibit 3-9	Fire Hazards in the Vicinity of Hatton Canyon.....	3-33
Exhibit 3-10	Special-Status Animal Occurrences .....	3-37
Exhibit 3-11	Scenic Features at Hatton Canyon.....	3-53
Exhibit 6-1	Regional Circulation.....	6-3
Exhibit 7-1	Facilities within Hatton Canyon.....	7-3

## **Tables**

Table 3-1	Projected Effects of Climate Change on the Central California Coastal Region .....	3-11
Table 3-2	Sea-Level Rise Projections using 2000 Sea Levels as a Baseline <sup>1</sup> .....	3-12
Table 3-3	Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon .....	3-23
Table 3-4	Special-Status Wildlife Known from or with the Potential to Occur in Hatton Canyon.....	3-39
Table 4-1	Annual Visitation to Regional State Parks .....	4-4

# ACRONYMS

AADT	annual average daily traffic
ADA	Americans with Disabilities Act
AMBAG	Association of Monterey Bay Area Governments
BSLT	Big Sur Land Trust
Cal Am	California American Water Company
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAWD	Carmel Area Wastewater District
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSU	California State University
CWA	Clean Water Act
DOM	Department Operations Manual
ESA	Endangered Species Act
FWARG	Far Westerns Anthropological Research Group, Inc.
GHG	greenhouse gas
IMAP	Inventory, Monitoring, and Assessment Program
MPPRPD	Monterey Peninsula Regional Park District
MRWMD	Monterey Regional Waste Management District
MST	Monterey Salinas Transit
NRCS	Natural Resources Conservation Service
PG&E	Pacific Gas and Electric
SB	State Beach
SNR	State Natural Reserve
TAMC	Transportation Agency for Monterey County
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

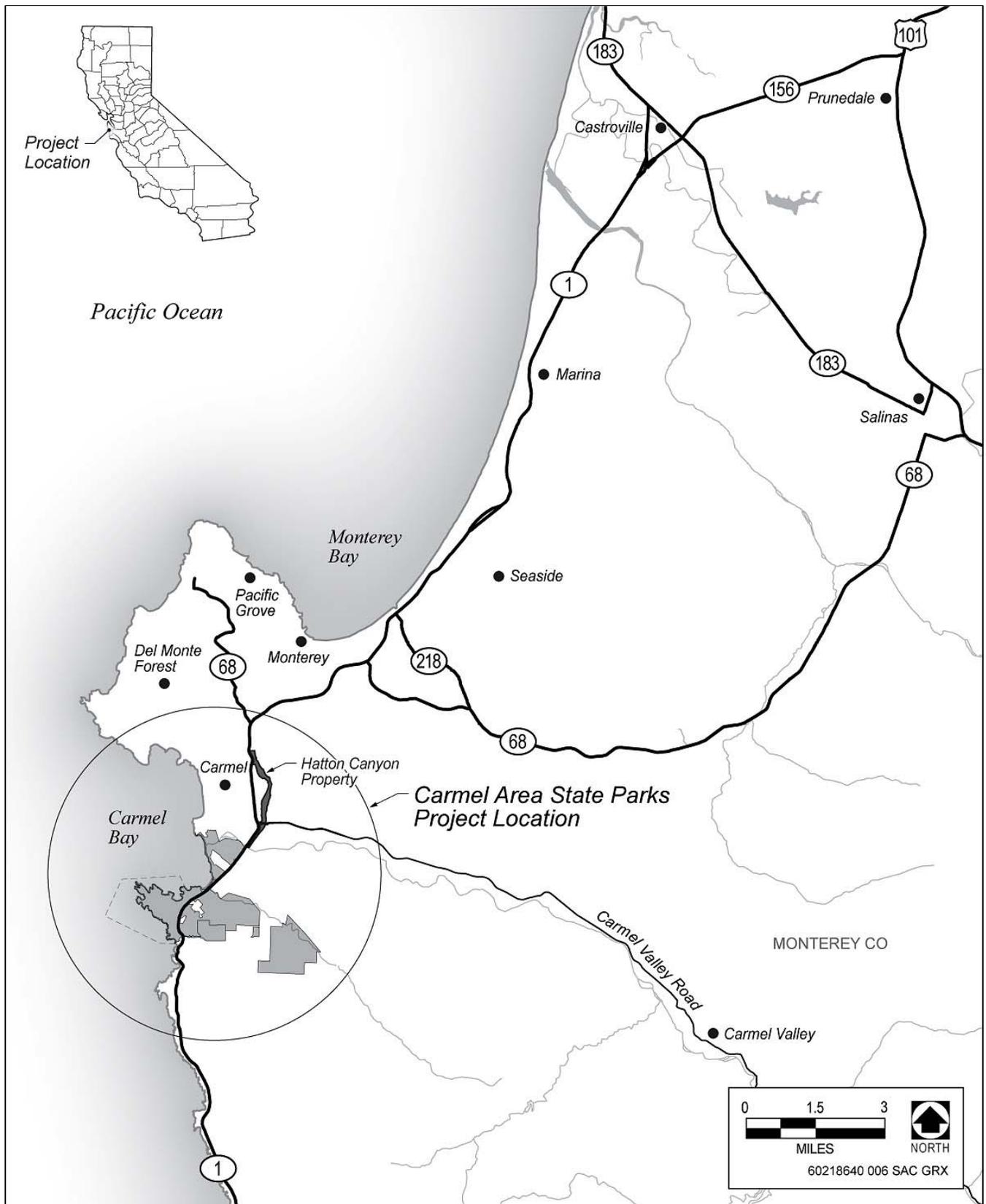
# 1 INTRODUCTION

This Existing Conditions and Resources Inventory Report was prepared in support of development of a General Plan for the Hatton Canyon property (Hatton Canyon) and provides a detailed overview of the existing physical conditions at the property. Information presented in this report will inform the planning process, including the development of alternatives for use of the park unit, and will also serve as the baseline against which proposed changes within Hatton Canyon will be evaluated. This property is one of four California State Parks units being evaluated through this planning process. The other California State Parks properties included in the current General Plan process are Point Lobos State Natural Reserve (SNR), Carmel River State Beach (SB), and an unclassified property commonly known as Point Lobos Ranch. Separate Existing Conditions and Resource Inventory Reports have been prepared for these park units.

There is currently no General Plan for Hatton Canyon and this unit is not officially named or classified. Naming and classification of this unit is one of the goals of the current planning effort. This report includes information on land use, significant physical, biological, cultural, and aesthetic resources, and recreation values at Hatton Canyon. It was prepared based on an extensive review of existing information, supplemented with photos and notes from a site tour conducted at the onset of the planning process and coordination with park staff, including resource specialists and planners from the Monterey District and Planning Division of California State Parks, and other agencies and organizations.

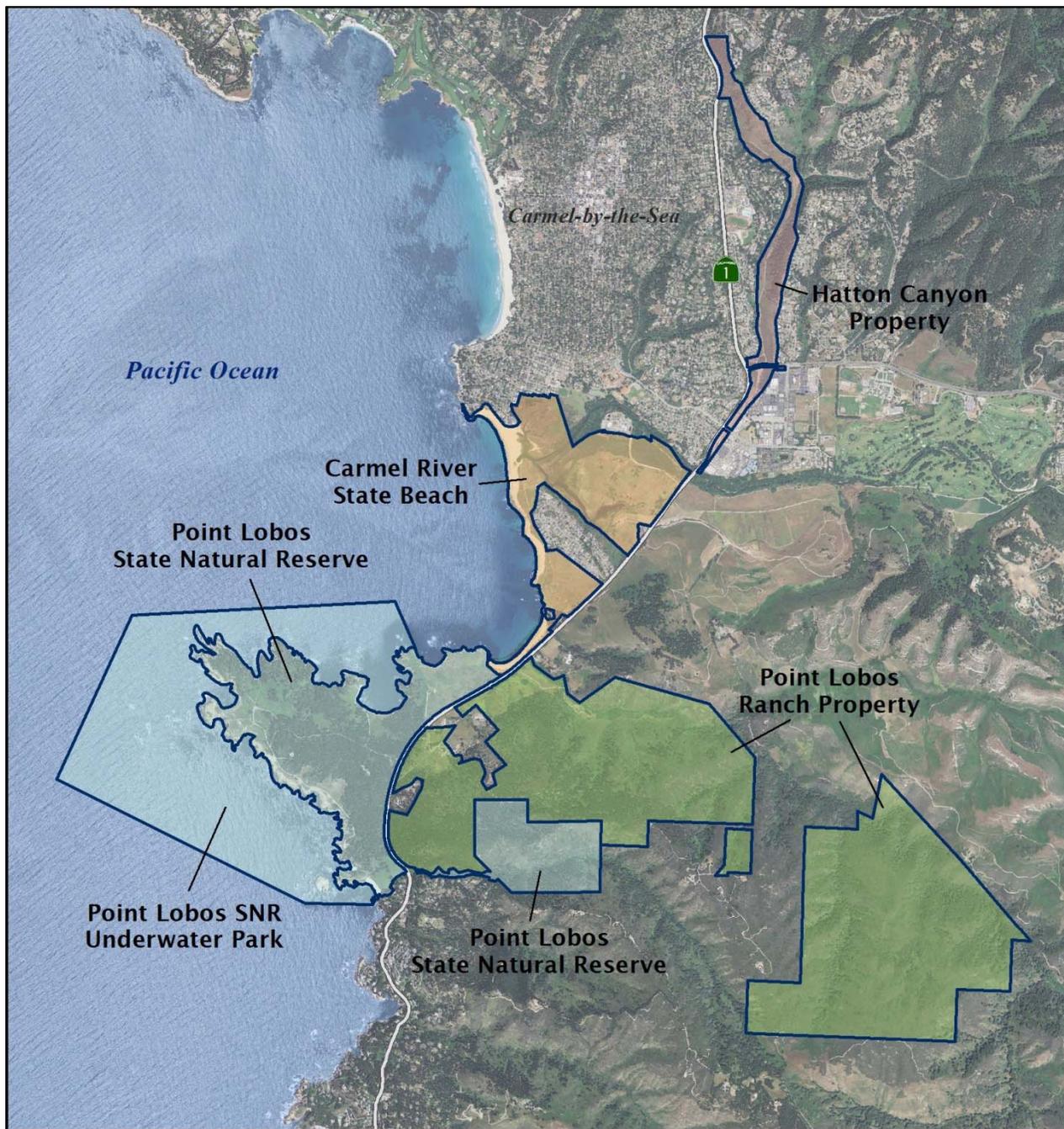
Hatton Canyon is located in coastal Monterey County east of Highway 1 and the City of Carmel-by-the-Sea. The property encompasses approximately 130 acres and is made up of two parcels separated by Carmel Valley Road. The northern portion of the property is north of Carmel Valley Road and encompasses approximately 108 acres and the southern portion of the property south of Carmel Valley Road encompasses approximately 22 acres. The regional location of Hatton Canyon is shown in Exhibit 1-1. Exhibit 1-2 shows the property in a local context and in relation to the other park units also included in development of the current General Plan. Major features in the vicinity of Hatton Canyon are shown in Exhibit 1-3.

The California Department of Transportation (Caltrans) originally acquired the right-of-way through Hatton Canyon in 1956 for potential use as a new alignment of Highway 1. After several lawsuits challenging the environmental analysis for the Highway 1 bypass, the plan to build the bypass officially ended in 1999, when the Transportation Agency for Monterey County (TAMC) voted to transfer the state funds earmarked for the bypass to pay for improvements on Highway 101. In 2001 the State Legislature enacted Assembly Bill No. 434 that rescinded the creation of the Highway 1 realignment project and declared that the land was surplus property (TAMC 2009). The property was subsequently acquired by California State Parks in 2001. This property was acquired for habitat preservation (including wetlands, riparian habitat, and pine forest), to provide open space and recreation in an urban environment, and to enhance connectivity with other state and regional parks. The southern portion of the property, also known as “Marathon Flats,” is used for a number of special events.



**Exhibit 1-1**

**Regional Location of Hatton Canyon**



## CARMEL AREA STATE PARKS GENERAL PLAN

### Local Context

-  Carmel Area State Parks
-  Highway

Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.  
 Source: DPR 2012  
 Aerial Imagery: NAIP 2012 X 60218640 001 4/13



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Exhibit 1-2

Local Context of Hatton Canyon

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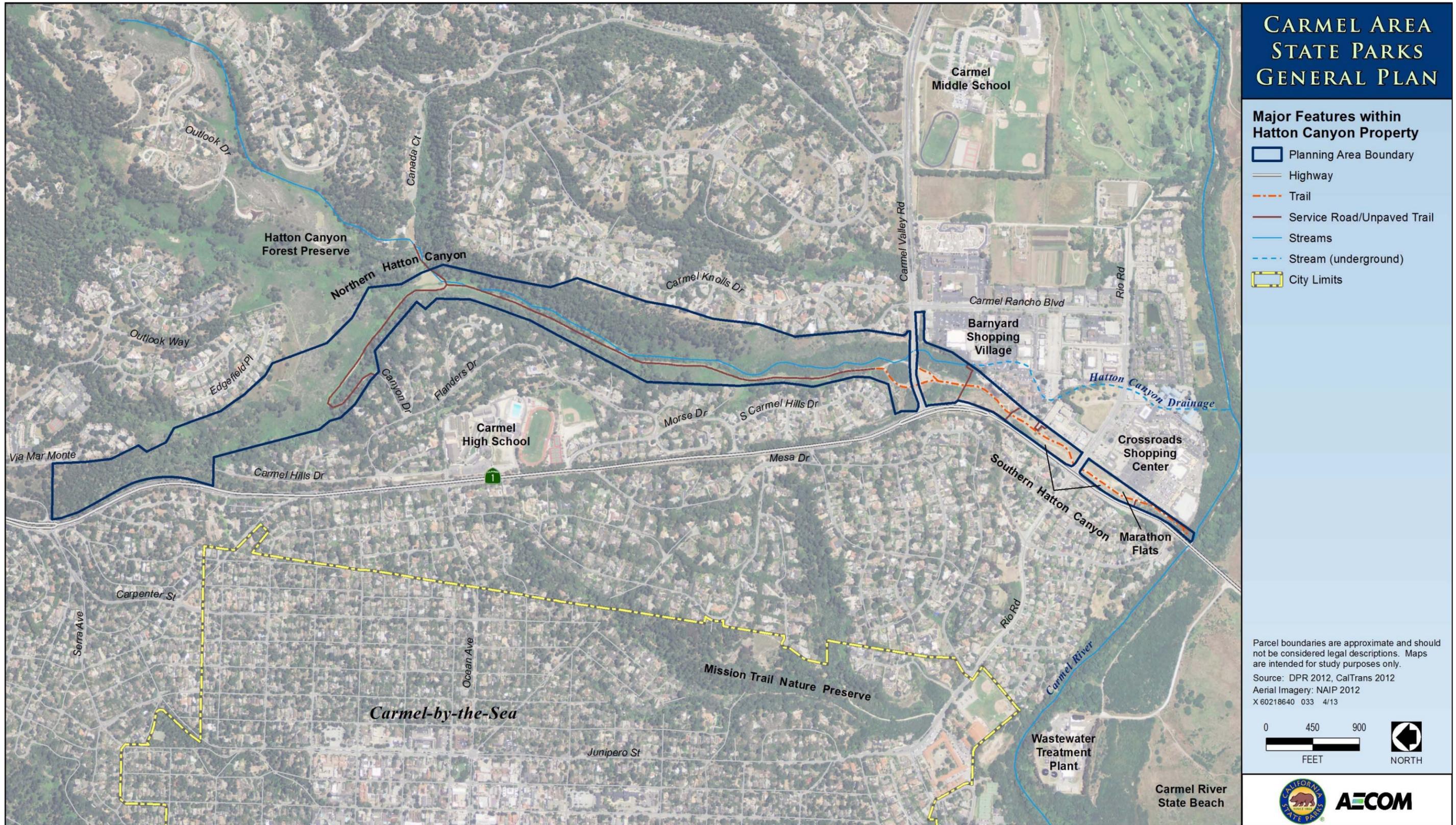


Exhibit 1-3

Major Features



## 2 LAND USE AND POLICY REVIEW

### 2.1 REGIONAL LAND USES

Founded in 1850, Monterey County was one of the first counties established in California. Much of the current land use in the county is dictated by the natural landforms. Monterey County lies between the Pacific Ocean and the Gabilan Mountain Range, which is part of the California Coastal Ranges running in a northwest-to-southeast direction along the California coastline. Major land uses within the county include recreation, agriculture, urban development (housing and industrial), mining extraction, and transportation. The 2010 General Plan Update for the county establishes land use policies to designate general distribution and intensity of various land uses. The main vision of the 2010 Land Use Element is to create a general framework that encourages growth within or near developed/developing areas in order to reduce impacts to agricultural production, natural resources, and public services. Most of the intense land uses are concentrated in the northern third of the county. The following is the land use breakdown with respect to land coverage percentage in the county (Monterey County 2010):

Agriculture	60%
Public/Quasi Public (e.g., hospitals)	28%
Residential	0.7%
Commercial	0.3%
Industrial	0.3%
Other and Federal lands	remaining

Several other plans that provide regional land use guidance specifically in the Carmel coastal segment of the county have also been adopted. These include the *Greater Monterey Peninsula Area Plan* (Monterey County 1997), a *Conservation Plan for Three Ranches* (Monterey County 1966a), *Rancho San Carlos Master Plan* (Monterey County 1966b), *Carmel Valley Master Plan* (Monterey County 1986), and *Carmel Area Land Use Plan* (Monterey County 1983). The development policies and land use recommendations in all of these plans follow the basic objective of maintaining the unique scenic and recreational resources of the Carmel coastal area by holding developments to a standard of “minimal visibility”, such that it is subordinate to the existing natural grandeur of the coastline and adjacent coastal terraces.

The *Greater Monterey Peninsula Area Plan* is intended to provide refinement of the County General Plan to reflect local concerns which could not be addressed at the county-wide level. The primary land uses in the Carmel Coastal segment envisioned in the *Greater Monterey Peninsula Area Plan* include residential, commercial, recreational, resource conservation, and agricultural. Public uses in the Carmel area include Point Lobos SNR, Carmel River SB, county and city parks, elementary schools, a day-care school, churches, and a sewage treatment plant.

Regionally major concerns related to new development in the *Greater Monterey Peninsula Area Plan* include:

- ▶ Creation of additional recreational demands on the existing state reserve and beaches.
- ▶ Degradation of the visual quality of the scenic coastline.
- ▶ Continued encroachment affecting the quality of life in existing communities.
- ▶ Preservation of open space
- ▶ Continued encroachment on open space.

- ▶ Scarcity of water and waste services.

Land use in portions of Monterey County that are within the coastal zone is also influenced by the California Coastal Act. Local jurisdictions implement the California Coastal Act in coordination with the California Coastal Commission through Local Coastal Programs. The Local Coastal Programs contain the ground rules for future development and protection of coastal resources. Hatton Canyon is located immediately adjacent to, but not in the coastal zone.

Many parks that offer recreation opportunities are available in the region (Exhibit 2-1). Approximately 14% of the county is devoted to parks and recreation facilities that are owned by various federal, state, and local agencies (Monterey County 2010). The U.S. Bureau of Land Management (BLM) manages lands in the Monterey area, including Fort Ord National Monument, that provide a variety of recreation opportunities. In the Carmel and Carmel Valley areas, the MPRPD operates Garland Ranch Regional Park, Thomas Open Space, Blomquist Open Space Preserve, Cachagua Community Park, Carmel Valley Community Park, and Palo Corona Regional Park (MPRPD 2012a). The Hatton Canyon Forest Preserve, located adjacent to Hatton Canyon, is also owned by MPRPD. However, this property is not currently open to the public.

The Monterey County Parks Department owns several parks in the area including Jacks Peak County Park and Martin Canyon. Mission Trails Regional Park, owned by the City of Carmel, is also a well-used corridor connecting the Carmel Mission to surrounding neighborhoods (Monterey County Parks 2012).

Other California State Parks properties in the immediate area include Point Lobos SNR, Carmel River SB, the unclassified Point Lobos Ranch property, and Garrapata State Park. California state parks farther north include Asilomar State Beach and Conference Grounds, Monterey State Historic Park, Monterey State Beach, Fort Ord Dunes State Park, Marina State Beach, and Salinas River State Beach. There are also a number of state parks in the Big Sur area. These parks are discussed in more detail in Section 4, Recreation Resources.

Popular recreation opportunities within the region include the Monterey Bay Aquarium, Cannery Row, Fisherman's Wharf, 17-Mile Drive, and various golf courses including Pebble Beach. Numerous hotel/resorts, restaurants, and shopping areas are located near Hatton Canyon. Visitors come to the Monterey Peninsula for a variety of recreation experiences, including sightseeing, scenic driving, fishing, diving, surfing, wine tasting, and golfing. Visitors also come to the Monterey area for organized special events such as the Big Sur International Marathon, Sea Otter Classic (bicycle races and outdoor sports festival/expo), or race events at Laguna Seca (Monterey County 1983, Monterey County Convention and Visitors Bureau 2012). Peak visitation to the region occurs between June and September. The Big Sur area to the south is a popular destination for visitors. Activities in this area include camping, tours, whale watching, hiking, and SCUBA diving (Caltrans 2004). The Big Sur area attracts visitors from around the world. It offers spectacular views of California's rugged coast and is recognized as one of the most scenic coastlines in the world.

## **2.2 LAND USE AND ZONING**

Hatton Canyon is currently an unclassified and unnamed park unit that does not have an existing general plan. The property was purchased to preserve wildlife habitat and provide recreational opportunities. Monterey pine forest, wetlands, and riparian forest occur within the park unit. Recreational use in the northern portion of Hatton Canyon is informal, primarily walking and jogging. There is an existing paved multiple-use trail within the

southern portion of Hatton Canyon. The southern portion of the property is also used for special events such as seasonal uses, community garden events, and as the end point for the annual Big Sur International Marathon. Community garden events include native plants sales by local nurseries. The nurseries also provide gardening and composting tips and may offer demonstrations.

The *Greater Monterey Peninsula Area Plan* designated Hatton Canyon as Public/Quasi-Public highway (Monterey County 1997). Land uses adjacent to the property include residential, commercial, visitor-serving facilities (such as Carmel Rancho Shopping Center, Carmel Mission Inn, and the Crossroads Shopping Center), and Carmel High School. Existing land use in the vicinity is designated as medium-density residential north of Carmel Valley Road and east of the Highway 1. According to the *Carmel Area Land Use Plan*, the area northwest and southwest of the southern portion of Hatton Canyon is medium-density residential. Commercial, planned commercial, and visitor accommodations/professional offices are located to the east and southeast.

Hatton Canyon is also zoned as Public/Quasi-Public by Monterey County. The purpose of the Public/Quasi-Public designation is to allow in designated areas public/quasi-public uses such as schools, parks, regional parks, recreation areas, and uses which serve the public at large.

The Hatton Canyon property is outside of the Carmel-by-the-Sea city limits, but is within the City's sphere of influence, and is described as a right-of-way within the City's 2003 General Plan (City of Carmel-by-the-Sea 2003). Some encroachment from surrounding land uses/residences on the California State Parks owned property is currently occurring.





Exhibit 2-1

Designated Open Space Areas



## **2.3 RELEVANT PLANNING POLICIES**

### **2.1.1 GREATER MONTEREY PENINSULA AREA PLAN**

Several policies within the *Greater Monterey Peninsula Area Plan* (Monterey County 1997) are relevant to Hatton Canyon. These policies are listed below:

- ▶ A setback of 100 feet from all wetlands shall be provided and maintained in open space use.
- ▶ Open space areas should include a diversity of habitats with special protection given to ecologically important zones such as areas where one habitat grades into another and areas used by wildlife for access routes to water or feeding grounds.
- ▶ Open space, low intensity educational and recreational uses should be considered to be appropriate and compatible land uses in environmentally sensitive areas and areas of high visual sensitivity.
- ▶ Development on canyon edges and hilltops shall be designed to minimize the visual impact of the development.
- ▶ Riding and hiking trails should be acquired and developed with the intent of creating a coordinated, areawide trails system.

## **2.4 EASEMENTS**

A 2002 deed to Caltrans included a highway easement that states that if the property is not included within the California State Parks system within one year or the property ceases to be used for California State Park purposes, the property may be transferred back to Caltrans. This deed also indicates that the property may not be used for mitigation (DPR 2012a). Caltrans retains right-of-way over all of California State Parks' right-of-way south of Carmel Valley Road for purposes of constructing the State Route 1/Rio Road to Carmel Valley Road Operational Improvement Project (Caltrans 2011).

## **2.5 EXISTING FACILITIES**

Existing facilities within Hatton Canyon are listed below. Additional detail and a map of the recreational facilities are provided in Section 4.2, Recreation Facilities and Trails. Additional detail of operations and maintenance facilities are provided in Section 7.1, Existing Facilities.

- ▶ Paved multiple-use trail
- ▶ Unpaved service road/unofficial trail
- ▶ Developed picnic area/picnic tables
- ▶ Benches
- ▶ Bicycle rack



## **3 SIGNIFICANT RESOURCE VALUES**

### **3.1 PHYSICAL RESOURCES**

#### **3.1.1 CLIMATE**

The climate in the Carmel area is a maritime Mediterranean climate characterized by warm, rainy winters and cool, foggy summers (Thomson 1997). The year-round climate is mild and not subject to severe seasonal change, primarily because of the immediate influence of the Pacific Ocean. A semi-permanent Pacific high pressure system to the west or northwest of the Monterey area creates northwesterly winds over the ocean. The Pacific high pressure system intensifies during the summer months, keeping storms to the north. On average, fog occurs 135 days per year, primarily during July, August, and September, although inland areas experience less fog than the coastal areas. Average annual temperatures in the area generally range from 49°F to 63°F, with summer maximum temperatures around 68°F and winter maximum temperatures in the low 60s. Daily temperature fluctuations are typically small. Rainfall averages 19 inches per year and falls primarily between October and May (CeNCOOS 2012, Caltrans 2004). According to the National Oceanic and Atmospheric Administration's Weather Service website, the nearest weather station to Hatton Canyon is the Monterey Peninsula Station.

#### **3.1.1 TOPOGRAPHY**

The northern portion of the property encompasses a narrow canyon that is located at a lower elevation than the surrounding neighborhoods. The topography within the property is highly variable, ranging from the flat bottomlands near the mouth of the Carmel River in the southern portion to the steep hillsides of the Carmel Hills in the northern portion. The Carmel Hills are part of the Peninsula Ridgeline separating Carmel and Monterey (TAMC 2009). Elevations within the property range from approximately 610 feet, at the northeastern edge to approximately 20 feet at the southern end of the property near the Carmel River.

#### **3.1.2 GEOLOGY AND SEISMICITY**

The seasonal drainage within Hatton Canyon eroded down through the Pleistocene marine terraces that lie along the coast of the Pacific Ocean into the underlying Monterey formation. The Carmel Hills are part of the Peninsula Ridgeline separating Carmel and Monterey. Portions of the canyon are in areas designated as having a high susceptibility to landslide and erosion. These areas are primarily in the southern portion of the canyon (TAMC 2009).

Faults in the Monterey area occur primarily in two northwest-trending zones, the Palo Colorado-San Gregorio fault zone and the Monterey Bay fault zone. There are several active or potentially active faults within these zones including: San Andreas, San Gregorio-Palo Colorado, Chupines, Navy, and Cypress Point, with the San Andreas and San Gregorio being the most dominant faults that are considered active and have evidence of historic or recent movement. The San Andreas Fault runs through much of California and the southeast portion of Monterey County (Monterey County 2010). In addition, the Hatton Canyon Fault, which is potentially active, is within the general area. Potentially active faults are generally those that have evidence of displacement older than 11,000 years and younger than 1.7 million years. The Hatton Canyon Fault consists of a group of northwest-striking faults and extends from Carmel Valley Road northwest for approximately 7 miles (TAMC 2009). Small to

moderate earthquakes (i.e., magnitude 5.0 and below) are common in Monterey County. Although there are a number of faults zones in this area, none of them are officially designated as an Alquist-Priolo Earthquake Fault Zone (DPR 1979, 1988; TAMC 2009) (Exhibit 3-1).

The *Carmel Hill and River Class 1 Bicycle Trail EIR* (TAMC 2009) indicated that geologic hazards within Hatton Canyon include areas of high susceptibility to landslides and erosion. The geotechnical support included in the EIR stated that the portion of the property near the Carmel River floodplain has a high potential for liquefaction and lateral spreading (TAMC 2009); however no map of the specific areas was included.

### **3.1.3 PALEONTOLOGY**

No paleontological resources are known to occur within the Hatton Canyon (TAMC 2009).

### **3.1.4 SOILS**

According to the 2009 Natural Resources Conservation Service (NRCS) Soil Survey and GIS data layers, there are nine soil types within Hatton Canyon (Exhibit 3-2). The soils are dominated by Elder very fine sandy loam, Santa Lucia shaly clay loam, Santa Lucia – Reliz Association, and Santa Ynez fine sandy loam.

The Elder very fine sandy loam is a well-drained soil type with negligible to low runoff. These soils are typically formed from moderately coarse textured alluvium derived from sedimentary, granitic, and basic igneous rock sources. Santa Lucia soil types are primarily associated with uplands. This type of soils consists of moderately deep, well drained soils that formed in material weathered from white shale containing some ash, and some siliceous and diatomaceous material. With moderate permeability, Santa Lucia soils may vary from very low to high runoff characteristics. Santa Ynez soil types are deep, moderately well drained soils that are found on terraces that have slopes of 0 to 50%.

Other soil types within Hatton Canyon include Chamise shaly loam, Haire loam, Narlon loamy fine sand, and Tujunga fine sand.

Some Hatton Canyon soils have high erosion potential, particularly the banks and terrace deposits adjacent to Carmel River.

### **3.1.5 HYDROLOGY, WATER QUALITY, AND FLOODPLAINS**

According to the NRCS watershed database, watersheds in the region include the Canyon Del Rey-Frontal Monterey Bay, Carmel River, and Big Sur River-Frontal Pacific Ocean watersheds (Exhibit 3-3). Watershed data in support of California State Parks general plans is typically obtained from the Calwater 2.2 database; however, in the case of this planning effort, the NRCS dataset appears to contain more detailed and accurate information for this particular region. The property is almost completely within the Carmel River Watershed, with only a very small portion (i.e., less than 0.5 acre) within the Canyon Del Rey-Frontal Monterey Bay Watershed. The entire Carmel River Watershed is almost 20,000 acres, and the property comprises approximately 0.6% of that area. The headwaters of the Carmel River Watershed are located within the northern portion of the Ventana Wilderness of Los Padres National Forest. The Carmel River is the primary hydrologic feature within this watershed.

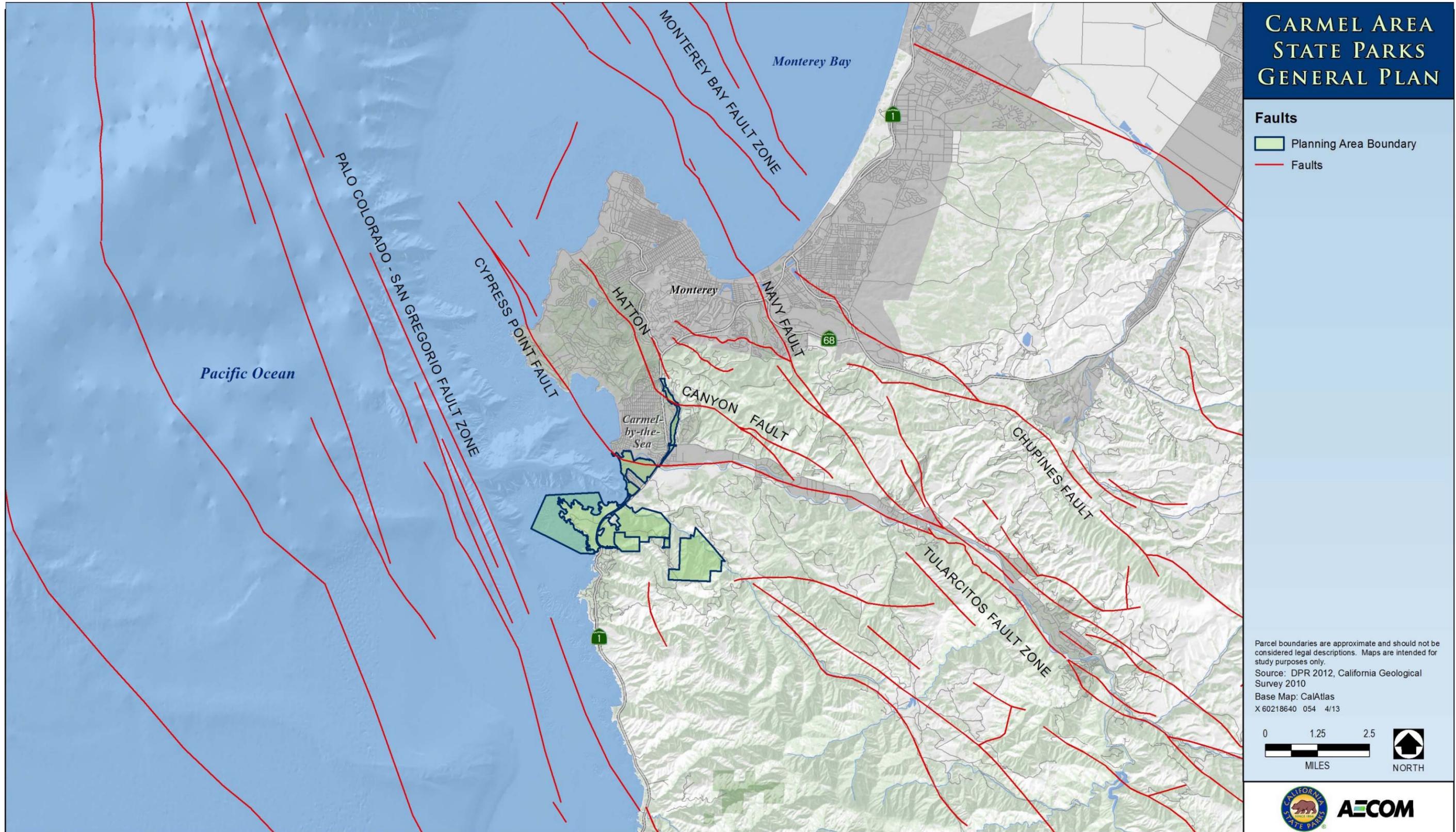


Exhibit 3-1

Faults in the Vicinity of Hatton Canyon



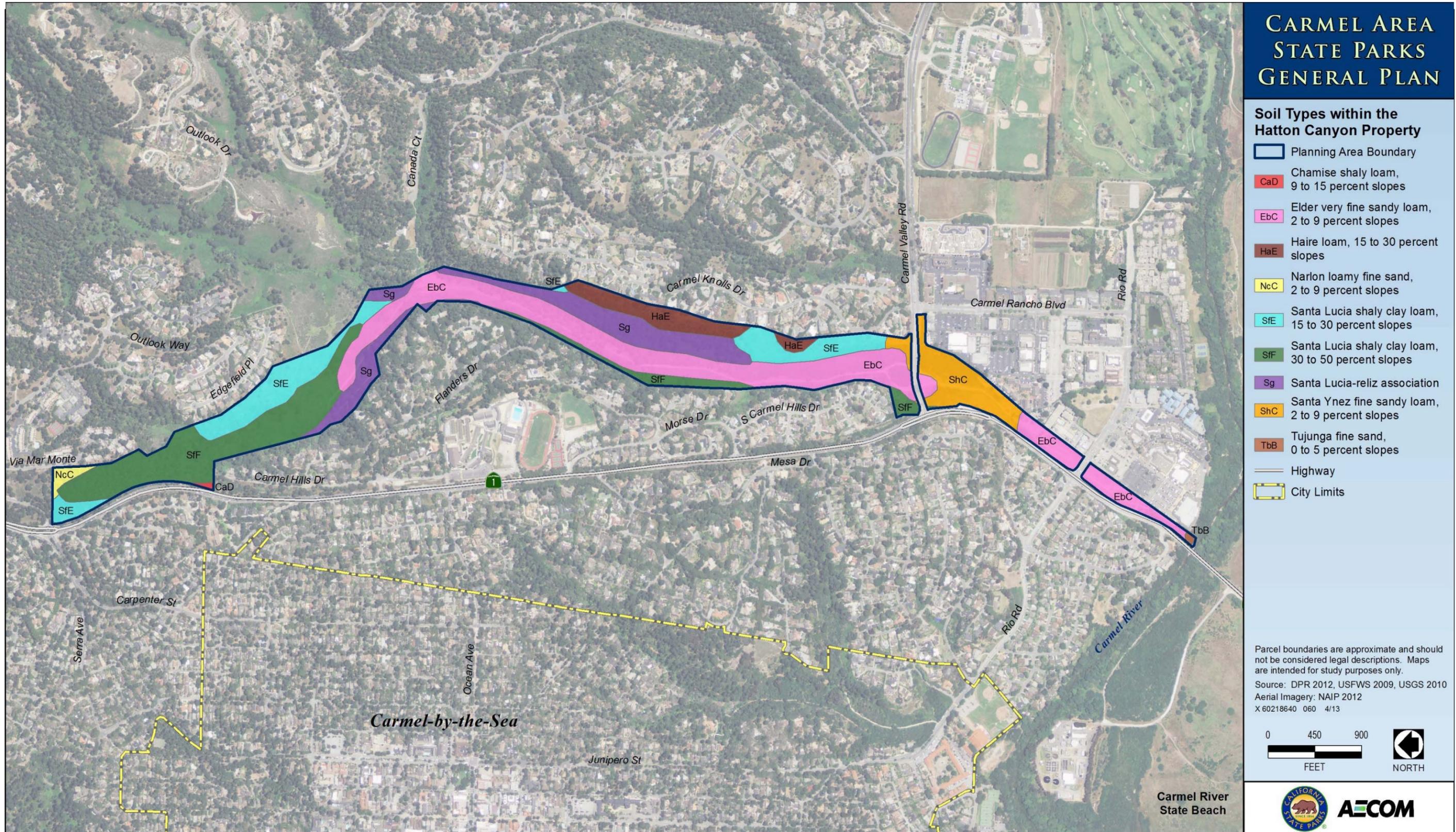
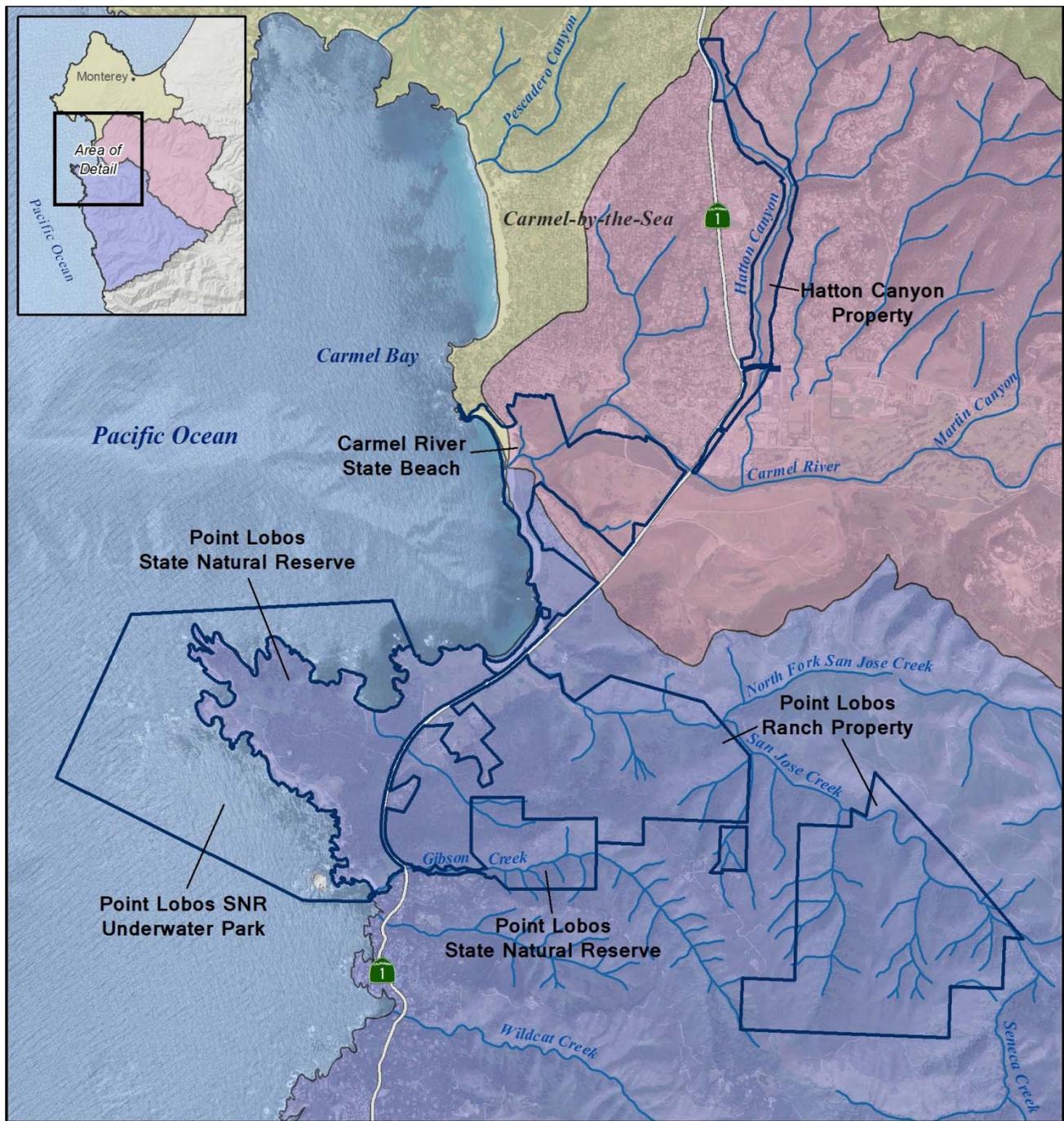


Exhibit 3-2

Soil Types within Hatton Canyon





## CARMEL AREA STATE PARKS GENERAL PLAN

### Watersheds

- |                        |                                     |
|------------------------|-------------------------------------|
| Planning Area Boundary | Canyon Del Rey-Frontal Monterey Bay |
| Highway                | Carmel River                        |
| Rivers and Streams     | Big Sur River-Frontal Pacific Ocean |

Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.  
 Source: DPR 2012, USGS 2011, NRCS 2008  
 Aerial Imagery: NAIP 2012 X 60218640 061 4/13



**AECOM**

**Exhibit 3-3**

**Watersheds**

The primary hydrologic feature within Hatton Canyon is a seasonal drainage that conveys water from upland runoff and sheetflow through a combination of confined channels, shallow wetlands, and culverts and empties directly into the Carmel River. Another small drainage joins the main seasonal drainage in the northern portion of Hatton Canyon from the north.

The southern portion of Hatton Canyon from just north of Rio Road to the Carmel River is designated as 100-year floodplain, and is subject to flooding during storms (Exhibit 3-4). Runoff from Highway 1 flows east in the form of sheet flow to the undeveloped southern portion of the property where it infiltrates. A storm drain system along Rio Road conveys the runoff from that roadway to the Carmel River.

Sedimentation is the primary water quality issue within the property and is attributed to high erosion soils in Hatton Canyon and to the existing service road in the northern portion of the property. At a larger scale, groundwater quality in the Carmel Valley Aquifer has historically been degraded and has experienced an increase in dissolved solids, chlorides, and nitrates from sources like agriculture, urban runoff, and pesticide use in developed areas.

### **3.1.6 CLIMATE CHANGE AND SEA LEVEL RISE**

#### **CLIMATE CHANGE**

Climate change refers to change in the Earth's weather patterns including the rise in the Earth's temperature due to an increase in heat-trapping or greenhouse gases in the atmosphere. Greenhouse gases (GHGs) include carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride among others. Human activities are adding large amounts of GHGs to the atmosphere. Combustion of fossil fuels for heat, electricity, and transportation is the main source of these gases.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing adaptation and mitigation strategies to reduce the negative impacts of impending climate change.

It is anticipated that coastal areas in California will experience several negative affects related to climate change, which will compel the population in these areas to make difficult choices regarding critical assets that need to be protected, relocated, or removed because of economic feasibility. Some of the anticipated extreme events and climate impacts associated with oceans and coastal resources are increased temperature, precipitation changes, sea-level rise, reduced agricultural activity, biodiversity threats, public health threats, and increased wildfire risks.

Projected effects of climate change on the central California Coastal Region, including Hatton Canyon, as described in the *Draft California Climate Change Adaptation Policy Guide* are summarized in Table 3-1.

#### **SEA-LEVEL RISE**

Sea-level rise is considered to be one of the primary effects of climate change that is already affecting California. It is anticipated that sea-level rise along the California coast will increase coastal flooding and permanent inundation, deteriorate coastal wetland habitat, increase coastal erosion, cause saltwater intrusion within inland freshwater systems, and change acidity levels of the oceans. Sea-level rise will also have economic impacts,

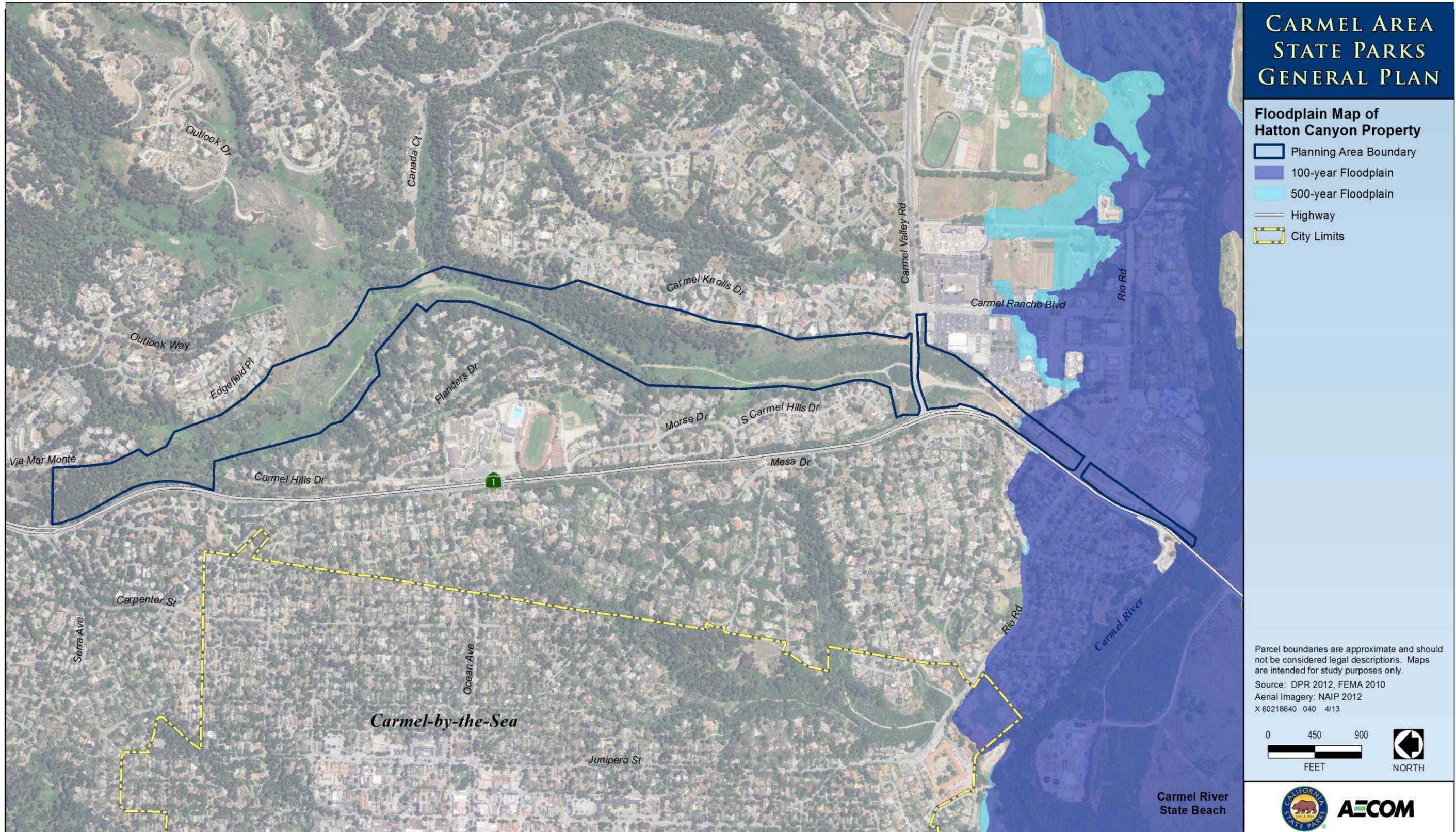


Exhibit 3-4

Floodplain Map of Hatton Canyon



<b>Table 3-1 Projected Effects of Climate Change on the Central California Coastal Region</b>	
<b>Effect</b>	<b>Ranges</b>
Temperature Change (1990-2100)	January: 4.1°F to 5.2°F increase in average temperatures. July: 5.1°F to 6°F increase in average temperatures. (Modeled high temperatures – average of all models; high carbon emissions scenario)
Precipitation	Precipitation varies by location with a general decrease throughout the century. Big Sur’s rainfall is projected to decrease by nearly 8 inches in the same timeframe, with 5 to 7 inch decreases in cities like Santa Cruz, San Luis Obispo, and Santa Barbara. Projected decreases in areas of the region that are farther inland are about 4 to 5 inches. (CCSM3 climate model; high carbon emissions scenario)
Sea Level Rise	By 2100, sea levels may rise up to 55 inches, posing threats to many areas in the region, particularly the Monterey Bay Area, Morro Bay, Avila Beach, and Santa Barbara. Overall, the estimated increased acreage in each county vulnerable to flooding will be 36% in Santa Barbara County, 15% in San Luis Obispo County, 12% in Santa Cruz County, and 11% in Monterey County.
Wildfire Risk	There is low to moderate change in projected fire risk in this region except for southwestern Monterey County, near the Big Sur, Carmel Valley, and Greenfield areas, where rates are expected to increase by 70% to 100% by 2085 (GFDL climate model; high carbon emissions scenario)
Source: Cal EMA and CNRA 2012	

threatening private and public properties and reducing tourism potential of California State Parks and other agencies that provide coastal amenities to the public through reduction in or damages to beaches, access ways, parks, scenic vistas, and trails.

In 2006, a historic sea-level rise of 7 inches was reported by the Climate Change Center. The *Draft California Climate Change Adaptation Policy Guide* estimates that the entire coastal zone of California is susceptible to the effects of sea-level rise including bays and estuaries. The *California Ocean Protection Council* and *Pacific Institute* estimate that even in a medium climate change scenario the sea level along the California coast will rise by 37 to 60 inches by 2100 (Table 3-2).

While future sea-level rise estimates vary based on future GHG emissions scenarios, the *2009 California Climate Change Adaptation Strategy* has adopted six adaptation strategies for ocean and coastal resources that are important to keep in mind while understanding the existing conditions of the Carmel Area State Parks and proposing a plan for the future. The six adaptation strategies laid out by the Coastal Adaptation Working Group, including California State Parks, are:

- ▶ Strategy 1: Establish State Policy to Avoid Future Hazards and Protect Critical Habitat;
- ▶ Strategy 2: Provide Statewide Guidance for Protecting Existing Critical Ecosystems, Existing Coastal Development, and Future Investments;
- ▶ Strategy 3: State Agencies Should Prepare Sea-Level Rise and Climate Adaptation Plans;
- ▶ Strategy 4: Support Regional and Local Planning for Addressing Sea-Level Rise Impacts;
- ▶ Strategy 5: Complete a Statewide Sea-Level Rise Vulnerability Assessment Every Five Years; and
- ▶ Strategy 6: Support Essential Data Collection and Information Sharing.

**Table 3-2  
Sea-Level Rise Projections using 2000 Sea Levels as a Baseline<sup>1</sup>**

Year	IPCC Emission Scenario	Average of Models	Range of Models
2030		7 in (18 cm)	5-8 in (13-21 cm)
2050		14 in (36 cm)	10-17 in (26-43 cm)
2070	Low	23 in (59 cm)	17-27 in (43-70 cm)
	Medium	24 in (62 cm)	18-29 in (46-74 cm)
	High	27 in (69 cm)	20-32 in (51-81 cm)
2100	Low	40 in (101 cm)	31-50 in (78-128 cm)
	Medium	47 in (121 cm)	37-60 in (95-152 cm)
	High	55 in (140 cm)	43-69 in (110-176 cm)

Notes:

<sup>1</sup> Background regarding these sea level rise projections can be found in the *Resolution of the California Ocean Protection Council on Sea-Level Rise* (OPC 2011).

Source: Cal EMA and CNRA 2012

In addition, in 2011 California State Parks developed the *Sea Level Rise and Extreme Event Guidance* document that includes recommendations for addressing sea level rise at California state parks along California’s coast (DPR 2011). This document anticipates effects to coastal park units resulting from the following:

- ▶ Potential loss of cultural and natural resources;
- ▶ Damage to park facilities and infrastructure (owned by State Parks and others);
- ▶ Decreased public access;
- ▶ Altered recreational opportunities;
- ▶ Change to revenue generation.

To help park planners and managers address these potential effects, the guidance document recommends a 5 step approach to managing risk in coastal park units:

1. Define Scope
2. Assess Vulnerability
3. Determine Risk
4. Manage Risk
5. Formulate Recommendation

Specific considerations include mapping of potential flooding areas, identifying opportunities and constraints, siting of new structures outside of potential flooding areas, and developing shoreline protection goals and guidelines.

Hatton Canyon is not anticipated to be affected as much as nearby coastal and low-lying properties by future sea-level rise because of its inland location and largely higher elevation. However, according to the Pacific Institute’s *Impacts of Sea Level Rise on the California Coast* map, the portion of the property south of Rio Road near the

Carmel River is presently at a high risk of inundation both from 100-year coastal storm event and estimated 1.4-meter sea level rise in future (Exhibit 3-5). This area accounts for about 1/3 of the southern portion of Hatton Canyon, or approximately 7 to 8 acres.

## 3.2 NATURAL RESOURCES

The Monterey Peninsula supports several different climatic, topographic, and soil conditions, resulting in a wide variety of habitats. This diversity of habitats supports many native plant and wildlife species. As an example, 146 plant species reach their most southern distributional limits and 156 plant species reach their most northern distributional limits in Monterey County, and at least 34 plant species are found only in Monterey County (City of Carmel-by-the-Sea 2003).

### 3.2.1 PLANTS

The Monterey Peninsula supports a variety of unique and important vegetation communities and landscapes, including several types of forest, coastal prairie, coastal scrub, wetlands, streams and associated riparian corridors, beaches, and rocky shoreline. Distinctive forest types characteristic of this region include Monterey pine, Monterey cypress, Gowen cypress, and the pygmy pine and pygmy cypress forests. The Monterey pine forest is found naturally in only five locations in the world, and the “core” population exists on the Monterey Peninsula (TMPFW 2011). Two stands each of Monterey cypress and Gowen cypress forests occur naturally on the Monterey Peninsula (TMPFW 2011, Barbour 2007, USFWS 2004).

Wetlands and streams provide habitat for many sensitive species. Riparian woodlands are among the most biologically rich habitats in North America (CSU Pomona 2005), providing shade and structure along streams and important habitat for resident and migratory birds, mammals, reptiles, and amphibians (RHJV 2004). In California, less than 15% of these diverse woodlands remain (RHJV 2004).

## VEGETATION COMMUNITIES AND OTHER LANDSCAPES

Vegetation communities within Hatton Canyon include Monterey pine forest, coastal scrub, riparian forest, grasslands, and wetlands. Other landscapes represented within the unit include ruderal and developed areas. The location and extent of these communities and landscapes is shown in Exhibit 3-6. Vegetation mapping is based primarily on California State Parks vegetation management areas mapping (California State Parks 2009a; updated 2013), rather than more detailed vegetation community mapping protocols. For general planning purposes, this level of mapping was determined to be sufficient. However, additional resource mapping is recommended.

Vegetation community descriptions provided below are primarily based on the *Carmel Hill & River Bicycle Trail EIR* (TAMC 2009), unless otherwise noted.

### Monterey Pine Forest

Monterey pine forest occupies the slopes above the canyon bottom. It is dominated by Monterey pine (*Pinus radiata*) and coast live oak (*Quercus agrifolia*). The understory is dominated by Carmel ceanothus (*Ceanothus thyrsiflorus* var. *griseus*), California coffee berry (*Frangula californica*), oso berry (*Oemleria cerasiformis*), hairy honeysuckle (*Lonicera hispidula*), poison oak (*Toxicodendron diversilobum*), and spreading snowberry (*Symphoricarpos mollis*). Common herbs include hedge-nettle (*Stachys bullata*), Pacific pea (*Lathyrus vestitus*

ssp. *vestitus*), California brome (*Bromus carinatus*), gamble weed (*Sanicula crassicaulis*), milk maid (*Cardamine californica*), bracken fern (*Pteridium aquilinum* var. *pubescens*), and California wood fern (*Dryopteris arguta*). Coast buckwheat (*Eriogonum latifolium*) and seacliff buckwheat (*E. parvifolium*) can also be found in the understory of the Monterey pine forest along the east wall of the property; these may serve as host plants for the federally endangered Smith's blue butterfly (USDOT, FHWA, and Caltrans 1973).

## Coastal Scrub

Coastal scrub occurs on the slopes above the canyon bottom. This plant community is typically dense and plants reach 1 to 3 meters in height (Barry et al. 1977). Coastal scrub at Hatton Canyon is dominated by coyote brush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), and California coffee berry. Other shrubs found in the coastal scrub include spiny redberry (*Rhamnus crocea*), Carmel ceanothus, fuchsia-flowered gooseberry (*Ribes speciosum*), bush monkeyflower (*Mimulus aurantiacus*), toyon (*Heteromeles arbutifolia*), ocean spray (*Holodiscus discolor*), hairy honeysuckle, deerweed (*Lotus scoparius*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Herbs include coast morning glory (*Calystegia macrostegia* var. *cyclostegia*), Indian paintbrush (*Castilleja affinis*), coast goosefoot (*Chenopodium californicum*), California wood fern, climbing bedstraw (*Galium porrigens*), California everlasting (*Pseudognaphalium californicum*), cow parsnip (*Heracleum maximum*), Pacific pea, giant rye (*Elymus condensatus*), round-leaved Heermann's lotus (*Acmispon heermannii* var. *orbicularis*), wild cucumber (*Marah fabacea*), California melic (*Melica californica*), gold-back fern (*Pentagramma triangularis* ssp. *triangularis*), stinging phacelia (*Phacelia malvifolia*), yerba buena (*Satureja douglasii*), and California bee plant (*Scrophularia californica*).

## Riparian Forest

Riparian vegetation is associated with the drainage that flows through the canyon. The riparian forest is dominated by arroyo willow (*Salix lasiolepis*), black cottonwood (*Populus trichocarpa*), and western dogwood (*Cornus sericea* ssp. *occidentalis*). Other common shrubs include California blackberry (*Rubus ursinus*), box elder (*Acer negundo*), poison oak, straggly gooseberry (*Ribes divaricatum* var. *pubiflorum*), and pink-flowering currant (*R. sanguineum* var. *glutinosum*). Herbs found in the riparian forest include mugwort (*Artemisia douglasiana*), Santa Barbara sedge (*Carex barbarae*), tall cyperus (*Cyperus eragrostis*), San Francisco willow-herb (*Epilobium ciliatum* ssp. *watsonii*), hoary nettle (*Urtica dioica* ssp. *holosericea*), poison hemlock (*Conium maculatum*), velvet grass (*Holcus lanatus*), common plantain (*Plantago major*), beard grass (*Polypogon interruptus*), rabbit's-foot grass (*P. monspeliensis*), and willow dock (*Rumex salicifolius*).

Riparian corridors are considered environmentally sensitive habitats in the *Carmel Area Land Use Plan* (Monterey County 1983). The riparian vegetation in Hatton Canyon is likely considered a freshwater forested/shrub wetland (USDOT, FHWA, and Caltrans 1973) (Exhibit 3-6).

## Wetlands

Portions of the drainage that flows through the bottom of Hatton Canyon are considered either a riverine, freshwater emergent, and freshwater forested/shrub wetland (USFWS 2012a), depending on the vegetation present (Exhibit 3-7). The riverine portions flow through areas dominated by riparian forest, which is described above. The freshwater emergent wetland portions are dominated by tall cyperus, giant horsetail, toad rush (*Juncus*

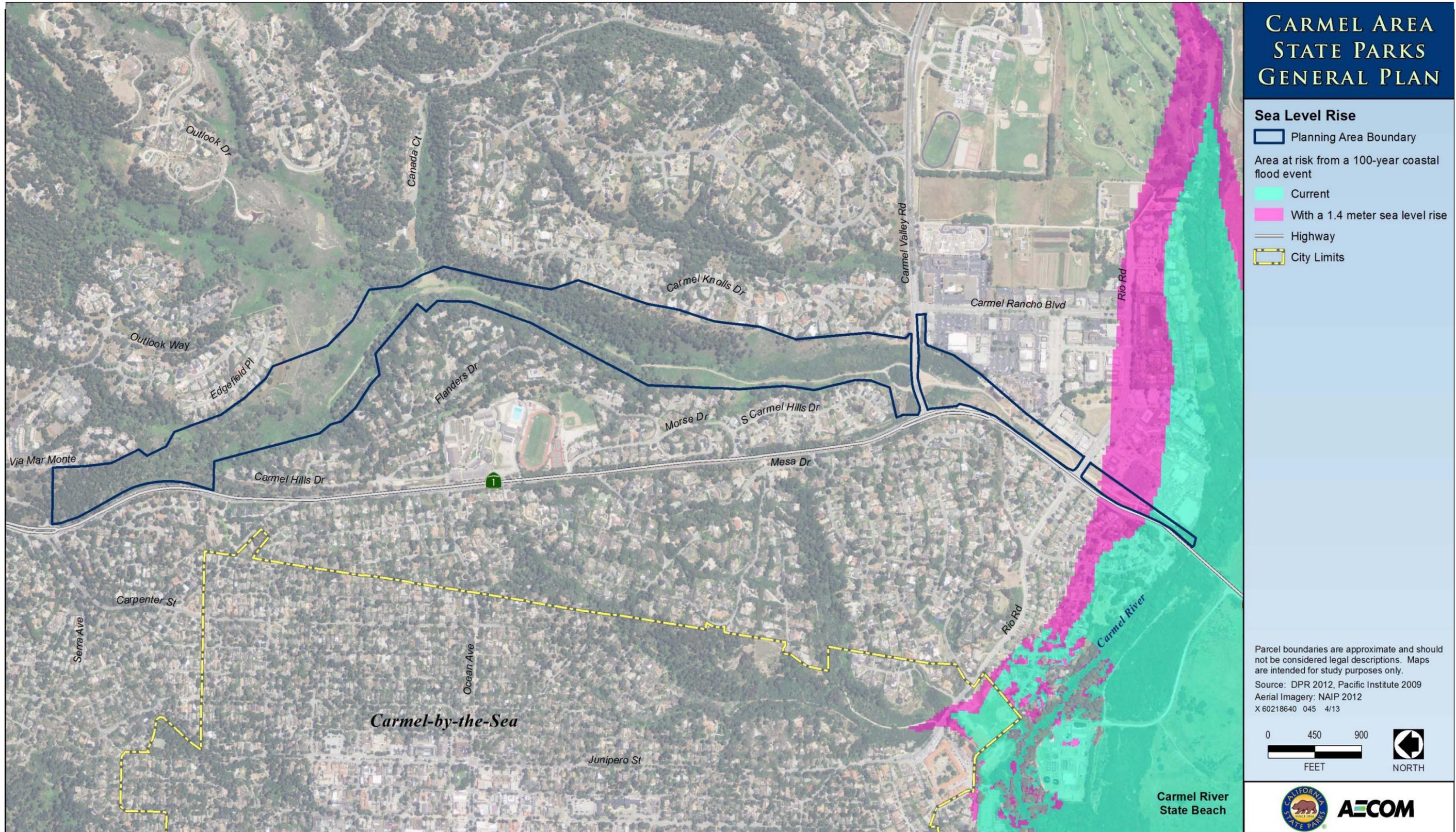


Exhibit 3-5

Projected Effects of Sea Level Rise at Hatton Canyon



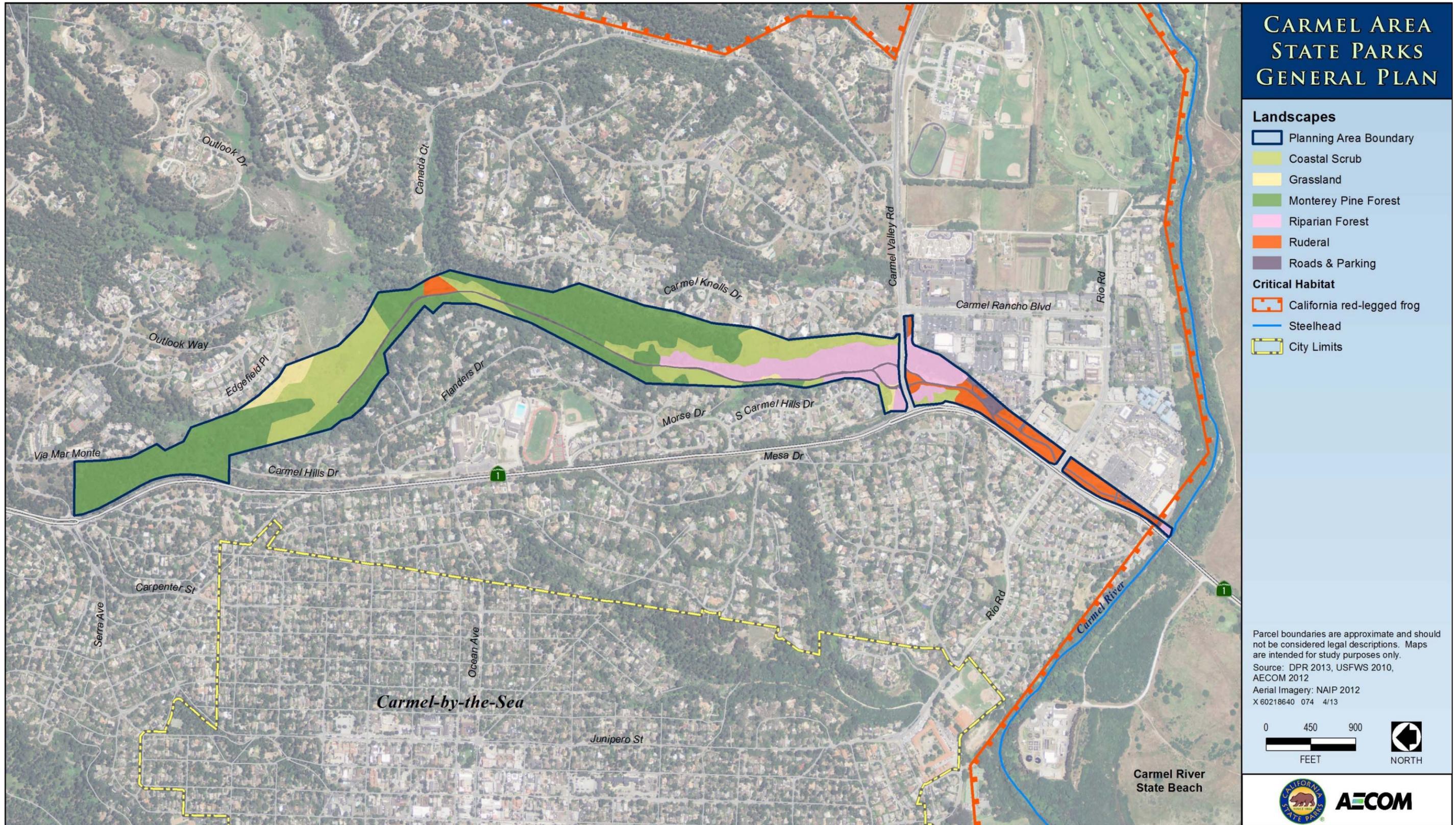
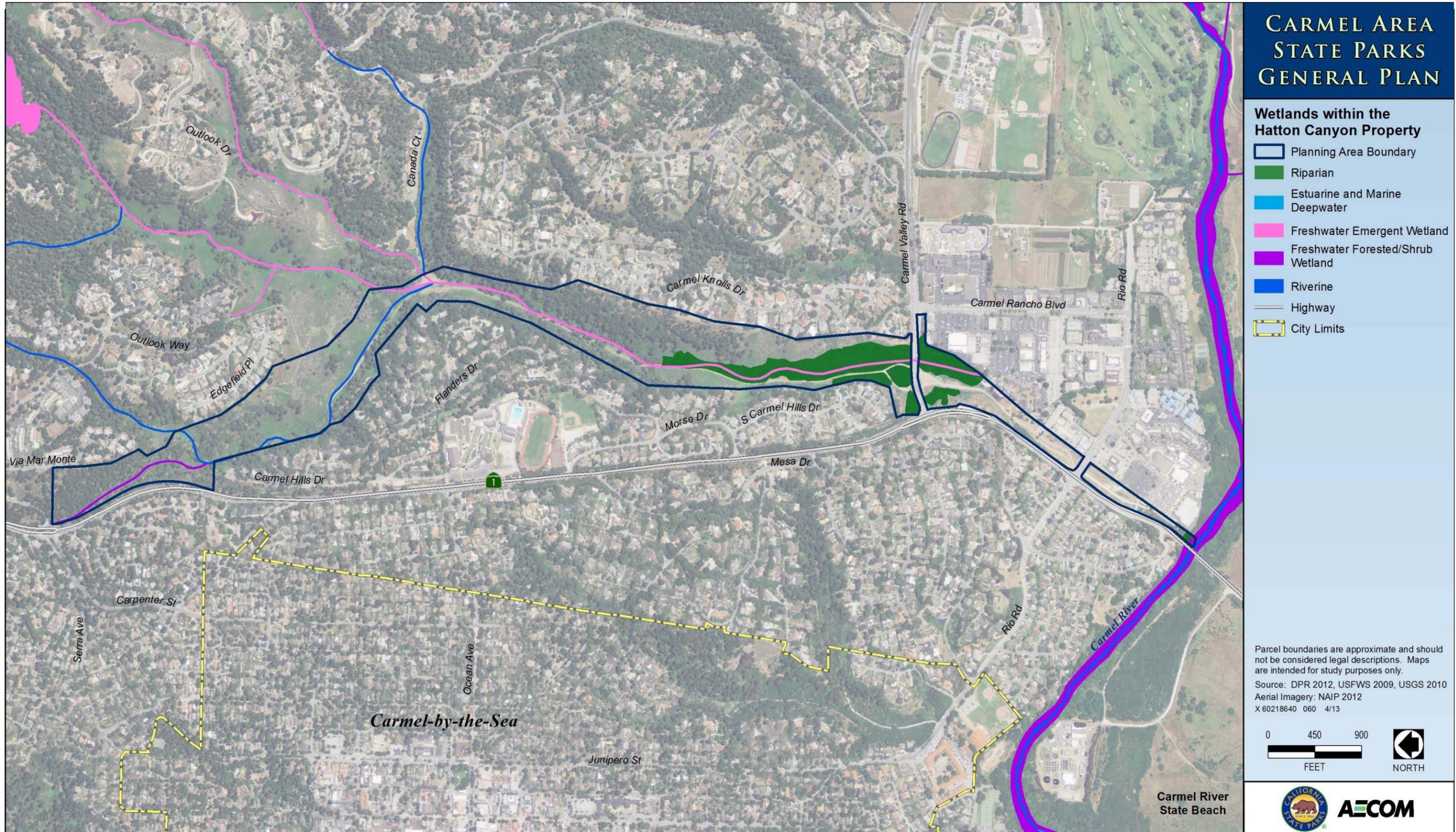


Exhibit 3-6

Vegetation Communities and Other Landscapes at Hatton Canyon



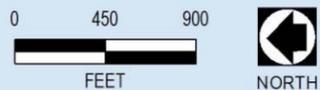


# CARMEL AREA STATE PARKS GENERAL PLAN

## Wetlands within the Hatton Canyon Property

- Planning Area Boundary
- Riparian
- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Riverine
- Highway
- City Limits

Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.  
 Source: DPR 2012, USFWS 2009, USGS 2010  
 Aerial Imagery: NAIP 2012  
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Carmel River State Beach

Exhibit 3-7

Wetlands within Hatton Canyon



*bufonius* var. *bufonius*), common rush (*J. effusus*), spreading rush (*J. patens*), Mexican rush (*J. mexicanus*), grass poly (*Lythrum hyssopifolia*), watercress (*Nasturtium officinale*), and panicked bulrush (*Scirpus microcarpus*). The freshwater forested/shrub wetland flows through Monterey pine forest, described above.

## Grasslands

Information about the grassland community in Hatton Canyon is partially based on a California Natural Diversity Database (CNDDDB) record for Hickman's onion (CNDDDB occ. no. 13). The grassland is described as remnant coastal prairie with significant influence from the surrounding urban areas. Native species found in the grassland include California oat grass (*Danthonia californica*), purple needle grass (*Stipa pulchra*), Western blue-eyed grass (*Sisyrinchium bellum*), checkerbloom (*Sidalcea malviflora*), gamble weed, fescue (*Festuca* sp.), and marsh microseris (*Microseris paludosa*) (USDOT, FHWA, and Caltrans 1973).

## Ruderal

Ruderal areas include a former staging area for local roadway improvement and expansion projects, and other maintained areas throughout the property. These areas are dominated by weedy, non-native plants such as French broom (*Genista monspessulana*), poison hemlock, long-beaked filaree (*Erodium botrys*), English plantain (*Plantago lanceolata*), and summer mustard (*Hirschfeldia incana*). Non-native annual grasses such as wild oats (*Avena* spp.) and bromes (*Bromus* spp.) are also present. Dune buckwheat (*Eriogonum parvifolium*) is also present within this habitat type on the south embankment of Carmel Valley Road and may provide habitat for the federally endangered Smith's blue butterfly.

## Developed

Developed areas within the property include paved and unpaved roads, the paved multiple-use trail, the developed picnic area, and areas dominated by ornamental plantings.

## SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those that are of special concern to California Department of Fish and Wildlife (CDFW) or that are afforded specific consideration through the California Environmental Quality Act (CEQA), Section 1602 of the California Fish and Game Code, the Porter-Cologne Act, or Section 404 of the Clean Water Act (CWA). The *Carmel Hill & River Bicycle Trail EIR* (TAMC 2009), CNDDDB (2012) and California State Parks staff (Palkovic, pers. comm., 2012) are the primary sources of information on the location and extent of sensitive natural communities within Hatton Canyon. Sensitive communities present include Monterey pine forest, riparian forests, and wetlands. There is a CNDDDB record for Monterey pine forest (CNDDDB occ. no. 4) that includes the northern portion Hatton Canyon (Exhibit 3-8).

## WETLANDS

Existing information on wetlands within the property is included in the *Carmel Hill & River Bicycle Trail EIR* (TAMC 2009), *SR 1/Rio Road Improvement IS/MND* (TAMC 2008), *Route 1 in Monterey County from 0.1 mile South of the Carmel River to 0.1 mile South of the Route 1/68 Interchange (Route 1 EIR)* (USDOT, FHWA, Caltrans 1973), and the National Wetlands Inventory (USFWS 2012a). Wetland habitat includes the seasonal drainages that flow through the bottom of the canyon, and riverine, freshwater emergent, and freshwater

forested/shrub wetlands (USFWS 2012a). Riverine portions have a well-defined channel that conveys water, freshwater emergent wetland portions are in areas where the channel broadens and holds standing water or saturated soil, and freshwater forested/shrub wetlands are found at the top of the canyon. See Vegetation Communities, above, for descriptions of these wetlands. The riparian forest associated with the drainage is likely considered a freshwater forested/shrub wetland (USDOT, FHWA, Caltrans 1973). Exhibit 3-7 shows the location and extent of these wetlands.

## **SPECIAL-STATUS PLANT SPECIES**

The diverse geologic history and climatic conditions of the Monterey area have created a mosaic of isolated and specialized environments, which support many endemic plants (CNPS 2012). In Hatton Canyon, the varied landscapes are known to or could potentially support several special-status plant species. For the purposes of this document, special-status plants include the following:

- ▶ Species listed under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA) as rare, threatened, or endangered;
- ▶ Species considered as candidates and proposed for state or federal listing as threatened or endangered; and
- ▶ Plants ranked by CDFW to be rare, threatened, or endangered in California (these include species in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California).

The *Carmel Hill & River Bicycle Trail EIR* (TAMC 2009), *SR 1/Rio Road Improvement IS/MND* (TAMC 2008), and *Route 1 EIR* (USDOT, FHWA, Caltrans 1973) contain information on special-status plant species found in Hatton Canyon. State Parks staff have also observed several special-status plant species at Hatton Canyon (Palkovic, pers. comm., 2012). The CNDDDB (2012), CNPS Inventory of Rare Plants (CNPS 2012), and U.S. Fish and Wildlife Service Endangered Species list (USFWS 2012b) were searched for additional information about special-status species previously documented within Hatton Canyon (Exhibit 3-8) and the region. Regional occurrences of special-status species are shown in Appendix A. Monterey pine, Monterey cypress, marsh microseris, and Hickman's onion have been documented within Hatton Canyon. Several other species may have occurred in the canyon historically: Hooker's manzanita, sandmat manzanita, Santa Lucia bush mallow, Eastwood's goldenbush, Kellogg's horkelia, and Jolon clarkia. Table 3-3 contains detailed information on all special-status plants known from or with potential to occur on the property. Species that are known to occur within Hatton Canyon are shown in bold.

The four special-status plants present in Hatton Canyon have a California Rare Plant Rank of 1B, designated as rare, threatened, or endangered in California and elsewhere. Threats to special-status plants in Hatton Canyon include loss of habitat and competition from invasive plants; disturbance associated with surrounding residential neighborhoods, herbivory; and improper fire regime, especially for the Monterey pine and Monterey cypress. Monterey pine is also specifically threatened by disease (pine pitch canker) and genetic contamination.

No property-wide comprehensive survey for special-status plants has been conducted to date, and the current extent of the Hickman's onion and marsh microseris populations is not known. Detailed inventory and monitoring of special-status plants is recommended.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
<b>Hickman's onion</b> <i>Allium hickmanii</i>	-	1B.2	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland; 5 to 200 meters elevation; blooms March through May	<b>Known to occur</b> along the crest of the east wall of Hatton Canyon (Palkovic, pers. comm. 2012; CNDDDB occ. no. 13).
Little Sur manzanita <i>Arctostaphylos edmundsii</i>	-	1B.2	Coastal bluff scrub and chaparral, in sandy soils; 30 to 105 meters elevation; blooms November through April	Could occur in the coastal scrub.
Hooker's manzanita <i>A. hookeri</i> ssp. <i>hookeri</i>	-	1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub, in sandy soils; 85 to 536 meters; blooms January through June	Possibly occurred historically (CNDDDB occ. no. 2); could occur in the Monterey pine forest or coastal scrub.
Monterey manzanita <i>A. montereyensis</i>	-	1B.2	Maritime chaparral, cismontane woodland, and coastal scrub, in sandy soils; 30 to 730 meters elevation; blooms February through March	Could occur in live oak dominated portions of Monterey pine forest or coastal scrub.
Sandmat manzanita <i>A. pumila</i>	-	1B.2	Closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub, in sandy soils and openings; 3 to 205 meters elevation; blooms February through May	Possibly occurred historically (CNDDDB occ. no. 12); could occur in the Monterey pine forest or coastal scrub.
Marsh sandwort <i>Arenaria paludicola</i>	E	E, 1B.1	In sandy soils, in openings in freshwater and brackish marshes and swamps; 3 to 170 meters elevation; blooms May through August	Could occur in wetlands.
Ocean bluff milk-vetch <i>Astragalus nuttallii</i> var. <i>nuttallii</i>	-	4.2	Coastal bluff scrub and coastal dunes; 3 to 120 meters elevation; blooms January through November	Could occur in coastal scrub.
Coastal dunes milk-vetch <i>A. tener</i> var. <i>titi</i>	E	E, 1B.1	Coastal bluff scrub, coastal dunes, and mesic coastal prairie, in sandy soils, often in vernal mesic areas; 1 to 50 meters elevation; blooms March through May	Could occur in coastal scrub or mesic areas in grasslands.
Pink johnny-nip <i>Castilleja ambigua</i> ssp. <i>insalutata</i>	-	1B.1	Coastal prairie and coastal scrub; 0 to 100 meters elevation; blooms May through August	Could occur in the coastal scrub.
Monterey Indian paintbrush <i>Castilleja latifolia</i>	-	4.3	Closed-cone coniferous forest, openings in cismontane woodland, coastal dunes, and coastal scrub, in sandy soils; 0 to 185 meters elevation; blooms February to September	Could occur in the Monterey pine forest or coastal scrub.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
Monterey ceanothus <i>Ceanothus rigidus</i>	-	4.2	Closed-cone coniferous forest, chaparral, and coastal scrub, in sandy soils; 3 to 550 meters elevation; blooms February through April (sometimes June)	Could occur in Monterey pine forest or coastal scrub.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	-	1B.2	Alkaline soils in valley and foothill grassland; 0 to 230 meters elevation; blooms May through November	Could occur in grasslands.
Douglas' spineflower <i>Chorizanthe douglasii</i>	-	4.3	Chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest, in sandy or gravelly soils; 55 to 1,600 meters elevation; blooms April through July.	Could occur in Monterey pine forest or coastal scrub.
Monterey spineflower <i>C. pungens</i> var. <i>pungens</i>	T	1B.2	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland, in sandy soils; 3 to 450 meters elevation, blooms April through June	Could occur in live oak dominated portions of Monterey pine forest, coastal scrub, or grasslands.
Robust spineflower <i>C. robusta</i> var. <i>robusta</i>	E	1B.1	Maritime chaparral, openings in cismontane woodland, coastal dunes, and coastal scrub, in sandy or gravelly soils; 3 to 300 meters elevation; blooms April through June	Could occur in openings in live oak dominated portions of Monterey pine forest or coastal scrub.
Jolon clarkia <i>Clarkia jolonensis</i>	-	1B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland; 20 to 660 meters elevation; blooms April through June	Possibly occurred historically (CNDDDB 2012, occ. no. 15), could occur in live oak dominated portions of Monterey pine forest, coastal scrub, or riparian forest.
Lewis' clarkia <i>Clarkia lewisii</i>	-	4.3	Broadleaf upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub; 30 to 610 meters elevation; blooms May through June	Could occur in Monterey pine forest or coastal scrub.
San Francisco collinsia <i>Collinsia multicolor</i>	-	1B.2	Closed-cone coniferous forest and coastal scrub, sometimes in serpentine soils; 30 to 250 meters elevation; blooms March through May	Could occur in Monterey pine forest or coastal scrub.
Seaside bird's-beak <i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>	-	E, 1B.1	Closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub, in sandy soils, often in ruderal sites; 0 to 425 meters elevation; blooms May through October	Could occur in Monterey pine forest or coastal scrub.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
Branching beach aster <i>Corethrogyne leucophylla</i>	-	3.2	Closed-cone coniferous forest and coastal dunes; 3 to 60 meters elevation; blooms May through June	Could occur in Monterey pine forest.
Hospital Canyon larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	-	1B.2	Chaparral, mesic areas in cismontane woodland, and coastal scrub, in openings; 230 to 1,095 meters elevation; blooms April through June	Could occur in live oak dominated portions of Monterey pine forest or coastal scrub.
Hutchinson's larkspur <i>D. hutchinsoniae</i>	-	1B.2	Broadleaf upland forest, chaparral, coastal prairie, and coastal scrub; 0 to 427 meters elevation; blooms March through June	Could occur in grasslands or coastal scrub.
Umbrella larkspur <i>D. umbraculorum</i>	-	1B.3	Cismontane woodland; 400 to 1,600 meters elevation; blooms April through June	Could occur in live oak dominated portions of Monterey pine forest.
Eastwood's goldenbush <i>Ericameria fasciculata</i>	-	1B.1	Closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub, in sandy soils and openings; 30 to 275 meters elevation; blooms July through October	Possibly occurred historically (CNDDDB occ. no. 8); could occur in Monterey pine forest or coastal scrub.
Elegant wild buckwheat <i>Eriogonum elegans</i>	-	4.3	Cismontane woodland and valley and foothill grassland, usually in sandy or gravelly soils, often in washes, sometimes along roadsides; 200 to 1,525 meters elevation; blooms May through November	Could occur in live oak dominated portions of Monterey pine forest or grasslands.
Pinnacles buckwheat <i>E. nortonii</i>	-	1B.3	Chaparral and valley and foothill grassland, often on recent burns, in sandy soils; 300 to 975 meters elevation; blooms May through August (sometimes September)	Could occur in grasslands.
Sand-loving wallflower <i>Erysimum ammophilum</i>	-	1B.2	Maritime chaparral, coastal dunes, and coastal scrub, in sandy soils and openings; 0 to 60 meters elevation; blooms February through June	Could occur in coastal scrub.
Fragrant fritillary <i>Fritillaria liliacea</i>	-	1B.2	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often on serpentine soils; 3 to 410 meters elevation; blooms February through April	Could occur in live oak dominated portions of Monterey pine forest, coastal scrub, or grasslands.
Santa Lucia bedstraw <i>Galium clementis</i>	-	1B.3	Lower and upper montane coniferous forest, in rocky granitic or serpentine soils; 1,130 to 1,780 meters elevation; blooms May through July	Could occur in Monterey pine forest.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
Monterey gilia <i>Gilia tenuifolia</i> ssp. <i>arenaria</i>	E	T, 1B.2	Maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub, in sandy soils and openings; 0 to 45 meters elevation; blooms April through June	Could occur in live oak dominated portions of Monterey pine forest or coastal scrub.
San Francisco gumplant <i>Grindelia hirsutula</i> var. <i>maritima</i>	-	3.2	Coastal bluff scrub, coastal scrub, and valley and foothill grassland, in sandy or serpentine soils; 15 to 400 meters elevation; blooms June through September	Could occur in coastal scrub or grasslands.
Gowen cypress <i>Hesperocyparis goveniana</i>	T	1B.2	Closed-cone coniferous forest and maritime chaparral; 30 to 300 meters elevation	Could occur in Monterey pine forest.
<b>Monterey cypress</b> <i>H. macrocarpa</i>	-	1B.2	Closed-cone coniferous forest; 10 to 30 meters elevation	<b>Known to occur</b> within the right-of-way along Highway 1, though these may be planted rather than naturally recruited (USDOT, FHWA, and Caltrans 1973).
Kellogg's horkelia <i>Horkelia cuneata</i> var. <i>sericea</i>	-	1B.1	Closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub, in sandy or gravelly soils and openings; 10 to 200 meters elevation; blooms April through September	Possibly occurred historically (CNDDDB occ. no. 7); could occur in Monterey pine forest or coastal scrub.
Coast iris <i>Iris longipetala</i>	-	4.2	Coastal prairie, lower montane coniferous forest, and meadows and seeps, in mesic areas; 0 to 600 meters elevation; blooms March through May	Could occur in mesic areas in Monterey pine forest or grasslands.
Contra Costa goldfields <i>Lasthenia conjugens</i>	E	1B.1	Cismontane woodland, alkaline playas, valley and foothill grassland, and vernal pools, in mesic areas; 0 to 470 meters elevation; blooms March through June	Could occur in mesic areas in live oak dominated portions of Monterey pine forest or grasslands.
Beach layia <i>Layia carnosa</i>	E	E, 1B.1	Coastal dunes and coastal scrub, in sandy soils; 0 to 60 meters elevation; blooms March through July	Could occur in coastal scrub.
Coast yellow leptosiphon <i>Leptosiphon croceus</i>	-	1B.1	Coastal bluff scrub and coastal prairie; 10 to 150 meters elevation; blooms April through May	Could occur in coastal scrub or grasslands.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
Large-flowered leptosiphon <i>L. grandiflorus</i>	-	4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, and valley and foothill grassland, usually in sandy soils; 5 to 1,220 meters elevation; blooms April through August	Could occur in coastal scrub, Monterey pine forest, or grasslands.
Small-leaved lomatium <i>Lomatium parvifolium</i>	-	4.2	Closed-cone coniferous forest, chaparral, coastal scrub, and riparian woodland, in serpentine soils; 20 to 700 meters elevation; blooms January through June	Could occur in Monterey pine forest, coastal scrub, or riparian forest.
Carmel Valley bush-mallow <i>Malacothamnus palmeri</i> var. <i>involutus</i>	-	1B.2	Chaparral, cismontane woodland, and coastal scrub; 30 to 1,100 meters elevation, blooms May through August (sometimes October)	Could occur in live oak dominated portions of Monterey pine forest or coastal scrub.
Santa Lucia bush-mallow <i>M. palmeri</i> var. <i>palmeri</i>	-	1B.2	Chaparral; 60 to 365 meters elevation; blooms May through July	Possibly occurred historically (CNDDDB occ. no. 15); not likely to occur presently, no suitable habitat.
Carmel Valley malacothrix <i>Malacothrix saxatilis</i> var. <i>arachnoidea</i>	-	1B.2	Rocky soils in chaparral and coastal scrub; 25 to 1,036 meters elevation; blooms June through December	Could occur in coastal scrub.
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	-	3.2	Broadleaf upland forest, chaparral, cismontane woodland, and valley and foothill grassland, in rocky soils; 45 to 825 meters elevation; blooms March through May	Could occur in live oak dominated portions of Monterey pine forest or grasslands.
<b>Marsh microseris</b> <i>Microseris paludosa</i>	-	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland; 5 to 300 meters elevation; blooms April through June (sometimes July)	<b>Known to occur</b> along the crest of the east wall of Hatton Canyon; listed as associate on Hickman's onion record (CNDDDB occ. no. 13).
San Antonio Hills monardella <i>Monardella antonina</i> ssp. <i>antonina</i>	-	3	Chaparral and cismontane woodland; 500 to 1,000 meters elevation; blooms June through August	Could occur in live oak dominated portions of Monterey pine forest.
Woodland woolythreads <i>Monolopia gracilens</i>	-	1B.2	Broadleaf upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland, in serpentine soils and openings; 100 to 1,200 meters elevation; blooms March through July	Could occur in openings in live oak dominated portions of Monterey pine forest or grasslands.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
California adder's-tongue <i>Ophioglossum californicum</i>	-	4.2	Chaparral, valley and foothill grassland, and along vernal pool margins, in mesic areas; 60 to 525 meters elevation; blooms January through June	Could occur in mesic areas of grasslands.
South coast branching phacelia <i>Phacelia ramosissima</i> var. <i>australitoralis</i>	-	3.2	Chaparral, coastal dunes, coastal scrub, and coastal salt marshes and swamps, in sandy and sometimes rocky soils; 5 to 300 meters elevation; blooms March through August	Could occur in coastal scrub.
<b>Monterey pine</b> <i>Pinus radiata</i>	-	1B.1	Closed-cone coniferous forest and cismontane woodland; 25 to 185 meters elevation	<b>Known to occur</b> throughout Hatton Canyon (Palkovic, pers. comm., 2012; CNDDDB occ. no. 4; TAMC 2009).
Yadon's rein orchid <i>Piperia yadonii</i>	E	1B.1	Coastal bluff scrub, closed-cone coniferous forest, and maritime chaparral, in sandy soils; 10 to 510 meters elevation; blooms May through August	Could occur in coastal scrub or Monterey pine forest.
Hooked popcorn-flower <i>Plagiobothrys uncinatus</i>	-	1B.2	Sandy soils in chaparral, cismontane woodland, and valley and foothill grassland; 300 to 760 meters elevation; blooms April through May	Could occur in live oak dominated portions of Monterey pine forest or grasslands.
Hickman's cinquefoil <i>Potentilla hickmanii</i>	E	E, 1B.1	Coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps; 10 to 149 meters elevation; blooms April through August	Could occur in coastal scrub, Monterey pine forest, or wetlands.
Pine rose <i>Rosa pinetorum</i>	-	1B.2	Closed-cone coniferous forest; 2 to 300 meters elevation; blooms May through July	Could occur in Monterey pine forest.
Maple-leaved checkerbloom <i>Sidalcea malachroides</i>	-	4.2	Broadleaf upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, and riparian woodland, often in ruderal areas; 2 to 730 meters elevation; blooms April through August	Could occur in coastal scrub, grasslands, or riparian forest.
Santa Cruz microseris <i>Stebbinsoseris decipiens</i>	-	1B.2	Broadleaf upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland, in open areas, sometimes on serpentine soils; 10 to 500 meters elevation; blooms April through May	Could occur in Monterey pine forest, coastal scrub, or grasslands.

**Table 3-3  
Special-Status Plants Known from or with the Potential to Occur in Hatton Canyon**

Species	Status		Habitat and Blooming Period	Potential for Occurrence
	USFWS	CDFW		
California screw-moss <i>Tortula californica</i>	-	1B.2	Chenopod scrub and valley and foothill grassland, in sandy soils; 10 to 1,460 meters elevation	Could occur in grasslands.
Santa Cruz clover <i>Trifolium buckwestiorum</i>	-	1B.1	Broadleaf upland forest, cismontane woodland, and coastal prairie, in gravelly soils on margins; 105 to 610 meters elevation; blooms April through October	Could occur in live oak dominated portions of Monterey pine forest or grasslands.
Saline clover <i>Trifolium hydrophilum</i>	-	1B.2	Marshes and swamps, mesic areas in alkaline soils in valley and foothill grassland, and vernal pools; 0 to 300 meters elevation; blooms April through June	Could occur in wetlands or grasslands.
Pacific Grove clover <i>T. polypodon</i>	-	R, 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland, in mesic areas; 5 to 120 meters elevation; blooms April through June (sometimes July)	Could occur in Monterey pine forest or grasslands.
Monterey clover <i>T. trichocalyx</i>	E	E, 1B.1	In sandy soils, openings, and burned areas in closed-cone coniferous forest; 30 to 240 meters elevation; blooms April through June	Could occur in openings in Monterey pine forest.
<p>Notes:</p> <p><sup>1</sup> Legal Status Definitions:</p> <p><u>U.S. Fish and Wildlife Service (USFWS):</u>  E = endangered  T = threatened  - = no status</p> <p><u>California Department of Fish and Wildlife:</u>  E = endangered  T = threatened  R = rare  - = no status</p> <p><u>California Department of Fish and Wildlife California Rare Plant Ranks:</u>  1B= plant species considered rare, threatened, or endangered in California and elsewhere.  2 = plant species considered rare, threatened, or endangered in California but more common elsewhere.  3 = plant species about which we need more information – a review list.  4 = plant species of limited distribution – a watch list.</p> <p><u>California Rare Plant Rank Extensions:</u>  .1 = seriously endangered in California (&gt;80% of occurrences are threatened and/or have high degree and immediacy of threat).  .2 = fairly endangered in California (20–80% of occurrences are threatened and/or have moderate degree and immediacy of threat).  .3 = not very threatened in California (&lt;20% of occurrences are threatened and/or have low degree and immediacy of threat or no current threats known).</p>				
Sources: CNDDDB 2012; CNPS 2012; USFWS 2012b; data compiled by AECOM in 2012.				

## INVASIVE PLANT SPECIES

The *Carmel Hill & River Bicycle Trail EIR* (TAMC 2009), *SR 1/Rio Road Improvement IS/MND* (TAMC 2008), and *Route 1 EIR* (USDOT, FHWA, and Caltrans 1973) contain information on invasive species within Hatton Canyon. English ivy (*Hedera helix*), fennel (*Foeniculum vulgare*), Pampas grass (*Cortaderia jubata*), French broom and poison hemlock have all been documented in the canyon. The main species of concern from a management perspective is French broom.

There currently is no management or monitoring program in place for invasive plant species at Hatton Canyon. Invasive plant management activities could include manual, chemical, and mechanical treatments of invasive species throughout the property. A monitoring program should include annual inspections, photographic documentation, and mapping. Appropriate prescriptions for site maintenance can then be developed based on the inspections. The ongoing efforts to control and manage these and any additional invasive species that may become a problem in the future are essential to maintaining the high habitat values.

## Wildfire Management

Historically, fires burned regularly through the Carmel area, although historic grazing in the surrounding area reduced fuel loads and fire risk. Fire hazard ratings in the immediate vicinity of Hatton Canyon are designated as moderate or undetermined by Cal Fire. A map of the fire hazard ratings and previous fires in the region are shown on Exhibit 3-9. The absence of frequent, low intensity natural fires within the property has created fuel buildups.

Wildfire management in California State Parks is guided by Department Operations Manual (DOM) Section 0300-Natural Resources (section 0313.2.1 Wildfire Management), the Natural Resources Handbook, the *Wildfire Management Planning Guidelines and Policy* (California State Parks 2008), and the *Guidelines for Protection of Structures from Wildland Fires* (DPR 2009). These guidelines state that parks with wildland vegetation must have a wildfire management plan, and the guidelines provide a template for preparing wildfire management plans. Key components of the wildfire management plans include managing for wildfires before, during, and after a wildfire incident (California State Parks 2008). A wildfire management plan has not yet been prepared for Hatton Canyon.

If a park unit contains structures, California State Parks is required to maintain vegetation around those structures in accordance with the *Guidelines for Protection of Structures from Wildland Fires*. The amount of vegetation clearing depends on the type of structure, the slope and distance of vegetation from a structure, and type of vegetation. These guidelines also include resource management goals to reduce fuel loads including removal of invasive species, retaining sensitive native species, and retaining snags that are not touching any structures (DPR 2009).

Although there are no structures within Hatton Canyon, current vegetation management activities include mowing and limited vegetation clearing to reduce fuel load.

Emergency response to wildfires is discussed in Section 7.5.5, Security and Emergency Services, below.

# CARMEL AREA STATE PARKS GENERAL PLAN

## Special-status Plan Occurrences within the Hatton Canyon Property

-  Planning Area Boundary
-  Plant - Accuracy Class 1
-  Plant - Accuracy Class 2
-  Plant - Accuracy Class 3
-  Plant - Accuracy Classes 4-9
-  Highway
-  City Limits

CNDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.  
 CNDDB Accuracy Class 2: Reported location is an area with defined boundaries.  
 CNDDB Accuracy Class 3: Reported location is a non-specific area; buffer added to represent degree of uncertainty in reported location.  
 CNDDB Accuracy Classes 4-9: Reported location considered accurate within the radius shown.

Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.

Source: DPR 2012, CNDDB Dec 2012  
 Aerial Imagery: NAIP 2012  
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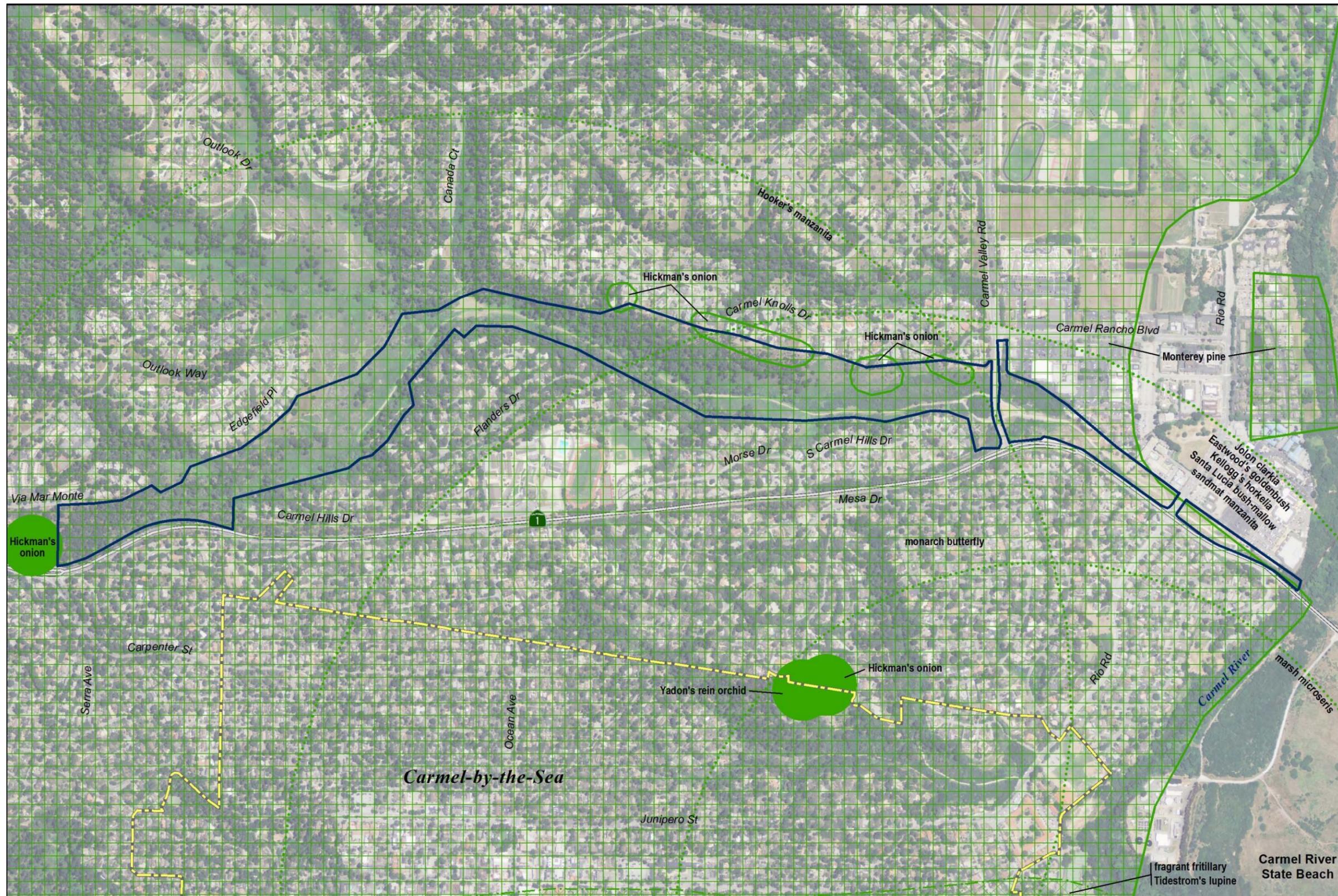


Exhibit 3-8

Special-Status Plant Occurrences





Exhibit 3-9

Fire Hazards in the Vicinity of Hatton Canyon



### 3.2.2 ANIMALS

Information about the wildlife species found at Hatton Canyon was gathered from the *Carmel Hill & River Bike Trail EIR* (TAMC 2009), *SR 1/Rio Road Improvement IS/MND* (TAMC 2008), and *Route 1 EIR* (USDOT, FHWA, and Caltrans 1973) unless otherwise noted below.

#### MONTEREY PINE FOREST

The Monterey pine forest provides valuable nesting and foraging habitat for several species. Mammals found in the forest include black-tailed deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), dusky-footed woodrat (*Neotoma fuscipes*), western gray squirrel (*Sciurus griseus*), bats, and gray fox (*Urocyon cinereoargenteus*). Birds include red-tailed hawk (*Buteo jamaicensis*), western scrub-jay (*Aphelocoma californica*), chestnut-backed chickadee (*Poecile rufescens*), American robin (*Turdus migratorius*), great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), and hairy woodpecker (*Picoides villosus*).

#### COASTAL SCRUB AND GRASSLANDS

Mammals commonly found in the coastal scrub and grasslands in Hatton Canyon include black-tailed deer, gray fox, raccoon, and brush rabbit (*Sylvilagus bachmani*). Birds include red-tailed hawk, Western kingbird (*Tyrannus verticalis*), horned lark (*Eremophila alpestris*), white-crowned sparrow (*Zonotrichia leucophrys*), California quail (*Callipepla californica*), California towhee (*Pipilo crissalis*), California thrasher (*Toxostoma redivivum*), and western scrub-jay. Reptiles observed include western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis catenifer*).

#### RIPARIAN FOREST

Riparian forest provides important nesting and foraging habitat for a large number of resident and migratory fowl. The drainage and wetlands associated with the riparian forest also provide a water supply for many wildlife species. Red-shouldered hawk (*Buteo lineatus*), Swainson's thrush (*Catharus ustulatus*), yellow warbler (*Setophaga petechia*), raccoon, black-tailed deer, and Virginia opossum (*Didelphis virginiana*) can be found in the riparian forest. The riparian forest also provides habitat for special-status species California red-legged frog (*Rana draytonii*) and Monterey dusky-footed woodrat.

#### RUDERAL

Common wildlife often found in ruderal areas includes American crow (*Corvus brachyrhynchos*), raccoon, striped skunk (*Mephitis mephitis*), western scrub-jay, European starling (*Sturnus vulgaris*), western fence lizard, and rock pigeon (*Columba livia*).

#### SPECIAL-STATUS ANIMAL SPECIES

The *Carmel Hill & River Bicycle Trail EIR* (TAMC 2009), *SR 1/Rio Road Improvement IS/MND* (TAMC 2008), and *Route 1 EIR* (USDOT, FHWA, and Caltrans 1973) contain information on special-status wildlife species found on the property. California State Parks staff have also observed several special-status wildlife species in Hatton Canyon (Palkovic, pers. comm., 2012). The CNDDDB (2012) and U.S. Fish and Wildlife Service (USFWS) Endangered Species list (2012b) were searched to gather additional information about special-status wildlife

species previously documented within Hatton Canyon (Exhibit 3-10) and the region. Regional occurrences of special-status species are shown in Appendix A. Special-status wildlife species known to occur within Hatton Canyon include California red-legged frog and Monterey dusky-footed woodrat. The southern portion of the property is included within federally designated critical habitat for California red-legged frog. Detailed information on special-status wildlife known from or with potential to occur within the property is provided in Table 3-4. Species that are known to occur within Hatton Canyon are shown in bold.

California red-legged frog is federally listed as threatened. California red-legged frog populations are threatened by predation by and competition from bullfrogs, road maintenance and traffic, and invasive plants altering upland habitat (CNDDDB 2012). Monterey dusky-footed woodrat is a California Species of Special Concern, meaning the CDFW has determined the species is vulnerable to extinction because of population declines, limited ranges, and/or other continuing threats.

No property-wide comprehensive survey for special-status wildlife has been conducted to date, and the extent of the populations of most of the species is not known. Detailed inventory and monitoring of special-status animals is recommended.

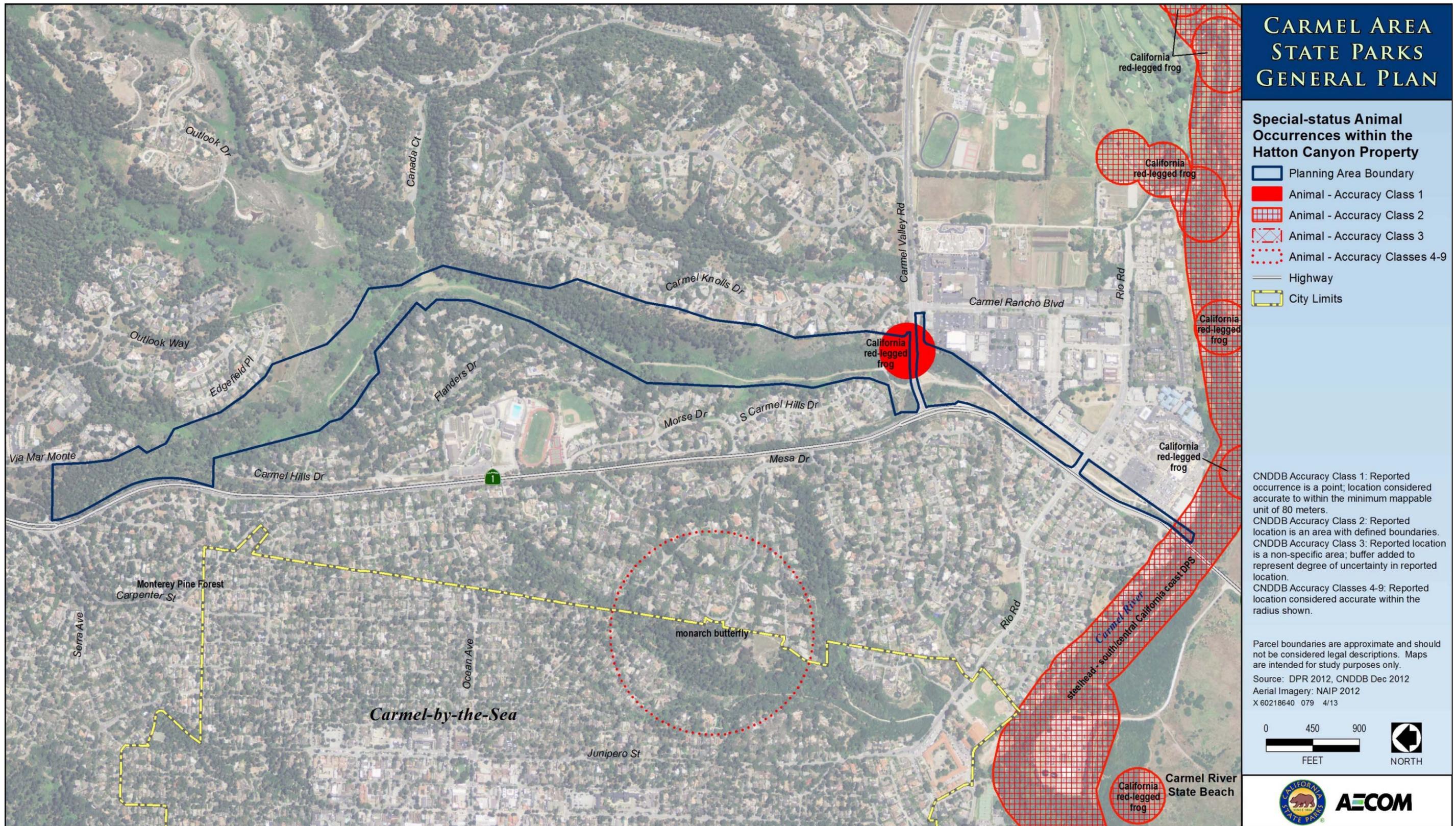
### **INVASIVE ANIMAL SPECIES**

No invasive animal species have been documented as causing problems in Hatton Canyon. Monitoring for invasive animal species should be conducted as part of proposed monitoring of biological resources, and, if detected, eradication of these species should be initiated while populations are still small.

## **3.2.3 ECOLOGY**

### **WILDLIFE CORRIDORS**

A functional network of connected wildlands is essential to the maintenance of diverse natural communities in a region. Wildlife populations depend on habitat connectivity to survive in the face of human development and climate change, and wide-ranging wildlife need unfragmented habitat and linkages between natural areas to support activities such as reproduction, foraging and migration. The presence of highways and other infrastructure can create barriers that limit access to seasonal ranges and other vital habitats, reduce genetic interchange, constrain dispersal of young, and reduce the long-term viability of wildlife populations. Maintaining connectivity between natural areas and minimizing further fragmentation is crucial to the long-term viability of California's natural heritage. Hatton Canyon and the three other park units included in this planning effort provide important habitat linkages for wildlife. Together with other protected public lands in the area, such as Palo Corona Regional Park, Palo Corona Ranch, the Santa Lucia Preserve, Garrapata State Park, and other lands owned by the Big Sur Land Trust (BSLT) and the MPRPD, Point Lobos SNR, Carmel River SB, the Point Lobos Ranch property and Hatton Canyon form an important regional network of wildland habitats (Exhibit 2-1). The drainage connecting the property to the Carmel River is an important wildlife corridor.



# CARMEL AREA STATE PARKS GENERAL PLAN

## Special-status Animal Occurrences within the Hatton Canyon Property

- Planning Area Boundary
- Animal - Accuracy Class 1
- Animal - Accuracy Class 2
- Animal - Accuracy Class 3
- Animal - Accuracy Classes 4-9
- Highway
- City Limits

CNDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.  
 CNDDB Accuracy Class 2: Reported location is an area with defined boundaries.  
 CNDDB Accuracy Class 3: Reported location is a non-specific area; buffer added to represent degree of uncertainty in reported location.  
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Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.  
 Source: DPR 2012, CNDDB Dec 2012  
 Aerial Imagery: NAIP 2012  
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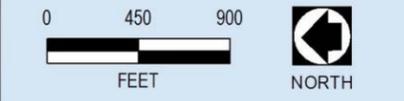


Exhibit 3-10

Special-Status Animal Occurrences



**Table 3-4  
Special-Status Wildlife Known from or with the Potential to Occur in Hatton Canyon**

Class	Species	Status <sup>1</sup>	Habitat	Potential for Occurrence
Amphibians	California tiger salamander <i>Ambystoma californiense</i>	CSC, CT, FT	Aestivates in underground burrows, especially ground squirrel burrows; breeds in vernal pools and other seasonal wetlands	Could aestivate in ground squirrel burrows in coastal scrub; could breed in seasonally inundated wetlands.
	<b>California red-legged frog</b> <i>Rana draytonii</i>	CSC, FT	Ponds and slow moving streams with overhanging vegetation	<b>Known to occur</b> (CNDDDB occ. no. 205).
Reptiles	Northwestern pond turtle <i>Emys (=Clemmys) marmorata marmorata</i>	CSC, CFP	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation	Could forage in the Hatton Canyon drainage, nest in grasslands or coastal scrub.
	Coast horned lizard <i>Phrynosoma blainvillii</i>	CSC	Lowlands along sandy washes with scattered low bushes.	Could occur in Hatton Canyon drainage.
Birds	Tricolored blackbird <i>Agelaius tricolor</i>	CSC	Open water, protected nesting substrate, and foraging area with abundant insects.	Could occur in Hatton Canyon drainage.
	Western burrowing owl <i>Athene cunicularia hypugaea</i>	CSC	Burrows in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-lying vegetation; breed in open, well-drained grasslands, steppes, deserts, prairies, and agricultural land	Could burrow in grasslands or coastal scrub.
	Black swift <i>Cypseloides ngra</i>	BCC, CSC	Nest on cliffs although forage in a variety of habitats	Could forage in the Hatton Canyon property.
	Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	CE, FE	Riparian woodlands	Could occur in riparian forest.
	California condor <i>Gymnocyps californianus</i>	CE, FE	Currently restricted to chaparral, coniferous forests, and oak savannah habitats in southern and central California. Formerly occurred more widely throughout the Southwest and also fed on beaches and large rivers along the Pacific coast. Nests in cavities in cliffs, in large rock outcrops, or in large trees. Roosts on cliffs or large trees, often near feeding sites. Forages mostly in grasslands, openings in chaparral, or in oak savannahs.	Could forage in the Hatton Canyon property.
	Least Bell's vireo <i>Vireo bellii pusillus</i>	CE, FE	Riparian	Could occur in riparian forest.
	Hoary bat <i>Lasiurus cinereus</i>	WBWG: M	Forages in open or patchy habitats with trees for cover; roosts in dense foliage of medium to large trees; near water	Could occur in riparian forest.

Table 3-4 Special-Status Wildlife Known from or with the Potential to Occur in Hatton Canyon				
Class	Species	Status <sup>1</sup>	Habitat	Potential for Occurrence
Mammals	<b>Monterey dusky-footed woodrat</b> <i>Neotoma fuscipes luciana</i>	CSC	Forest and chaparral	<b>Known to occur</b> (TAMC 2009).
	American badger <i>Taxidea taxus</i>	CSC	Dry, open areas in grasslands, shrublands, and forests; requires friable soils to dig burrows	Could occur in grasslands, coastal scrub, Monterey pine forest, or riparian forest.
Insects	Monarch butterfly <i>Danaus plexippus</i>	G5 S3	Roosts along the Pacific coast in winter in wind-protected tree groves with nectar and water sources nearby	Could roost in Monterey pine forest or riparian forest.
	Smith's blue butterfly <i>Euphilotes enoptes smithi</i>	FE	Coastal dunes and coastal sage scrub in Monterey and Santa Cruz counties	Could occur on buckwheat plants south of Carmel Valley Road and in the Monterey pine forest and grasslands, though no individuals have been observed during surveys (USDOT, FHWA, and Caltrans 1973; TAMC 2009).
Notes: <sup>1</sup> Status Codes: BCC = US Fish and Wildlife Service Birds of Conservation Concern; CE = California Endangered; CFP = California Fully Protected; CSC = California Species of Special Concern; CT = California Threatened; FE = Federal Endangered; FT = Federal Threatened; G5 S3 = Global rank: demonstrably secure, common; State rank: restricted range; WBWG: M = Western Bat Working Group - Medium Priority. Source: CNDDDB 2012; DPR 1979; Palkovic, pers. comm., 2012; USFWS 2012; data compiled by AECOM in 2012.				

## NATURAL PROCESSES

### Fire

The upland vegetation communities on the Monterey Peninsula are largely shaped by fire. The structure of the pine and cypress forests is dependent on a regular fire regime. Cones of Monterey pine, Monterey cypress, and Gowen cypress will slowly release seeds once mature, but open more rapidly with fire (TMPFW 2011, Barbour 2007, Patterson 1995). Optimum seedling recruitment for the pine and cypress species takes place following a fire (DPR 1979, Barbour 2007). Cypress seeds require bare mineral soil in full sunlight to germinate (Barbour 2007, Patterson 1995), and dense stands are produced following fires (DPR 1979). Scrub communities are known to be well adapted to recurring fires; many species resprout from stumps and have long-lived seed banks which germinate following fires (DPR 1979). Since fire suppression began on the Monterey Peninsula, habitat quality of the coastal scrub has declined for special-status plants and animals dependent on a more frequently disturbed scrub community (Ford and Hayes 2007). The Native Americans in the Monterey area were known to set frequent, small fires to maintain the coastal prairie (TMPFW 2011, Ford and Hayes 2007). Burning the coastal prairies eliminated woody invaders and increased herbaceous diversity, allowing for the germination of edible plants and browse for game animals (DPR 1979, TMPFW 2011). The absence of frequent, low intensity natural fires in the area has created high fuel buildups, especially in the Monterey pine ecosystem. Because the property is surrounded by residential and commercial development, the potential for wildfire is a concern.

### **3.2.4 MONITORING**

The former Inventory, Monitoring, and Assessment Program (IMAP) provided goals, guidance, and standards for California State Parks efforts to systematically evaluate the vegetation, wildlife, and physical natural resources of the State Park System (California State Parks 2012b). Evaluations consisted of collecting data through various scientific means in each state park system unit. Data was generally quantitative and consisted of counts and measures of natural resources. The data was used to make status assessments of a unit's natural resources, such as what resources are present, where the resources are distributed, and how much of a resource is present. Data was also used to detect changes in resources over time so that trends in the unit's health can be ascertained and corrective management action can be taken.

Because of a lack of funding IMAP monitoring has not been conducted in recent years. Developing and implementing a monitoring system for the long term monitoring of the natural resources within the Hatton Canyon property could document baseline conditions to measure change over time and guide management.

## **3.3 CULTURAL RESOURCES**

### **3.3.1 PREHISTORIC BACKGROUND**

Information on the prehistoric background presented here is summarized primarily from the following report that documented the results of test and data recovery excavations conducted at Point Lobos SNR: *Test and Data Recovery Excavations at Sites CA-MNT-261, -217/H, and -263, for the Point Lobos State Reserve Bird Island Trail Accessibility Improvements Project, Monterey County, California*, prepared for California State Parks, Monterey District by Far Western Anthropological Research Group, Inc. (FWARG) in July 2010 (Mikkelsen and Jones 2010). That work is in turn based on the most recent chronological sequence developed for the Monterey Bay area which includes five general time periods (Jones et al. 2007). Additional background and citations are provided as appropriate.

#### **PALEOINDIAN PERIOD**

The Paleoindian Period starts at the end of the Pleistocene and dates prior to 10,000 years before present in calibrated radiocarbon years (cal. BP). There have been very few known archaeological sites in Hatton Canyon dating to this earliest period and many important questions about settlement patterns, subsistence activities, tool making, and social organization remain unanswered (Jones et al. 2007, Mikkelsen and Jones 2010). The Scotts Valley site (CA-SCR-177), located about 28 miles north of Hatton Canyon yielded radiocarbon dates as early as 13,500 cal. BP, however the deposit was too mixed to allow an assignment of a specific assemblage to the time period (Cartier 1989, 1993; Mikkelsen and Jones 2010). Likely reasons so few sites dating to this period have been found include sea level rise at the end of the Pleistocene Period that submerged much of the California coast that had previously been exposed, destruction of sites by coastal erosion, and deep burial of sites by alluvial deposition (Jones and Waugh 1997).

#### **MILLINGSTONE PERIOD**

The Paleoindian Period is followed by the Millingstone Period, which lasted from 10,000 to 5500 cal. BP (Jones et al. 2007, Mikkelsen and Jones 2010). Few sites dating to this period have been identified for the same reasons

that few Paleoindian sites have been found (Jones and Waugh 1997). Flooding of sloped coastline areas during this period produced estuaries that were highly utilized by prehistoric groups of this period, however interior areas were also used. Sites dating to this period tend to have shell middens containing more ground and battered stone tools relative to flaked stone tools; indicating that shellfish and seeds were more important food resources than large terrestrial and marine animals during this period. Diagnostic artifacts that are indicative of the period include eccentric crescents, long-stemmed projectile points, and thick rectangular (L-series) *Olivella* beads (Jones et al. 2007, Mikkelsen and Jones 2010). Prehistoric inhabitants of the area were likely highly mobile, moving in accordance with the seasons to obtain both inland and coastal resources (Jones and Waugh 1997, Mikkelsen and Jones 2010).

Sites dating to this period are most often found in southern California, but Millingstone Period components have been found at Elkhorn Slough at CA-MNT-229 and CA-MNT-234, near Castroville at CA-MNT-228 and CA-MNT-1570, and at CA-SCL-178 in the southern Santa Clara Valley (Mikkelsen and Jones 2010). A Millingstone Period component was also found at the Scotts Valley Site (CA-SCR-177) and, unlike the Paleoindian component, produced three reliable radiocarbon dates from this period and a discrete component with abundant amounts of ground stone artifacts (Jones and Waugh 1997, Mikkelsen and Jones 2010).

## EARLY PERIOD

The Millingstone Period is followed by the Early Period, which lasted from 5500 to 2600 cal. BP (Jones et al. 2007, Mikkelsen and Jones 2010). This period is characterized by adoption of new land use patterns, new tools, and new forms of social organization (Mikkelsen and Jones 2010). While use of estuaries remained important, settlements expanded to include open coast locales, which was likely the result of environmental fluctuations and population increases (Jones and Waugh 1997, Mikkelsen and Jones 2010). This trend did not follow at Elkhorn Slough where the closing of the slough and the decline in its estuary resources probably led to the abandonment of some sites such as CA-MNT-229 (Mikkelsen and Jones 2010). Some researchers also believe that increasing aridity in the Great Basin not only put pressure on populations in that area, but caused a ripple effect putting pressure on coastal groups, triggering a greater reliance on trade networks, increased use of local resources, and more rigid territorial boundaries (Jones and Waugh 1997, Mikkelsen and Jones 2010).

Mortars and pestles first appear during this period, likely signaling the incorporation of acorns into the diet (Mikkelsen and Jones 2010). Some researchers question the link between mortars, pestles, and acorn use this early in the archaeological record; however, burnt acorn remains in an Early Period component at Morro Bay support the idea of a relationship between mortars and pestles and the intensified use of acorns in this period (Mikkelsen and Jones 2010). Researchers further speculate that acorn intensification may have occurred to balance a protein-rich marine diet (Mikkelsen and Jones 2010). Artifact assemblages also contain greater proportions of hunting and fishing tools during this period, indicating these activities were increasing in importance (Jones and Waugh 1997, Mikkelsen and Jones 2010).

Artifacts common or indicative of this period include thick rectangular (Class L), end-ground (Class B), and split (Class C) *Olivella* beads and square *Haliotis* forms; projectile points of the period include Contracting-stemmed, Rossi Square-stemmed, and Side-notched types (Jones et al. 2007, Mikkelsen and Jones 2010). There is conflicting evidence regarding whether populations were highly mobile or if they were becoming increasingly constrained (Mikkelsen and Jones 2010).

Sites in Monterey County with components dating to the Early Period include CA-MNT-108, where the abundance of fish remains has led some researchers to speculate if fish were being harvested for trade (Breschini and Haversat 1993). The site also appears to represent a large summer occupation village (Breschini and Haversat 1989). Smaller village sites in the Monterey region include CA-MNT-17C and CA-MNT-95. Other sites in the Monterey area dating to this time period include CA-MNT-116, -148, -170A, -170C, -387, and -391 (Mikkelsen and Jones 2010).

## **MIDDLE PERIOD**

The Early Period is followed by the Middle Period which lasted from 2600 to 1000 cal. BP (Jones et al. 2007, Mikkelsen and Jones 2010). The large number of sites dating to this period most likely reflects an increase in population (Mikkelsen and Jones 2010). Not all of the changes that occurred from the former period are obvious; some changes represented continuations of previous trends; for example, mortars and pestles continued to increase in importance indicating that the use of acorns was also increasing in importance (Garlinghouse et al. 2009). At sites in Santa Clara County, however, shellfish decreased in importance possibly because of a decrease in coastal access (Mikkelsen and Jones 2010). Typical artifacts of the Middle Period include Contracting-stem, Side-notched, and Concave-base projectile points, mortars and pestles, hand stones, millingslabs, F and G series *Olivella* beads (Garlinghouse et al. 2009, Mikkelsen and Jones 2010). Probably the most important technological event during this period was the first appearance of circular shell fishhooks (Garlinghouse et al. 2009). Although, fishhooks are mostly found on rocky coasts, in slough habitats, fish were probably gathered by baskets, nets, or other methods. Fishhooks likely represent an increase in exploitation in fish (or specific kinds of fish) but also may have resulted in a decrease in the efficiency of collecting high calorie resources (Garlinghouse et al, 2009). Trade across the Sierra Nevada Mountain Range also appears to increase, with obsidian from the Casa Diablo source being very important in the Monterey Bay area while obsidian from the Coso source is important to the south (Garlinghouse et al. 2009, Mikkelsen and Jones 2010).

Archaeological sites or components of sites that date to the Middle Period have been found at many locations in the broader region including San Luis Obispo County and Santa Cruz County and possibly further inland in Merced County and Kern County (Jones et al. 2007, Mikkelsen and Jones 2010). One of the largest sites in the Monterey region is CA-MNT-12. Located to the southeast of the project area within Point Lobos Ranch, the site contains a large and diverse artifact assemblage and human remains (Howard and Cook 1971; Schwaderer 2004). Near Little Pico Creek in San Luis Obispo County CA-SLO-175 also contained a large Middle Period component with a diverse assemblage of tools and some burials (Jones and Waugh 1995). Other Middle Period components have been found at CA-MNT-229 and CA-MNT-282 in southern Monterey County near Cape San Martin, CA-SCR-9 in the Santa Cruz Mountains, and CA-SCR-7 in Santa Cruz County also contains a Middle Period component (Jones et al. 2007). Artifacts found at these sites include Side-notched and Square-stemmed projectile points as well as Contracting-Stem and concave base types, saucer-shaped *Olivella* shell beads, mortars, pestles, hand stones, and milling stones (Mikkelsen and Jones 2010).

## **MIDDLE/LATE TRANSITION**

The Middle Period is followed by the Middle/Late Transition, which lasted from 1000 to 700 cal. BP (Jones et al. 2007, Mikkelsen and Jones 2010). Peak use of coastal areas occurred during the beginning of this period, but was followed by abandonment of coastal sites in the region (Mikkelsen and Jones 2010). Originally, most researchers thought these changes were caused by over-exploitation of marine resources and increased population pressure

leading to intensification of the use of inland terrestrial resources. There is evidence, however, that the changes may have been caused by environmental stress. At about this same time, western North America had a strong warming event, the “Medieval Climatic Anomaly” (Stine 1990, 1994).

Among the environmental changes associated with the warming event was decreased precipitation that may have had a very large impact among coastal populations. Researchers have argued that populations “de-intensified” how they gathered food resources during the climatic event. During this period population growth declined, trade systems collapsed, fewer kinds of food resources were exploited, and in Monterey County several coastal sites were abandoned in favor of areas located in the interior. Obsidian from eastern sources almost disappears from the archaeological record (Garlinghouse et al. 2009). Recent studies, however, indicate stable, seasonal use of coastal areas from the Middle to Late periods (Mikkelsen and Jones 2010).

CA-MNT-12, -17A, -17C, -107, -111, -112, -116, -117, -170A, -170C, -187, -438, -1084, and -1348 all contain components that date to the Middle/Late Transition Period. Ten miles east of Carmel Valley, sites CA-MNT-1485/H and -1486/H yielded reliable data indicating they date to this period (Breschini and Haversat 1992 2010). CA-MNT-12 is one of a small number of sites that contain components spanning from the Middle to Late periods, including the Middle/Late Transition Period (Schwaderer 2007; Mikkelsen and Jones 2010).

## **LATE PERIOD**

The Middle/Late Transition Period is followed by the Late Period, which lasted from 700 cal. BP to European contact. Many researchers believe that during this period groups in the Monterey region maintained an inland focus and concentrated on using acorns and other terrestrial resources, though there is contradictory data as well (Garlinghouse et al. 2009). Villages were generally located in valley bottoms and near lakes or rivers, while coastal sites were used as short-term processing camps by inland inhabitants (Mikkelsen and Jones 2010). Large amounts of ground stone tools and high diversity of botanical remains signal a continuing reliance on plant processing though in inland areas there appears to be a heavy reliance on the hunting of deer (Garlinghouse et al. 2009, Mikkelsen and Jones 2010). Oxygen isotope studies and ethnographic information have been used to investigate settlement distribution in the central California coast. These studies have recognized two groups exploiting the region, one inland –focused group and the other a year-round, semi-sedentary coastal population focusing on a marine resource base with acorn having a less important role in their diet (Mikkelsen and Jones 2010).

Most of the coastal sites dating to this period represent specialized shellfish processing stations, although there are some sites that evidence a broader range of activities including marine and terrestrial mammal hunting (Mikkelsen and Jones 2010). Some researchers believe these sites may have functioned as temporary residential sites used seasonally in coordination with the shellfish processing sites and inland villages (Garlinghouse et al. 2009). Other locations show evidence of red abalone procurement by specialized task groups (Mikkelsen and Jones 2010). Very late in the period, there is evidence of changing subsistence strategies and settlement patterns either related to the resumption of past activities or as a reaction to European contact. Evidence for this includes a greater diversity of botanical remains from coastal sites than would be expected from a specialized processing camp and an emphasis on shellfish at other locations (Mikkelsen and Jones 2010). Likewise, the identified changes may be the result of a population rebound following the presumed population drop during the Middle/Late Transition Period, as evidenced by an increase in the number of burials and features (Mikkelsen and Jones 2010).

Artifacts marking the Late Period include Desert Side-notched projectile points and Class E (lipped), K (callus), and M (thin rectangular) *Olivella* shell beads (Garlinghouse et al. 2009, Mikkelsen and Jones 2010). Bead drills and waste from bead manufacture at several sites indicate that bead manufacture was widespread but not intensive (Garlinghouse et al. 2009).

A large number of sites date to the Late Period in the Monterey region (Garlinghouse et al. 2009, Mikkelsen and Jones 2010). CA-MNT-1485/H and -1486/H may represent at least a portion of the Rumsien ethnographic village *Echilat* (Breschini and Haversat 1992). CA-MNT-12 may represent at least a portion of the Rumsien ethnographic village of *Ichxenta* (Howard and Cook 1971). CA-MNT-170 is located at the south end of Monterey Bay and consists of a large, multi-component midden site. CA-MNT-156 and -436 are coastal sites showing a broader range of activities than shellfish procurement. CA-MNT-1942 is on the Big Sur coast and contains an artifact assemblage suggesting to researchers that coastal sites during the Late Period were not as well-developed as they were prior to the Medieval Climatic Anomaly, although there appears to have been a rebound in coastal populations.

### 3.3.2 ETHNOGRAPHIC BACKGROUND

#### OVERVIEW

The Carmel area is located in the traditional territory of the Costanoan or Ohlone people. “Costanoan” is derived from the Spanish word for “coast dweller”. Ohlone (or Alchone, Olchone, Oljon, or Olhon) was the name of a tribe between San Francisco and Santa Cruz. Ohlone has come to be used to describe a related set of languages as well as the people who speak these languages (Bean 1994, Heizer 1967, Levy 1978).

Ohlone groups inhabited the San Francisco Peninsula, the eastern Bay Area south to the San Joaquin Delta, and the Santa Clara Valley to Monterey and inland south to San Juan Bautista when Europeans first arrived in the region in the 1760s. Ohlone territory encompassed a variety of ecological zones including grasslands, woodlands, chaparral, redwood forests, sea coasts, bay estuaries, and tidal marshes. Miwok people lived to the north and northeast and Yokuts groups lived to the east. South of the Ohlone territory lived Esselen and Salinan, whose languages were of the Hokan language stock. Costanoan is part of the Utian family of languages and likewise part of the larger Penutian language stock. Penutian speakers include Maidu, Wintu, Miwok, and Yokuts people. Costanoan is divided into eight languages (Levy 1978). Esselen and Salinan speaking people would gather food in the area, and the Esselen likely occupied the Carmel area prior to the arrival of the Ohlone (Broadbent 1972, Milliken 1987).

Ohlone may have come into the San Francisco and Monterey Bay Area relatively late in time, perhaps as late as 1450 B.P., originating in the San Joaquin-Sacramento River system and displacing earlier Hokan speaking people (Levy 1978). The migration to the Bay Area may have come much earlier according to some researchers, who propose Penutian speakers may have entered the Bay Area at approximately 4950 B.P. (Whistler 1977).

Researchers disagree on the exact number of the Ohlone population at European contact. Estimates vary from 7,000 to 11,000 (Cook 1943, Heizer 1974, Kroeber 1925, Levy 1978). Modern estimates based on Mission records suggest a population density of 2.5 individuals per square mile in the San Francisco Peninsula (Milliken 1995). Milliken notes that large villages were located near the Carquinez Straight, San Francisquito Creek, and Point Año Nuevo.

European contact, through Spanish colonization, missionization, and introduction of foreign diseases, brought drastic, cataclysmic changes to California Indians. Spanish missionaries actively discouraged or banned traditional practices, and populations drastically declined because of increases in deaths and a declining birth rate. By the time anthropologists such as Harrington (1985), Kroeber (1925), and Merriam (1967) began studying California Indians many customs, rituals, and rites had been forgotten or lost. Many aspects of Ohlone culture were nevertheless passed down to later generations. Ethnographers have been able to use this information, as well as Spanish diaries, letters, and other documents and archaeological investigations, to develop a broad outline of past Ohlone culture (Bean 1994, Broadbent 1972, Kroeber 1925, Levy 1978, Milliken 1995).

The Ohlone lived in approximately 50 politically autonomous villages called tribelets (Kroeber 1925). Tribelet chiefs could be male or female, but the office was generally inherited through the male line usually passing from father to son (Levy 1978). Tribelets usually included one large, centralized, permanent village and one or more, smaller satellite villages that were occupied for several months of the year depending on what resources were available during the season. Families came together during winter months both to share food and to participate in annual ceremonies. Warfare was common, with many Spanish accounts noting tribelets battling over land rights or points of honor (Broadbent 1972, Margolin 1978, Milliken 1995).

Men and boys usually did not wear any clothing, though they covered themselves in mud on cold mornings. Ornaments included *Olivella* bead necklaces, abalone pendants, and pierced ears and nasal septums with ornaments. Men allowed their facial hair to grow out and, if it was long, would braid their hair or tie it on the top of their heads. Women braided plant fibers for a front apron and used sea otter or deer skin for a rear apron. Many women had chin tattoos, usually consisting of lines and rows of dots. Men and women wore robes woven from animal skins when it was cold. Men often applied dyes and other decorations to their bodies during rituals or warfare (Levy 1978, Milliken 1995).

Ohlone followed a seasonal round of resource availability, hunting and gathering whatever food resources were available depending on the season. Family groups were generally spread out across their territory, but came together whenever a large number of people were required to harvest large amounts of food resources, which were usually stored for winter and early spring when the tribelet would gather (Levy 1978).

The most important food source for the Ohlone consisted of acorns (Beechy 1968, Bickel 1981, Broadbent 1972, King 1974, Milliken 1995). The favorite acorns of the Ohlone came from tanbark oak, valley oak, coast live oak, and California black oak. Preparing acorns so they could be eaten was a long process. The acorns were collected during the fall season and then ground into flour using pestles and either bedrock mortars or portable mortars. The flour was then leached in streams to remove tannic acids. The acorn meal was made into cakes or mush and eaten during the winter. Other important foods included buckeye nuts and dock, gray pine, and tarweed seeds. Gooseberries, blackberries, madrone, and wild grapes were among the berries harvested. Roots that were eaten included wild onion, cattail, and wild carrot. Kelp, which was sundried and roasted, was eaten by groups living on the coast (Broadbent 1972).

Shellfish were also immensely important in the Ohlone diet, as evidenced by large shell mounds and Spanish accounts of Ohlone collecting and processing shellfish. Various shellfish species that were collected and eaten by the Ohlone included mussels, abalone, clam, oyster and scallop species. Many of these species were gathered year-round with prying sticks or by hand, but were likely mostly collected during winter. Clams would have been dug from tidal flats while a variety of fish such as salmon, sturgeon, steelhead, and others would have been taken

with nets or spears (Broadbent 1972, Levy 1978). Marine mammals such as sea lions, seals, and sea otters were clubbed on beaches and meat from beached whales was also taken and roasted (Baumhoff 1963).

Land animals that were hunted included deer, pronghorn, and tule elk (Baumhoff 1963). Controlled burns were used in grassland and woodland settings to help in hunting activities. Controlled burns also helped clear dense vegetation and increased the productivity of grasses which attracted game animals. Other animals that were hunted included rabbits, which were taken using nets in large communal drives, squirrels, woodrat, mice, and moles (Levy 1978).

Patrick Orozco of the Pajaro Valley Ohlone Indian Council related a story of Jose Bernarbe, better known as El Sordo (“the deaf one”) or simply “Sordo,” who lived for many years in Hatton Canyon. Sordo, a Salinan, whose mother was from Mission San Antonio, was adopted by Juan Onesimo, who married his mother after his father was killed. According to Patrick, John Steinbeck knew Sordo, and some believe that Sordo may have contributed to the composite character of “the Pirate” in Steinbeck’s *Tortilla Flat*.

Patrick’s great grandmother Maria Dixon, better known as “Mamita,” told Patrick how when she was just 6 years old (ca. 1885) her family went to Sordo’s house in Hatton Canyon where they met up with many other local Indians. They all hiked several miles up the canyon to the east of his house until they came to an open area at the top (possibly Jack’s Peak). There the Indians put on their regalia, and Mamita observed a traditional native ceremony.

Sordo’s cabin site lies within the Hatton Canyon park boundaries and although no features or artifacts related to the cabin have been identified, there may be cultural remains hidden under the dense vegetation. A more thorough survey of the cabin site that Mr. Orozco identified should be undertaken.

## **CONTACT PERIOD**

When contact was first made with Spanish explorers, the Rumsien, the local Ohlone group, occupied Point Lobos and the lower Carmel River Valley. A study of Spanish mission registers shows that there were between 400 and 500 Rumsien with a population density of between two and two and a half people per square mile. Accounts by Spanish explorers indicate that the Rumsien lived inland and only came to the coast for fish and shellfish, with a heavy reliance on deer and acorns (Mikkelsen and Jones 2010).

Milliken, using census information from the Mission San Carlos baptismal register for 1770, estimates that the Rumsien were distributed between five villages much of the year. Baptized village populations ranged from 40 to 150 individuals. The villages included *Tucutnut*, likely located 4 miles inland along the Carmel River; *Socorronda*, located approximately 7 miles up the Carmel River; *Echilat*, located 5 miles southwest of the Carmel River Valley; *Achasta*, located either at the San Carlos Mission or at Monterey; and *Ichxenta*, which although generally associated with the Hudson Mound (CA-MNT-12), Milliken believes was situated approximately 5.5 miles up the Carmel River. There were at least four other campsites and likely numerous more that were never recorded (Mikkelsen and Jones 2010).

The local Rumsien were bordered by three other Rumsien-speaking peoples and an Esselen-speaking group. Their populations were likely divided among multiple villages. Despite borders usually being defended, there were at least certain occasions or times of the year when neighboring tribes were allowed to enter their neighbor’s

territory and collect resources. Traditional food sources declined greatly, however, because of the introduction of Spanish cattle herds, and alteration of the landscape to make it more accommodating for grazing and agriculture. Although introduced diseases were the major cause for Rumsien population decline, the impact upon local food resources was also factor (Mikkelsen and Jones 2010).

### **3.3.3 ARCHAEOLOGICAL INVESTIGATIONS**

There is little information regarding cultural resources within Hatton Canyon. Information in this section is based heavily on *Archaeological Survey Report, Carmel Hill and River Bike Trail near Route 1 from Rio Road to Canyon Drive, Monterey County*, by C.I. Busby of Basin Research Associates in San Leandro, prepared for Caltrans District 5 in April 2008. Busby's investigation included most of the Hatton Canyon unit and included an intensive pedestrian survey with transects spaced approximately 2 to 5 meters apart. The investigation was conducted in support of the Carmel Hill and River Bike Trail project. That report produced for the project noted that a record search at the Northwest Information Center identified one prehistoric cultural resource, CA-MNT-290 (P-27-000393), as being within or adjacent to Hatton Canyon. The report also noted that after thorough additional research, including a field survey of the project site, the cultural resource was found to be misplotted by the Information Center and not located on State Parks property. No other cultural resources were documented during the field survey. Therefore, there are no known prehistoric period cultural resources in Hatton Canyon (Busby 2008).

### **3.3.4 HISTORIC BACKGROUND**

#### **SPANISH SETTLEMENT**

Sebastián Vizcaíno, a successful merchant trader, was appointed by the Viceroy of New Spain, Monterey, to head the exploratory party to map the coast of California. Vizcaíno sailed into Monterey Bay in 1602 and thought it was an ideal harbor where Spanish ships could rest, make repairs, and take on supplies. Vizcaíno gave an exaggerated description of the bay and its harbor when he recommended that Monterey Bay be the site of a Spanish colony (Beck and Haase 1974:14). The Viceroy Monterey was succeeded by Marqués de Montesclaros who distrusted Vizcaíno and did not believe Vizcaíno's report of a splendid harbor and thus never allowed for a colony's establishment (Bean 1973:23). One hundred and sixty-seven years later, the Don Gaspar de Portolá-Father Crespi expedition arrived in the Monterey Bay area with plans to establish a permanent settlement in Upper California. The expedition left San Diego on July 14, 1769, to find Monterey Bay. After a difficult passage over the Santa Lucias Mountains they followed the Salinas River and reached the ocean on September 30, 1769. The expedition mistook the Salinas River as the Carmelo River described by Vizcaíno. Therefore, the landmarks, the peninsula and Point Pinos, described by Vizcaíno were not in the correct location and the bay did not resemble Vizcaíno's description. The expedition also anticipated that their ship, *San José*, would be waiting for them. Each of these factors convinced the expedition that they were not at Monterey Bay (Beck and Haase 1974:17; Bean 1973:38).

The expedition was short on supplies and the decision was made to return to San Diego. Before leaving, they erected a cross on a knoll near the lagoon near the Carmel River SB. Buried beneath the cross was a letter inside a bottle with instructions for the San José to look for them along the coast and the explanation that they had decided to return to San Diego because a lack of supplies made it too difficult to continue. A second cross was erected at

the northeast side of the Point Pinos where the harbor was supposed to have been located. The expedition reached San Diego on January 24, 1770 (Brown 2001:633; Bean 1973:39).

Portolá, still seeking the location of Monterey Bay, set out on a land expedition to the bay on April 17, 1770. The ship *San Antonio* carried Father Junipero Serra, Lieutenant Pedro Fages and Miguel Costansó, a cartographer and engineer, towards Monterey Bay. Portolá followed practically the same route as the previous year. On May 24th, the party reached Monterey Bay and discovered the cross that was placed in 1769 at Point Pinos. The cross was surrounded by feather-topped arrows, sticks and other artifacts, which were placed there by the Native Americans. The expedition camped in the same location as they had previously. As the fog burned off they had a clear view of the region and realized that the bay, which they had previously mistaken for a lake was actually Monterey Bay (Engelhardt 1912:72–73; Brown 2001:733). After Portola left the area, Serra established a permanent presence in the area with the construction of Presidio of Monterey and Mission San Carlos de Borromeo in Monterey. Later in 1771, Father Serra moved the Mission San Carlos de Borromeo in Monterey to Carmel Bay, north of the mouth of the Carmel River (Hoover and Kyle 1990:214–215; Stammerjohan 1980:1). Herds of cattle and flocks of sheep were raised at the Mission and with the establishment of nearby ranchos an early industry developed. Meanwhile, a marine resource centered industry was also established centering on hunting otter and seal. Eventually, the point south of the Carmel River was named *Punta de los Lobos Marinos* or Point of the Sea Wolves after the numerous sea lions living in that area (Stammerjohan 1980:1).

## **RANCHO PERIOD**

After the secularization of California's missions in 1834, Lazaro Soto was granted a one square league of land, Rancho Cañada de la Segunda, from Jose Castro in 1839. After California became a state in 1850, the California Lands Commission was established to determine the validity of land claims granted during Mexican rule. By 1853, Soto had sold the property to Andrew Randall and Fletcher M. Haight. The two men filed a claim with the California Lands Commission, which was confirmed in 1855. By 1858 a road was established that crossed the western boundary of Rancho Cañada de la Segunda. The patent was issued to Haight in 1859, after the death of Andrew Randall (Hoffman 1862, Perez 1996, Hoover et al. 1966). Dominaga Goni de Atherton, wife of Faxon Dean Atherton, acquired the rancho in 1869. By 1892, rancho manager William Hatton purchased it from Mrs. Atherton (Basin Research Associates 2008:17; Cloud 1858, Howard 1978, Clark 1991 cited in TAMC 2009).

## **AMERICAN PERIOD**

During the early 19<sup>th</sup> century, Rancho Cañada de la Segunda was part of larger ranch holdings of William Hatton. Hatton was born in Ireland in 1849 and came to California in 1870. He managed several dairies in Carmel Valley, including Pacific Improvement Company's Del Monte Dairy at Rancho los Laureles, and by 1888 was managing Rancho Cañada de la Segunda for Mrs. Atherton. Hatton introduced Durham cattle to his stock of Holsteins and successfully increased his stock breed and the milk butter fat from his dairies. Although he was managing the Atherton dairy, he operated his own dairy, the Hatton Lower Dairy that was situated at Highway 1 and Carmel Valley Road (now the site of a modern shopping center) (Barratt 2010:44–45). Shortly after purchasing the rancho, Hatton died in 1894. His wife, who died in 1922, would continue to manage the family ranching properties until the responsibility was passed to her children (USGenWeb 2013; Sand-Realty 2012; Basin Research Associates 2008:17).

### **3.3.5 ARCHITECTURAL RESOURCES AND LANDSCAPES**

No National Register of Historic Places or California Register of Historic Places listed, determined eligible, or pending properties have been identified within Hatton Canyon. In addition, no historic archaeological resources have been identified within the property (TAMC 2009).

### **3.3.6 COLLECTIONS**

There are no collections related to Hatton Canyon.

## **3.4 AESTHETIC RESOURCES**

Scenic resources can provide a unique sense of place to an individual park, and to specific areas within a park unit. Scenery can be defined as the general appearance of a place and the features that contribute to its views or landscapes. Scenery consists of biophysical elements (landforms, water, and vegetation) and cultural or human-made elements (structures, water features, and managed landscapes). In many instances, the resources referred to as “scenery” or “scenic resources” also may be considered cultural landscape features (e.g., viewsheds, landforms, water vegetation, human-made elements). Scenic quality is an important and valuable resource, especially on public lands. Many people value the quality of the scenery and have high expectations of scenic quality when visiting California parks.

### **3.4.1 VISUAL RESOURCES AND VIEWSHEDS**

The northern portion of Hatton Canyon is not widely visible because of the canyon topography. The primary viewer group consists of residences and neighbors using the area for informal recreation. Views in this area include a steep-sided canyon with some heavily wooded habitat with mature trees (Exhibit 3-11).

The southern portion of Hatton Canyon is much more visible. The main viewer groups of this area are motorists, pedestrians, and bicyclists using Highway 1, Rio Road, and Carmel Valley Road; residents; and patrons of the commercial area east of Highway 1. Views from the southern portion include Highway 1 and commercial development fringed with narrow patches of undeveloped land with native vegetation, including the riparian area along the Carmel River (Exhibit 3-11).

The landscape of the property also changes seasonally. Summer fog is frequent, and views of the fog layer blanketing the coastal areas are prominent from the higher elevations. The changing seasons and a variety of weather conditions (e.g., fog, wind, rain) contribute to a transformation of vegetation in form, texture, and color. Dense vegetation and steep topography in the northern portion of Hatton Canyon creates a quiet, peaceful experience for walkers from the local community who are informally using the property.

### **3.4.2 DESIGNATED SCENIC AREAS AND ROUTES**

There are no designated scenic vistas within Hatton Canyon; however, the *Greater Monterey Peninsula Area Plan* designates this area as a highly sensitive visual area. Areas designated as highly sensitive are defined as possessing those scenic resources that are most unique and have regional or countywide significance (TAMC 2009).

In addition, Highway 1, which is adjacent to the southern portion of the property, is designated as an All-American Road by the National Scenic Byways program and was designated as the first State Scenic Highway in California. The 1996 All-American Road designation was limited to the 72-miles of coast within Monterey County; in 2002, the designation was extended south to the City of San Luis Obispo. To be designated as an All-American Road, a roadway must meet the criteria for at least two of the following intrinsic qualities: scenic, historic, recreational, cultural, archaeological, and/or natural (FHWA 1995). The portion of Highway 1 with the All-American Road designation is recognized as having the following four intrinsic qualities: scenic, natural, recreational and historic. All-American Roads are so distinctive they are themselves considered a destination (Caltrans 2004). Advertisements along designated scenic byways are restricted (FHWA 2005). The goal of the State Scenic Highway program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. Official designation requires a local jurisdiction to enact a scenic corridor protection program that protects and enhances scenic resources. In addition, Carmel Area Land Use Plan contains policies that the existing forested corridor along Highway 1 shall be maintained as a scenic resource and any new development along the highway shall be sufficiently set back to minimize visual impact (Caltrans 2004).





# CARMEL AREA STATE PARKS GENERAL PLAN

## Scenic Features at the Hatton Canyon Property

- Planning Area Boundary
- View
- Trail
- Service Road
- Highway
- City Limits



Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.  
 Source: DPR 2012  
 Aerial Imagery: NAIP 2012  
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Exhibit 3-11 Scenic Features at Hatton Canyon



## 4 RECREATION RESOURCES

### 4.1 REGIONAL RECREATION

#### 4.1.1 FEDERAL PARKS

BLM lands in the Monterey vicinity provide a variety of recreation opportunities including mountain bike events, hiking, birding, wildlife viewing, and equestrian events. The recently designated Fort Ord National Monument is approximately 14,650 acres, with 7,200 acres currently administered by BLM for recreation, and the another 7,450 that will be administered by BLM once environmental remediation is completed by the U.S. Army. This property has 86 miles of trail for hiking, mountain biking, equestrian use, and wildlife/wildflower photography (BLM 2012). The Juan Bautista de Anza National Historic Trail, which is managed by the National Park Service, is also in Monterey County and traverses the Fort Ord National Monument. This trail follows the historic route of the 1775-1776 Anza expedition throughout Arizona and California. Portions of the 1,200-mile trail are accessible by automobile, and 300 miles of the trail are accessible for hiking, biking, and equestrian use (NPS 2013).

The Los Padres National Forest, which is owned and managed by the U.S. Forest Service (USFS), has 1,257 miles of maintained trails that provide both day-use and extended backpacking opportunities. The Los Padres National Forest also contains 10 congressionally-designated wildernesses comprising approximately 875,000 acres or about 48% of the forest. The Ventana Wilderness portion of the Los Padres National Forest is the closest of those wildernesses and is more than 240,000 acres. The Ventana Wilderness is located approximately 30 miles southeast of Hatton Canyon. Because it is a wilderness area, recreation opportunities are limited to activities that will not alter the natural qualities of the area including camping, backpacking, and hiking (USFS 2012).

#### 4.1.2 CALIFORNIA STATE PARKS

California State Parks properties in the immediate vicinity of Hatton Canyon include Point Lobos SNR and Carmel River SB to the southwest, and the unclassified Point Lobos Ranch and Garrapata State Park to the south. State Parks to the north of Hatton Canyon include Asilomar State Beach and Conference Grounds, Monterey State Historic Park, Monterey State Beach, Fort Ord Dunes State Park, Marina State Beach, and Salinas River State Beach. These areas provide important open space and recreational opportunities and areas for resource protection (Caltrans 2004). There are also a number of state parks in the Big Sur area, approximately 30 miles south of the Carmel Area, including Point Sur State Historic Park, Andrew Molera State Park, Pfeiffer Big Sur State Park, Limekiln State Park, and Julia Pfeiffer Burns State Park.

#### 4.1.3 REGIONAL PARKS

The MPRPD operates a number of regional parks in the vicinity of Hatton Canyon including Garland Ranch Regional Park, Thomas Open Space, Blomquist Open Space Preserve, Cachagua Community Park, and Carmel Valley Community Park. The MPRPD also owns Palo Corona Regional Park, part of Palo Corona Ranch, which is 10,000 acres of open space (MPRPD 2012a). A 37-acre property, known as the Hatton Canyon Pine Forest Preserve, which is also owned by MRRPD is located adjacent to Hatton Canyon (Exhibit 2-1). This property is not open to the public; however, there is some informal use of the property. Although no development is currently

proposed for this property, there is the potential to provide trail connections in the future because it is directly adjacent to Hatton Canyon.

The Monterey County Parks Department owns several parks in the area including the 525 acre Jacks Peak County Park, Toro Regional Park, and Martin Canyon, which provides a vital corridor to Jacks Peak County Park. The Monterey County Parks Department also owns the Laguna Seca Raceway, which provides camping. Mission Trails Regional Park, owned by the City of Carmel, is also a well-used corridor connecting the Carmel Mission to surrounding neighborhoods (Monterey County Parks 2012).

Regional recreation in the area also includes trail connections such as BSLT's South Bank Trail. The South Bank Trail is a 1.5-mile ADA accessible trail south of Carmel River connecting the area near Quail Lodge in Carmel Valley to Palo Corona Regional Park. This trail is an important milestone in the BSLT's "Experience Carmel River" program, a community-based program to extend access to and enjoyment of the Carmel River. Additional trail connections are proposed as part of this program including trail connections throughout the Whisler-Wilson Ranch (BSLT 2011).

## **4.2 UNIT RECREATION**

### **4.2.1 RECREATIONAL ACTIVITIES**

The northern portion of Hatton Canyon is used for informal recreation by nearby residents including walking, hiking, and wildlife viewing. The canyon is not directly adjacent to any existing recreational facilities (e.g., local and regional parks). The southern portion of the property is used for walking, running, bicycling, and picnicking. This portion of the property is also used for special events including annual pumpkin and Christmas tree sales, community garden events, as a staging area for community events, and the end point for the annual Big Sur International Marathon. Community garden events include native plants sales and the distribution of gardening and composting tips.

### **4.2.2 RECREATION FACILITIES**

There are no official recreational facilities within the northern portion of the property; however, an unpaved service road for the Carmel Area Wastewater District (CAWD) sewerline is used informally as a trail. Recreational facilities within the southern portion of the property include a paved multiple-use trail, bicycle rack, two benches, and a developed picnic area with two picnic tables.

### **4.2.3 ACCESSIBILITY**

The Americans with Disabilities Act, commonly known as ADA, is the federal law that prohibits discrimination on the basis of disability, and applies to all actions by the states, including the preparation of state park general plans. In compliance with the ADA, California State Parks published the *Accessibility Guidelines* (DPR 2009a), which states that accessibility is influenced by the location and type of park and that basic services and experiences need to be accessible to all people with disabilities, while maintaining the intrinsic qualities of the place.

The *Accessibility Guidelines* detail the procedure to make California state parks universally accessible while maintaining the quality of park resources. Also included in the guidelines are recommendations and regulations for complying with the standards for accessibility. California State Parks has also published the *All Visitors Welcome: Accessibility in State Park Interpretive Programs and Facilities* (DPR 2011a), which provides guidance on developing accessible interpretive programs and facilities.

California State Park's *Transition and Trail Plans for Accessibility in State Parks* (DPR 2003a) outlines California State Park's commitment to achieving programmatic access throughout the state park system and in each of the parks.

The paved multiple-use trail within the southern portion of Hatton Canyon is the only ADA accessible facility within the property.

## **4.3 PATTERNS AND LEVELS OF RECREATIONAL USE**

### **4.3.1 REGIONAL PATTERNS AND USE**

#### **STATEWIDE TRENDS**

As recorded within the *Complete Findings of the Survey on Public Opinions and Attitudes on Outdoor Recreation in California* (DPR 2009b), respondents to a 2008 recreation survey were asked about the activities in which they participated. The top 10 activities mentioned by the highest percentage of participants were the following:

- ▶ Walking for fitness or pleasure (74.2%)
- ▶ Picnicking in picnic areas (67.0%)
- ▶ Driving for pleasure, sightseeing, driving through natural scenery (59.8%)
- ▶ Beach activities (59.2%)
- ▶ Visiting outdoor nature museums, zoos, gardens or arboretums (58.4%)
- ▶ Attending outdoor cultural events (56.3%)
- ▶ Visiting historic or cultural sites (54.8%)
- ▶ Wildlife viewing, bird watching, viewing natural scenery (45.9%)
- ▶ Jogging and running for exercise (39.8%)
- ▶ Camping in developed sites (39.0%)

Four of the 10 most popular activities (i.e., walking, picnicking, wildlife viewing, and jogging) are available within Hatton Canyon. In addition, the top four recreation activities that survey respondents would like to participate in more often include walking for fitness or pleasure, camping in developed sites, bicycling on paved surfaces, and day hiking on trails. The most common facilities and amenities used by respondents included the following:

- ▶ Community/facility buildings (64%)
- ▶ Open spaces to play (59%)
- ▶ Picnic tables/pavilions (58%)
- ▶ Unpaved multipurpose trails (53%)
- ▶ Paved trails (50%)

## REGIONAL PATTERNS AND USE

Monterey County is a tourist destination that attracts visitors year round; however, peak visitation in the Monterey region is between Memorial Day weekend and Labor Day weekend. Almost 14% of the County's land area is devoted to parks and recreation facilities operated by various governmental agencies. The County parks system makes up about 10% of the County's total park acreage (Monterey County 2010). Visitation to other state parks in the region is shown in Table 4-1.

	<b>2008 / 2009</b>	<b>2009/2010</b>	<b>2010/2011</b>
Monterey SB	558,490	443,641	458,313
Monterey SHP	318,547	171,161	136,795
Asilomar SB	787,040	622,790	657,555
Garrapata SP	147,662	132,109	119,156
Andrew Molera SP	45,647	58,955	62,741
Julia Pfeiffer Burns SP	53,376	75,705	78,192
Point Lobos SNR	324,449	331,431	370,409
<b>Total</b>	<b>2,235,211</b>	<b>1,835,792</b>	<b>1,883,161</b>

Source: DPR 2010a, 2010b, 2011b

Overall visitation to state parks in the region declined between the 2008/2009 and 2009/2010 fiscal years, but increased slightly in fiscal year 2010/2011 (DPR 2010a, 2010b, 2011b). The *Complete Findings of the Survey on Public Opinions and Attitudes on Outdoor Recreation in California* reports recreation trends for regions within California including the Central Coast region that encompasses Monterey. The type of park that Central Coast region respondents visited most frequently was highly developed parks and recreation areas. The majority of Central Coast region respondents reported driving for 5 minutes or less or walking to reach their most visited recreation destination (DPR 2009b).

The top five activities that Central Coast participants would like to participate in more often include the following (DPR 2009c):

- ▶ Camping in developed sites;
- ▶ Day hiking on trails;
- ▶ Walking for fitness or pleasure;
- ▶ Beach activities (i.e., swimming, sunbathing, surf play, wading, playing on beach); and
- ▶ Visiting historic or cultural sites.

### 4.3.2 PATTERNS AND USE AT HATTON CANYON

Recreational use data is not currently collected for Hatton Canyon; however, attendance counts for special events held within the southern portion of the property totaled more than 15,600 attendees in 2011.

## 5 INTERPRETATION AND EDUCATION

Interpretation and education heightens and increases public understanding, appreciation, and enjoyment of natural, cultural, and recreational values. Providing meaningful, powerful, and inspiring experiences and opportunities is one of the core initiatives of California State Parks. The interpretive opportunities and facilities within Hatton Canyon are described in more detail below.

### 5.1 FACILITIES

There are no existing interpretation or education facilities within Hatton Canyon.

### 5.2 THEMES

No interpretive themes have been developed for the Hatton Canyon property.

### 5.3 PROGRAMS AND SPECIAL EVENTS

A number of special events are hosted within the southern portion of Hatton Canyon with special event permits, including an annual pumpkin patch and Christmas tree lot, and the end point for the annual Big Sur International Marathon.

### 5.4 REGIONAL INTERPRETATION

Major interpretation topics in the regional area are recreation; marine life and its protection, including marine mammals and tidepools; wetlands; Native California Indians; special-status species; and geology.

Following is a list of interpretive and educational programs in the regional area, with their primary topics, listed:

- ▶ California State Parks Monterey District – natural history field trips; cultural history field trips; environmental studies programs; Junior Rangers Programs; Litter-Getter Programs (engages children in trash collecting activities while explaining the environmental value of acting responsibly in parks); Monterey District Habitats Van; and the Junior Lifeguard Programs (California State Parks 2008);
- ▶ MPRPD Interpretive walks/hikes – includes hikes through various MPRPD parks focusing on natural and recreation resources;
- ▶ MPRPD Let's Go Outdoors Program – environmental education and outdoor related programs, classes, and activities on topics such as photography, star gazing, hiking, kayaking, wildlife watching, art and writing, gardening, composting, and horseback riding;
- ▶ MPRPD Nature Camp – camps include hands-on activities and outdoor adventures such as camping and hiking (MPRPD 2012b);
- ▶ BSLT education programs – include science and environmental camps, art-in-nature classes, Plant-a-Thons, wilderness challenge experiences, and interactive history, agriculture and nature exhibits (BSLT 2012a);

- ▶ Pacific Grove Museum of Natural History – includes field trips and classroom visits, summer camps, Science Saturdays, Long-term Monitoring Program and Experiential Training for Students, and Monarch butterfly monitoring (Pacific Grove Museum of Natural History 2013);
- ▶ Carmel Mission – includes museums, exhibitions, and tours (Carmel Mission Basilica 2013);
- ▶ Monterey Bay Aquarium – includes field trips, classroom curriculum, Teen Conservation Leaders volunteer program (Monterey Bay Aquarium Foundation 2013);
- ▶ Monterey County Toro Park field trips for grades 1-4 (Monterey County Parks 2007); and
- ▶ California State University (CSU), Monterey Bay Camp Sea Lab – programs include day and residential summer camps for ages 8-17, outdoor school for ages 3-8, workshops/curriculum for teachers to incorporate marine science in the classroom, and family workshops for children of all ages (CSU, Monterey Bay 2010).

Other interpretive and educational facilities in the region include the following:

- ▶ Monterey State Historic Park – classrooms, a collection of significant historic houses and buildings including the Pacific House Museum;
- ▶ Julia Pfeiffer Burns SP Information Center;
- ▶ MPRPD Garland Ranch Visitor Center;
- ▶ Monterey County Visitor Center;
- ▶ Monterey County Agriculture and Rural Life Museum; and
- ▶ Monterey County Toro Park Environmental Center.

Interpretive and educational opportunities offered in the region are primarily related to natural and cultural resources in the area and provide opportunities for educational hikes and programs for school groups and families.

## **6 ACCESS, CIRCULATION AND TRANSPORTATION**

### **6.1 ACCESS**

Carmel Valley Road and Rio Road are the only official public vehicle access points to Hatton Canyon. Vehicle parking is available near these access points, and from there the property can be accessed by foot and bicycle. Pedestrian access to the southern portion of Hatton Canyon is unrestricted and the property can generally be accessed from Highway 1, the Barnyard Shopping Village, Carmel Rancho Shopping Center, and Crossroads Shopping Center. Carmel Valley Road is also an official access point, but only provides vehicle access to authorized vehicles (California State Parks, CAWD, Cal Fire, PG&E). There are also a number of unofficial pedestrian access points to the northern canyon from surrounding neighborhoods. These include Edgefield Place, Via Mar Monte, Carmel Hills Drive, Canada Court, and Carmel Knolls Drive.

### **6.2 ROADS/CIRCULATION**

The property runs parallel to Highway 1 along the east side. Highway 1 varies in width from as narrow as 20 feet (10-foot travel lanes with no paved shoulders) to 40-feet (12-foot lanes and 8-foot shoulders). The transportation concept for Highway 1 would consist of two 12-foot lanes with 4-foot paved shoulders. The transportation concept for a roadway is defined as long-range improvements needed to bring an existing facility up to the standards needed to adequately serve 20-year traffic forecasts (Exhibit 6-1).

There are no roadways within Hatton Canyon, and the only vehicle circulation within the property is provided via an unpaved service road. Roadways providing access to the property are listed above under Section 6.1 “Access.”

#### **6.2.1 PLANNED ROADWAY IMPROVEMENTS**

The *Monterey Bay Area Mobility 2035* is a long range transportation plan for Monterey, San Benito, and Santa Cruz counties. The plan contains projects which can be implemented anytime over the span between Year 2010 and 2035. The only programmed improvement near the property is a truck climbing lane on Highway 1. The project would consist of a northbound truck-climbing lane from Rio Road to Carmel Valley Road (AMBAG 2010a). According to Caltrans’ 2013 *Status of Projects Central Region District 5* report, this project is currently in the design phase (Caltrans 2013).

### **6.3 PARKING**

Parking is available on surrounding residential streets within the adjacent neighborhoods. Vehicle parking is available at the Barnyard Shopping Village, Carmel Rancho Shopping Center, and Crossroads Shopping Center on Rio Road. The Marathon Flats area is also sometimes used as off-site event parking. Visitors can park in any of these parking areas and access Hatton Canyon by foot or bicycle.

### **6.4 TRAFFIC VOLUMES**

In the vicinity of Hatton Canyon, the annual average daily traffic (AADT) volumes on Highway 1 north of Carmel Valley Road was 33,300 in 2011 (Caltrans 2011a). The AADT is the total volume for the year divided by

365 days. The peak hour volume along Highway 1 north of Carmel Valley Road in 2011 was 3,100. As compared to the past 3 years, the AADT at this location has slightly decreased.

Highway 1 from Carmel to Carmel Highlands is the only roadway segment in the Carmel area identified as being congested or that are projected to be congested based on the 2010 Metropolitan Transportation Plan. The portion of Highway 1 adjacent to Point Lobos Ranch is not identified as a congestion area (AMBAG 2010b). In addition, Caltrans' *Transportation Concept Report for State Route 1 in District 5* characterizes Highway 1 in the Monterey area as having intense local and regional traffic in addition to through traffic bound for Big Sur Coast and recreational attractions, and long wait times for turns at intersections with Rio and Carmel Valley Roads (Caltrans 2006).

## **6.5 ALTERNATIVE MODES OF TRANSPORTATION**

Hatton Canyon can also be accessed via non-motorized and public transportation. Highway 1 is classified as a Caltrans Class III bicycle route, which would allow visitors to ride their bicycles to Hatton Canyon. A Class III bicycle route is defined as bicyclists sharing the road with vehicles and without a designated bicycle lane. The multiple-use trail within the southern portion of the property is classified as a Class I bicycle route. A Class I bicycle route provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians. There is also a bicycle rack at the picnic area near the Carmel River.

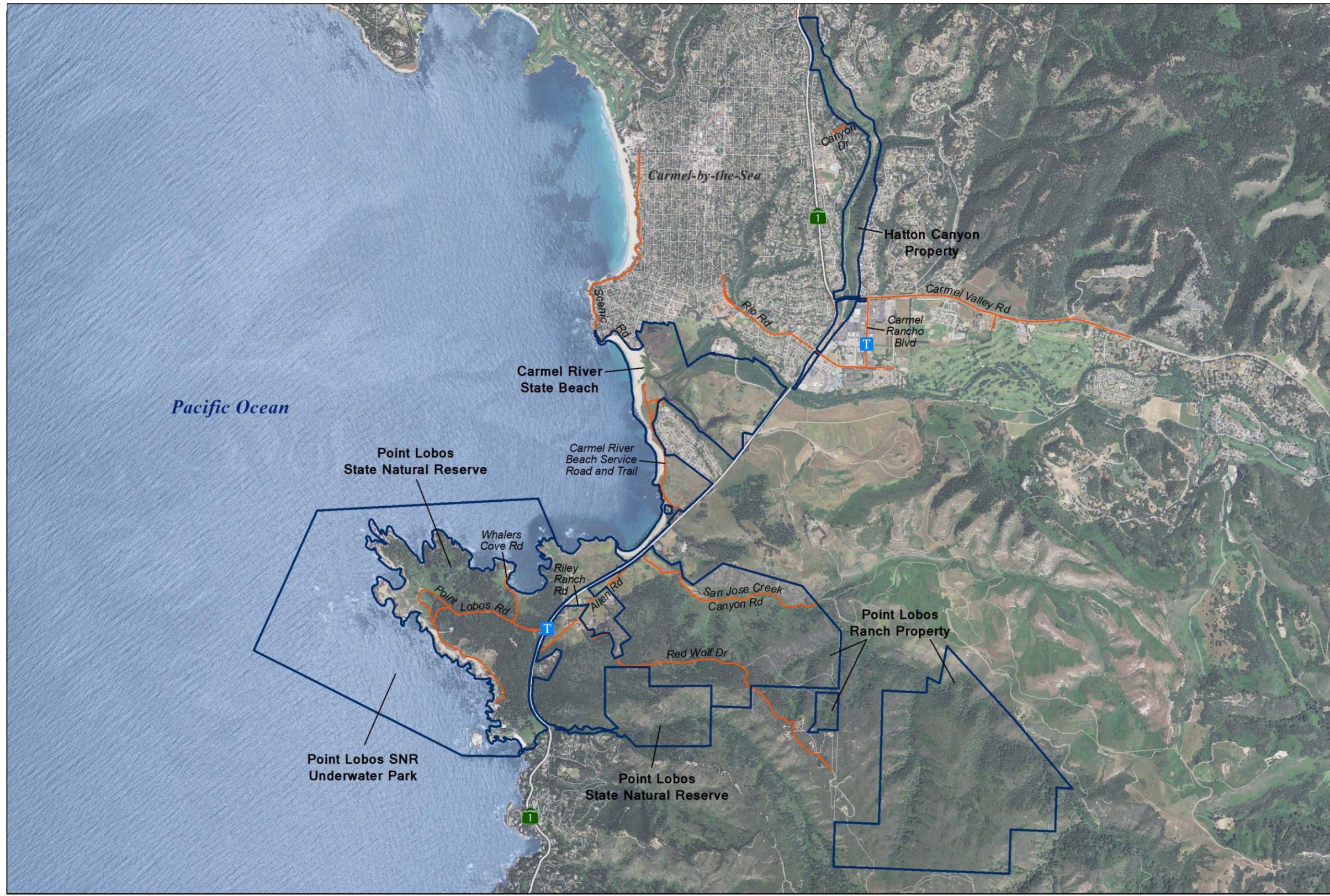
A separated walkway / Class I multiple-use trail joining the existing Hatton Canyon multiple-use trail and Carmel High School, and a Class I multiple-use trail from Carmel Valley Road north to Highway 1 are proposed in the 2011 *TAMC Bicycle and Pedestrian Master Plan a* (TAMC 2011).

In addition, the Monterey-Salinas Transit (MST) operates Line 22 seasonally and runs between Big Sur and Monterey. Line 22 operates between 10:15 AM and 7:05 PM from Memorial Day weekend to Labor Day (MST 2012). The nearest bus stop is located at Carmel Rancho Boulevard near the southern portion of Hatton Canyon. Line 24 provides the closest bus stop to the northern portion of Hatton Canyon, located north of the Highway 1 and Ocean Avenue intersection.

# CARMEL AREA STATE PARKS GENERAL PLAN

## Regional Circulation

-  Carmel Area State Parks
-  Highway
-  Access Roads
-  Other roads
-  Transit Stops



Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.  
 Source: DPR 2012, U.S. Census Bureau 2007  
 Aerial Imagery: NAIP 2012  
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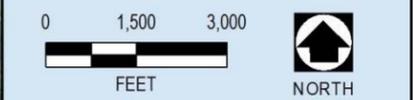


Exhibit 6-1

Regional Circulation



## **7 PARK OPERATIONS AND MAINTENANCE**

### **7.1 EXISTING FACILITIES**

Facilities within this property include an unpaved service road, a paved multiple-use trail, and a developed picnic area with picnic tables, benches, and a bicycle rack (Exhibit 7-1).

### **7.2 STAFF AND SERVICES**

California State Park's facilities maintenance staff maintains the existing structures and infrastructure (water, sewer, electric, gas, and telecommunication services) for all four of the California State Parks properties. California State Parks maintains all utilities in coordination with the respective utility providers. Facilities maintenance staff also maintains roads, trails, and other facilities needed to maintain a safe and comfortable park experience. Within Hatton Canyon, CAWD maintains the existing sewerline. Sima-Barnyard LLC has a 10 year lease for a small area off of retail parking that borders Hatton Canyon, which was initiated in 2011. The California State Parks properties also have peace officers who are primarily responsible for public safety and law enforcement on all of the properties.

### **7.3 CONCESSIONS**

There are currently no official concessions within Hatton Canyon. However, there are two special-event concession areas. One of the concession areas is the Barnyard special event area adjacent to the Barnyard Shopping Village, and the other area is the Marathon Flats area adjacent to Rio Road. This area is used for off-site event parking, seasonal pumpkin and Christmas trees sales, and the terminus for the internationally renowned Big Sur Marathon.

### **7.4 CONTRACTS AND AGREEMENTS**

There is one contracted lessee for the property. Sima-Barnyard LLC has a 10-year lease for the portions of the property that started in June 2011. The lease is for maintaining a beautified open area that integrates the multiple-use trail with the Barnyard Shopping Village. The lease permits the lessee to use 2.4 acres of the property adjacent to the shopping center for community events, working/organic gardens, orchards, sculpture placements, produce stands, seasonal farmer's market, approximately 30 parking spaces, and a compost bin and recycle storage area. The lessee is also responsible for maintenance of the multiple-use trail, landscaping, weed and litter control, graffiti removal, and other miscellaneous repairs within this portion of the property.

### **7.5 UTILITIES AND SERVICES**

#### **7.5.1 WATER AND WASTEWATER SERVICES**

Hatton Canyon is within the Monterey Peninsula Water Management District (MPWMD). Approximately 80% of the water collected, stored, and distributed within the MPWMD boundaries is done so by the California American Water Company (Cal Am). Cal Am is the water service purveyor to the property, although this area does not have any water use or connections. Water supplied by Cal Am is obtained from wells in the Carmel Valley and Seaside aquifers and from Los Padres and San Clemente Reservoirs, which are located on the Carmel River. Cal Am

waterlines are located along Highway 1 and Rio Road adjacent to southern portion of Hatton Canyon (TAMC 2009).

The CAWD provides wastewater collection, treatment, and disposal services to Carmel-by-the-Sea, Carmel Valley, and Carmel Highlands including the areas adjacent to Hatton Canyon. Existing sewer lines are located within the property, and CAWD conducts weekly routine inspections of these sewer lines. In addition, CAWD's high pressure cleaning truck accesses the property twice a year to clean the sewer lines. There are also CAWD sewer lines along Highway 1 and Rio Road adjacent to the southern portion of Hatton Canyon (TAMC 2009).

## **7.5.2 ELECTRICITY**

Electrical service to the surrounding neighborhoods is provided by Pacific Gas and Electric (PG&E). In the southern Hatton Canyon area, there are electrical lines along the east side of Highway 1 and crossing Highway 1 at Rio Road that serve the area. Electrical service was also installed at the intersection of Rio Road and Highway 1 for the concessionaire.

## **7.5.3 PHONE AND TELECOMMUNICATIONS**

There are currently no telephone connections within the property; however, AT&T has underground telephone lines adjacent to Highway 1 that serve the area. In addition, Comcast has overhead cable lines along Highway 1 (Caltrans 2011b).

## **7.5.4 SOLID WASTE**

Solid waste in the Monterey area is transported to the Monterey Peninsula Landfill and Recycling Facility in the City of Marina, which is operated by the Monterey Regional Waste Management District (MRWMD). This facility serves the solid waste and recycling needs of an estimated 170,000 residents. The facility accepts basic solid waste, liquid waste and sewage sludge (biosolids), wood waste, yard waste, concrete, tires, appliances, and furniture. The facility also has off-site local recycling centers that collect household recyclables (glass, aluminum, paper, and plastics).

The MRWMD Landfill and Recycling Facility receives approximately 300,000 tons of solid waste per year. The Monterey Peninsula Landfill and Recycling Facility has a remaining capacity of approximately 40 million tons or 74 million cubic yards. Assuming MRWMD continues to achieve the State-mandated 50% recycling goal, the landfill will continue to serve the present service area through the year 2107 (MRWMD 2007).

Solid waste is collected throughout each park unit by California State Parks staff. Thirty-three gallon solid waste containers are located throughout Hatton Canyon. All of these smaller solid waste containers are then emptied into two dumpsters that are serviced by a contracted waste hauler.

## **7.5.5 SECURITY AND EMERGENCY SERVICES**

California State Parks rangers and lifeguards are trained peace officers that help to operate and manage the California State Park units. They provide public safety law enforcement, aquatic rescue services, and public education through interpretation (DPR 2010c).



Exhibit 7-1

Facilities within Hatton Canyon



California State Parks Peace Officers have the primary public safety and law enforcement responsibility for all of the California State Parks properties. The Monterey County Sheriff's Office has concurrent law enforcement jurisdiction for park property that is located in the unincorporated area of Monterey County. The California Highway Patrol has concurrent law enforcement jurisdiction for all state facilities. California State Parks Peace Officers occasionally are called to assist or back up a local police officer, California Highway Patrol Officer, or other law enforcement officers. California State Parks Peace Officers also provide emergency medical response for all of the California State Parks properties. California State Park Peace Officers routinely patrol Carmel River SB.

The Cal Fire in coordination with California State Parks personnel conducts periodic brush clearing on the property to manage fire danger/fuel buildup. The nearest fire station is the Cypress Fire Protection District located approximately 0.25 mile to the east on Rio Road. This fire protection district has a 4-person paramedic engine, and is operated under a cooperative agreement with Cal Fire (Cypress Fire Protection District 2012).

## 8 SUPPORT

### 8.1 PARTNERSHIPS

#### 8.1.1 BIG SUR LAND TRUST

The BSLT's mission has been to conserve the significant lands and waters of California's Central Coast for all generations. The BSLT recently adopted a new mission, which is to inspire love of the land and conservation of our treasured landscapes. The BSLT partners with government agencies in a variety of ways including sharing technical expertise, providing funding, and partnering on innovative projects (BSLT 2012b). The BSLT funded the picnic area and may continue to be a partner for funding and implementing projects within the property. California State Parks also meets with BSLT monthly to discuss management issues and collaborate on land use and natural resource management issues.

In 2013 the BSLT, California State Parks, MPRPD, and Point Lobos Foundation initiated a partnership effort known as the "Big Sur Gateway" to support the creation and implementation of a collaborative, long-term regional vision for the collective landscape of state and local parklands and open space located adjacent to or nearby one another, from Carmel south to Garrapata State Park. The Gateway partners are working together to develop a model partnership that will result in improved coordination and enhanced land management practices, trail planning and networks, public access and safety, and visitor educational and recreational experiences across the landscape that will better serve the community and the land. This planning effort will create a significant recreation and open space experience and enhance management opportunities by linking the Palo Corona lands with BSLT and State Parks adjoining park and open space lands.

#### 8.1.2 TRANSPORTATION AGENCY OF MONTEREY COUNTY

TAMC's mission is to develop and maintain a multi-modal transportation system that enhances mobility, safety, access, environment quality, and economic activities in Monterey County (TAMC 2004). TAMC funded and constructed the existing multiple-use trail within the property, and will continue to be an important partner for funding and implementing future projects and improvements within the property.

#### 8.1.3 MONTEREY PENINSULA REGIONAL PARK DISTRICT

The MPRPD's mission is to acquire and maintain open space in the District for preservation and use, working with partners and the community, for public benefit, enjoyment and environmental protection. One of the MPRPD's values is to foster new and creative collaborative partnerships and projects to better meet their mission and serve the community (MPRPD 2012a). California State Parks continues to work with MPRPD to coordinate recreational uses on the nearby park properties so there are similar uses on similar pieces of property (using a landscape relevant approach) and maintaining continuity between properties, including the adjacent Hatton Canyon Pine Forest Preserve, which is owned by MPRPD. In addition, there may be the potential for California State Parks to transfer ownership of Hatton Canyon to MPRPD at some point in the future. California State Parks currently meets with MPRPD monthly to discuss management issues and collaborate on land use and natural resource management issues.

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# **APPENDIX A**

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Regional CNDDDB Occurrences



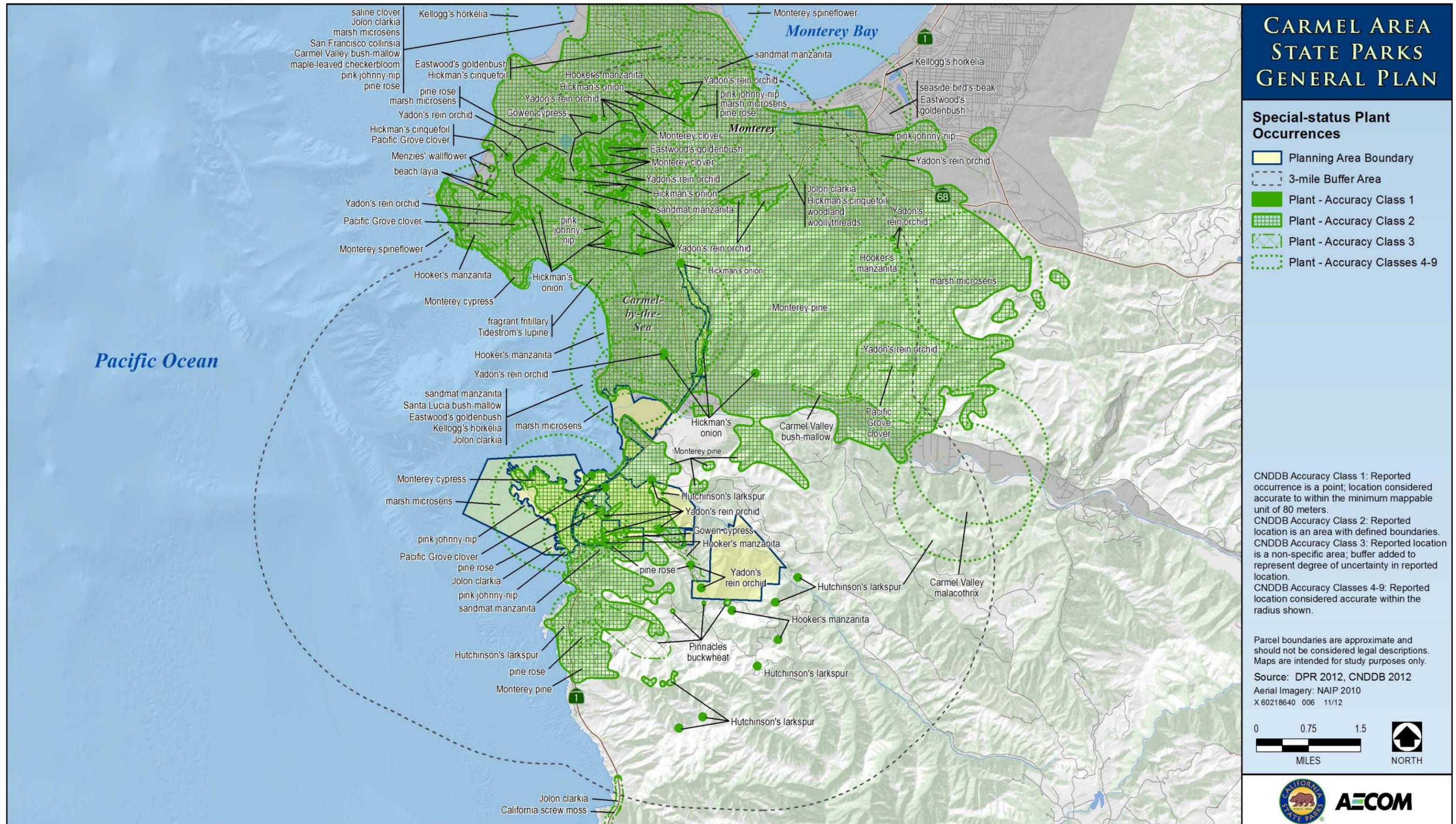


Exhibit A-1

Special-Status Plant Occurrences



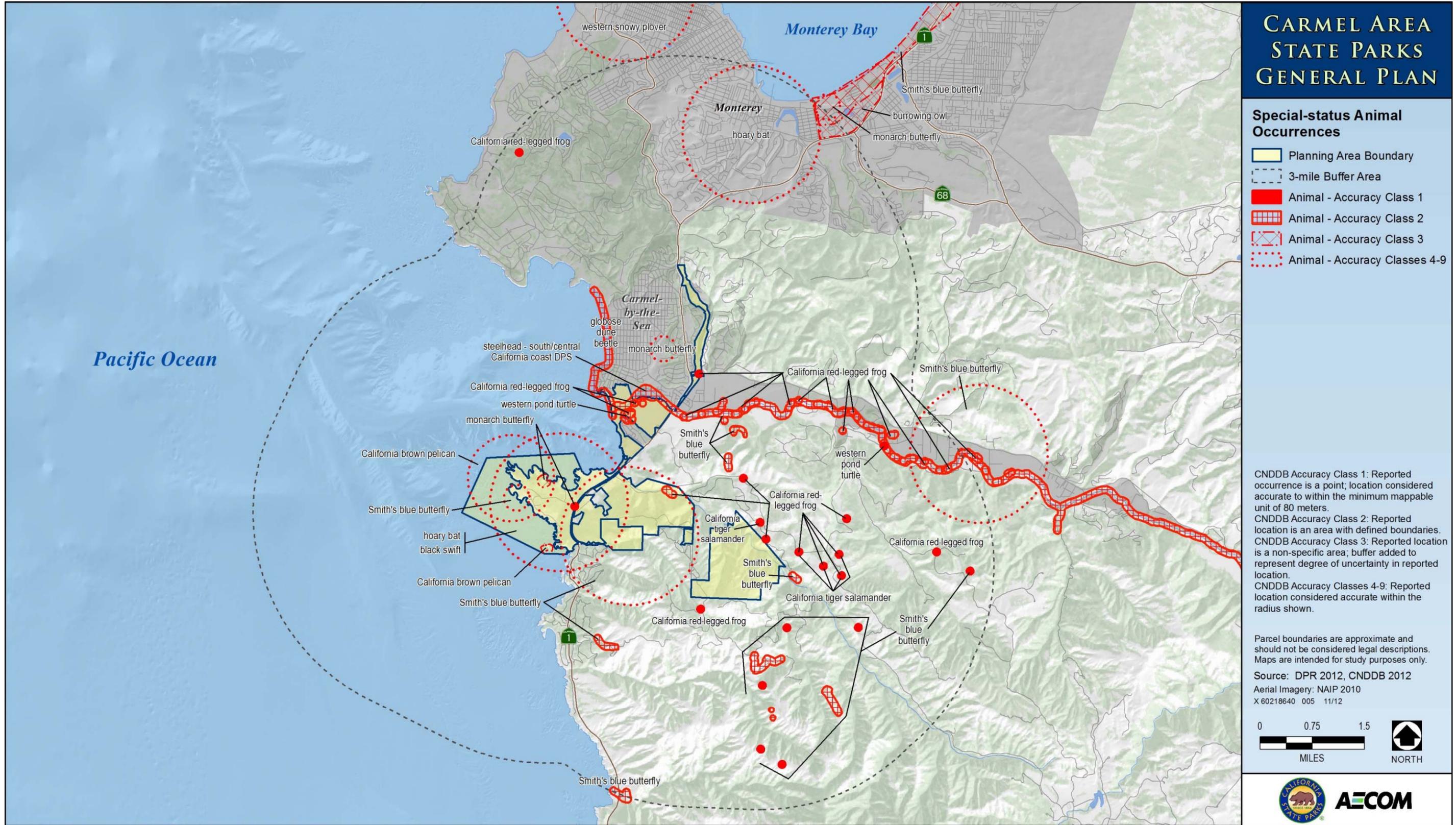


Exhibit A-2

Special-Status Animal Occurrences



## **APPENDIX B**

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Cultural Resources - Confidential



