A BIOLOGICAL RESOURCES ASSESSMENT OF THE APPROXIMATELY 203.64-ACRE CASTLEROCK SITE DOCUMENT LOCATED IN THE CITY OF SAN DIEGO SAN DIEGO COUNTY, CALIFORNIA

CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT
TRACKING NUMBER 10046
JOB ORDER NUMBER 42-1653

Prepared For:

Hewitt Wolensky LLP
4041 MacArthur Boulevard - Suite 300
Newport Beach, CA 92660
Contact: Hugh Hewitt, Esq.

Prepared By:

Natural Resource Consultants
1590 South Coast Highway, Suite 17
Laguna Beach, CA 92651
Contact: David Levine

Date: October 11, 2012

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EXECUTIVE SUMMARY

The approximately 203.64-acre Castlerock site (the site) is located along the eastern boundary of the East Elliot area within the City of San Diego, County of San Diego, California. The site is located within the jurisdiction of the City of San Diego adjacent to the City of Santee's western boundary. This report evaluates two project development alternatives for the site; 1) annexation of the project into the City of Santee (referred to as the Proposed Project or the Project), and 2) no annexation and project development within the City of San Diego (referred to as the Alternative Scenario). The proposed Project would develop approximately 108.72 acres of the Castlerock site for residential uses and would provide 283 detached single-family residences and 147 single-family detached small lot units. The Alternative Scenario would develop 108.91 acres of the site and provide 282 detached single-family residences and 140 single-family detached small lot units. The Alternative Scenario would include a water tank and access road on the site and two off-site improvement areas along Mast Boulevard and West Hills Parkway. Temporary impacts are expected for the installation of an off-site sewer line along the West Hills Parkway Bridge in the Alternative Scenario. Development of either alternative would include offsite improvements for the northern area (Street 'E') grading and grading for a portion of the San Diego Gas & Electric (SDG&E) parcel, as well as up to 5 acres of potential landslide remediation on site.

This report describes the existing biological conditions on the site and within proposed off-site improvement areas, evaluates the anticipated impacts of the proposed Project and Alternative Scenario on site-specific and regional biological resources, and provides mitigation measures designed to offset adverse Project effects. Project-specific mitigation measures are consistent with the requirements of the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and City of San Diego. Biological information described in this report incorporates the results of NRC general biological and focused species surveys conducted between December of 2000 and July of 2012. All studies described in this report were conducted and reported in accordance with the City of San Diego *Guidelines for Conducting Biological Surveys* (July 2002). A complete list of surveys conducted between 2000 and 2012, including 181 survey dates, is included in Appendix A of this report. Project mitigations are proposed to occur within the established Multi-Habitat Planning Area (MHPA) according to the Multiple Species Conservation Program (MSCP) Subarea Plan.

A total of ten vegetation communities have been identified on the Castlerock site: vernal pool, emergent wetland, coastal and valley freshwater marsh, native grassland, disturbed coastal sage scrub, coastal sage scrub, baccharis-dominated coastal sage scrub, non-native grassland, eucalyptus woodland, and disturbed/developed. These communities have recovered from the Cedar Hills Fire that incinerated most native vegetation on the site in October of 2003. Development under the proposed Project would impact 0.07 acre of emergent wetland, 13.46 acres of native grassland, 32.00 acres of coastal sage scrub, 47.59 acres of non-native grassland, 1.46 acres of eucalyptus woodland, and 7.60 acres of disturbed/developed on site.

The designated Critical Habitat for one federal-listed plant species, San Diego ambrosia (*Ambrosia pumila*), occurs within the Alternative Scenario project limits. Installation of a sewer line along the West Hills Parkway Bridge may result in temporary impacts to 0.03 acres of San Diego ambrosia Critical Habitat. Temporary habitat impacts would potentially consist of vegetation crushing and soil compaction from construction vehicle and equipment use. No San Diego ambrosia was observed in the immediate vicinity of this off-site improvement and no direct impacts to the species are anticipated. Restoration of temporary impacts to Critical Habitat is discussed in the *Draft San Diego Ambrosia Critical Habitat Restoration Plan for the Castlerock Project, City of San Diego* attached to this report (RECON 2012a).

Two federally listed wildlife species have been recorded on the site; coastal California gnatcatcher (*Polioptila californica californica*) a federal threatened bird species, and San Diego fairy shrimp a federal endangered invertebrate (*Branchinecta sandiegonensis*). No other federal or state listed plant or wildlife species occur on site. Four occupied gnatcatcher territories were observed on the site during 2012 USFWS protocol surveys. The California gnatcatcher is a "Covered Species" under the MSCP and any

anticipated "take" would be mitigated according to the conservation measures within the MSCP. San Diego fairy shrimp were recorded by Glenn Lukos Associates (GLA) within four man-made road ruts located along the eastern edge of the site (GLA 2011a). All four recorded San Diego fairy shrimp locations would be removed by proposed grading for either development alternative. The road ruts are not vernal pools according to definitions by the City of San Diego and are not within the jurisdiction of the U.S. Army Corps of Engineers (Corps), but they contain an Endangered Species Act (ESA)-protected species and are within the Project area which proposes impacts to jurisdictional waters of the U.S., thus, impacts to the species would be permitted through take authorization under the ESA.

Suitable habitat for the Quino checkerspot butterfly (*Euphydryas editha quino*) occurs on site; however, no Quino checkerspot butterfly has ever been detected on site during NRC's yearly USFWS protocol surveys conducted between 2005 and 2012. Surveys for Hermes copper (*Lycaena hermes*) were conducted between 2010 and 2012 and although suitable habitat is present no individuals of this species were recorded on site.

The least Bell's vireo (*Vireo bellii pusillus*), a federal and State endangered species, was observed near the proposed off-site improvements located where the West Hills Parkway Bridge crosses the San Diego River in 2008 through 2012 during USFWS protocol surveys. A single migrant southwestern willow flycatcher (*Empidonax traillii extimus*), a federal and State endangered species, was observed on a single occasion near the West Hills Parkway Bridge off-site improvement area in 2012 along with other observations in 2008 and 2011 during USFWS protocol surveys. No direct impacts are anticipated to these two bird species. Construction of the sewer line may temporarily impact 0.43 acre of least Bell's vireo and southwestern willow flycatcher riparian habitat and designated Critical Habitat for least Bell's vireo. The 2011 proposed Critical Habitat for southwestern willow flycatcher, if approved, would cover this stretch of the San Diego River and, these sewer line improvements would have a temporary impact on 0.41 acre of Critical Habitat for the southwestern willow flycatcher. Project effects to least Bell's vireo and southwestern willow flycatcher would be evaluated within the Project's take authorization permit under the ESA should the off–site improvements be incorporated into the Project's final design.

Twenty-three other special-status species were observed on the site including nine special status plants and fourteen special status wildlife species. No State or federal threatened or endangered plants have been observed on the site or in off-site improvement areas. Three plant species, San Diego barrel cactus (*Ferocactus viridescens*), variegated dudleya (*Dudleya variegata*), and San Diego goldenstar (*Bloomeria clevelandii*), occur on site and are "Covered Species" under the MSCP. Six wildlife species including coast horned lizard (*Phrynosoma blainvillei*), Belding's orange-throated whiptail (*Aspidoscelis hyperythrus beldingi*), Cooper's hawk (*Accipiter cooperi*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), northern harrier (*Circus cyaneus*), and southern mule deer (*Odocoileus hemionus fuliginata*) occur on site and are "Covered Species" under the MSCP. The remaining six special status plant species and eight wildlife species observed on site are not "Covered Species" under the MSCP. The Project would have little effect on the population size, breeding status, and regional distribution of these species and would not result in significant impacts to these species. Impacts to "Covered Species" would be mitigated through dedication of land within the MHPA in compliance with the MSCP and City of San Diego *Biology Guidelines* (City of San Diego 2009).

Both development alternatives would affect areas that are under the jurisdiction of the Corps, Regional Water Quality Control Board (RWQCB), and CDFG. According to the results of a jurisdictional wetland delineation conducted by Glenn Lukos Associates (GLA 2012), the proposed Project would impact 0.47 acre of Corps/RWQCB jurisdiction including 0.07 acre of wetlands, 0.44 acres under the jurisdiction of the CDFG including 0.04 acre of riparian vegetation, and 0.07 acre of City of San Diego wetlands. The Alternative Scenario would impact a total of 0.79 acre of Corps/RWQCB jurisdiction, including 0.47 acre on site (0.07 acre of wetland), and 0.32 acre off-site (all wetland); a total of 0.89 acre of CDFG jurisdiction, including 0.44 acre on site (0.04 acre of riparian vegetation), and 0.45 acre off-site (all riparian); and a total of 0.52 acre of City wetlands, including 0.07 acre on site and 0.45 acre off-site.

Sixteen features were identified on site capable of holding water for at least a short period, although not all of the features exhibit surface inundation every season. These 16 features were evaluated to determine if they are vernal pools per the City criteria and to determine if they are occupied by fairy shrimp. For a depression to be considered a vernal pool under the City's regulations, the feature must support at least one vernal pool indicator plant species. Of the 16 features examined on-site, seven features (9, 10, 11, 12, 14, 15, and 16) included vernal pool indicator plants. Features 9, 10, 11, 12, and 14 (totaling 255 square feet or less than 0.01 acre) are associated with a mima-mound complex typical of natural vernal pools and include a hydrophytic vegetation community. These five features meet the criteria for City of San Diego vernal pools and are proposed to be included in the Vernal Pool Habitat Conservation Plan and revised Draft City-wide Vernal Pool Management Plan (City of San Diego 2008b). The other two (features 15 and 16) containing indicator plants are associated with man-made roadways. Feature 15 consists of a depression within a dirt road that crosses a drainage feature. During periods of rainfall, water from the drainage flows over the road, with the compacted low point in the road remaining ponded after drainage flows cease. This depression should be regarded as artificial ponding within a drainage course. Feature 16 consists of a series of depressions within an apparent access road that was constructed in uplands within an area that did not appear to naturally contain vernal pool topography. Therefore, neither of these features is considered a vernal pool. Two features (8 and 13) are associated with the mima-mound complex but do not contain any vernal pool indicator plants and are not considered vernal pools. The other seven features (1 through 7) are either completely man-made, or are potentially natural features that have been highly disturbed. It is noted that two of the man-made, unoccupied features (Features 4 and 5) were originally mapped in 2004 as being part of the Castlerock property, as part of mapping conducted for fairy shrimp surveys. These features were documented in 2004 and 2005 as not supporting listed fairy shrimp or vernal pool indicator plants. However, it was recently determined that these two features were not properly mapped in 2004 and are outside of the Castlerock property. Feature 7 is more accurately described as an emergent wetland or seasonal pond formed by an impoundment of a natural drainage course. Features 1 through 6 do not support a hydrophytic plant community or any vernal pool indicator plant species and are not vernal pools as defined by the City nor are they jurisdictional wetlands according to the Corps and CDFG. Wet season fairy shrimp surveys were conducted in 2003/2004, 2004/2005, and 2010/2011. As rainfall varied from year to year not all features ponded during the three wet season surveys and therefore not all features were sampled for fairy shrimp during each survey. Four of the sampled features (1, 2, 3, and 6) were found to contain San Diego fairy shrimp, but are not vernal pools because they lack any hydrophytic vegetation and vernal pool plant indicator species. However, as these features support a federally listed endangered species, they are protected and require take authorization pursuant to the Federal Endangered Species Act (GLA 2011).

A 1.92-acre area is being preserved within the Project to preserve the five existing vernal pools and provide suitable mitigation area for impacts to approximately 420 square feet within the four man-made features inhabited by San Diego fairy shrimp. To compensate for impacts to fairy shrimp, it is proposed that approximately 1,260 square feet (3:1 mitigation ratio) of restored basins (vernal pools) would be provided within the vernal pool preserve. This proposed area (vernal pool preserve) would be connected to other permanent open space located in the western portion of the Project. The Project design avoids grading or construction within the watershed of these features, provides appropriate buffers, drainage intercepts, and fencing to avoid direct and indirect impacts to vernal pool resources.

Anticipated impacts to vegetation communities and Covered Species would be mitigated through dedication of land within the MHPA in compliance with the MSCP and City of San Diego Biology Guidelines. In addition to dedication of land within the MHPA and adherence to adjacency guidelines in accordance with the MSCP, Project mitigation measures include focused surveys for special status plant and wildlife species prior to site disturbance. These surveys would ensure avoidance of direct impacts to special status plants and wildlife species during Project implementation. Conservation measures for potential impacts to least Bell's vireo and southwestern willow flycatcher in the Alternative Scenario would be determined through the Project's take authorization should the off–site improvements be incorporated into the Project's final design.

1.0 INTRODUCTION

Natural Resource Consultants (NRC) was retained by Pardee Homes to prepare a Biological Resources Assessment summarizing the results of biological surveys performed on the approximately 203.64-acre Castlerock site, located in the City of San Diego, San Diego County, California. Biological information described in this report incorporates the results of 181 survey visits conducted by NRC between December of 2000 and July of 2012. All studies described in this report were conducted and reported in accordance with the City of San Diego *Guidelines for Conducting Biological Surveys* (July 2002). This report describes the existing biological conditions on the site, evaluates the anticipated impacts of the proposed Project on site-specific and regional biological resources, and provides mitigation measures designed to offset adverse Project effects. Project-specific mitigation measures are consistent with the requirements of the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), City of San Diego *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego, January 2007), and City of San Diego *Biology Guidelines* (City of San Diego 2009) and the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan.

The Project site is located within the jurisdiction of the City of San Diego adjacent to the City of Santee's western boundary and services may be provided by Santee. This report evaluates two Project development alternatives for this site; 1) annexation to the City of Santee (referred to as the Proposed Project or the Project), and 2) no annexation and Project development within the City of San Diego (referred to as the Alternative Scenario).

1.1 Proposed Project and Alternative Scenario

1.1.1 PROPOSED PROJECT

The Proposed Project would result in the construction of 283 detached single-family residences, 147 single-family detached units clustered on larger lots (referred to as "green court" units), parks, a multi-use trail, public streets and private driveways, and 94.92 acres of open space on the 203.64-acre site, within the East Elliot Community Plan. Proposed development on the Castlerock site, including portions of Brush Management Zone 2 (BMZ-2), would result in the disturbance to approximately 108.72 acres of on site native and non-native vegetation communities. Brush Management Zone 2 areas total 9.08 acres on site with 6.54 acres within the development area. Approximately 102.18 acres of vegetation on site would be disturbed by the Proposed Project. The remaining 94.92 acres would be conveyed to the City of San Diego as natural open space within the Multi-Habitat Planning Area (MHPA). The MHPA open space includes a 1.92-acre vernal pool preserve area, a 1.01 acre public improvements lot, and an additional 2.54 acres which overlap with BMZ-2 areas within the homeowners association (HOA) lots. Off-site improvements include grading of Street "E' along the northern site boundary and a portion of the SDG&E parcel that is "not a part" situated within the site boundary. A landslide extends into the development area from the MHPA and would potentially involve up to 5 acres of landslide remediation as well. The exact extent of the landslide would not be known until further testing is done prior to grading. Upon completion of the testing, it may be necessary to increase grading to remove and/or buttress the landslide within the MHPA. This circumstance is addressed within this report (See Section 6.11).

1.1.2 ALTERNATIVE SCENARIO

If the Project is not annexed into the City of Santee and remains in the City of San Diego, minor changes in these impact/preservation totals would occur. This Alternative Scenario would involve slight changes in the land uses with 282 detached single-family residences 140 single-family detached small lot units. Development of the Alternative Scenario on the Castlerock site would be similar to the Proposed Project and would result in the disturbance to approximately 108.91 acres of on site native and non-native vegetation communities and preserve 94.73 acres of open space. The on site development includes 1.54 acres for a water tank and access road. Brush Management Zone 2 areas total 8.79 acres on site with 6.22 acres within the development area. Approximately 102.69 acres of vegetation on site would be disturbed by the Alternative Scenario. The MHPA open space includes a 1.92-acre vernal pool restoration area, a 1.67 acre public improvements lot, and an additional 2.57 acres which overlap with BMZ-2 areas within

the HOA lots. Because the City of San Diego does not maintain existing infrastructure adjacent to the Project site, this scenario requires additional infrastructure such as an on site water storage tank and wastewater pump station and would require off-site grading along Mast Boulevard. Off-site improvements include sewer and water infrastructure crossing at West Hills Parkway, widening along Mast Boulevard, grading of Street "E" and grading a portion of the SDG&E parcel.

TABLE I: CASTLEROCK DEVELOPMENT SUMMARY

Land Use	Total Net Site Area (acres) Proposed Project	Total Net Site Area (acres) Alternative Scenario
Impacts	102.18	102.69
Impact Neutral (Brush Management Zone 2) within Impact Area	6.54	6.22
Development Area Subtotal	**108.72**	**108.91**
MHPA for Mitigation	92.38	92.16
Impact Neutral (Brush Management Zone 2) within Preserve Area	2.54	2.57
MHPA Preserve Subtotal	**94.92**	**94.73**
PROJECT TOTAL	**203.64**	**203.64**

2.0 SITE LOCATION AND EXISTING CONDITIONS

The Castlerock site is located approximately one-half mile east of State Highway 52, one-half mile north of Mission Gorge Road, and immediately west of Santee Lakes Regional Park in the City of San Diego, San Diego County, California (Exhibit 1). The site is situated within the Rancho El Cajon Spanish Land Grant, in Township 15 South, Range 1 West, of the 7.5-minute USGS *Poway* quadrangle. The site can be accessed from the south along trails across from West Hills Community Park and West Hills High School, situated along Mast Boulevard. It can also be accessed from the east via Moana Kia Lane (Exhibit 2). An existing network of dirt roads and trails provides access to most areas on site.

In the general vicinity surrounding the Castlerock site are Santee Lakes Regional Park and residential areas of the City of Santee to the east, West Hills Park and West Hills High School to the south along Mast Boulevard, the Sycamore Canyon Landfill and Little Sycamore Canyon to the west, the Miramar Marine Corps Air Station to the northwest, and Mission Trails Regional Park a short distance away to the southwest.

The majority of the site is comprised of grassland and scrub vegetation with little wetland vegetation. Several seasonal drainages flow generally south and southeastward into Sycamore Channel along the eastern boundary; these drainages eventually flow into the San Diego River, a short distance to the south. The majority of the site supports non-native grassland consisting of a combination of native and non-native grassland components. In some areas, grasslands are intermixed with low and sparse coastal sage scrub. Disturbed to mature coastal sage scrub occurs on the slopes and ridges in the northern and western portions. Several species of exotic landscape trees and shrubs are present in association with an electrical power substation situated in the southeastern portion. An SDG&E substation, located roughly in the middle of the site is in a separate ownership and is not a part of the Proposed Project. The site ranges in

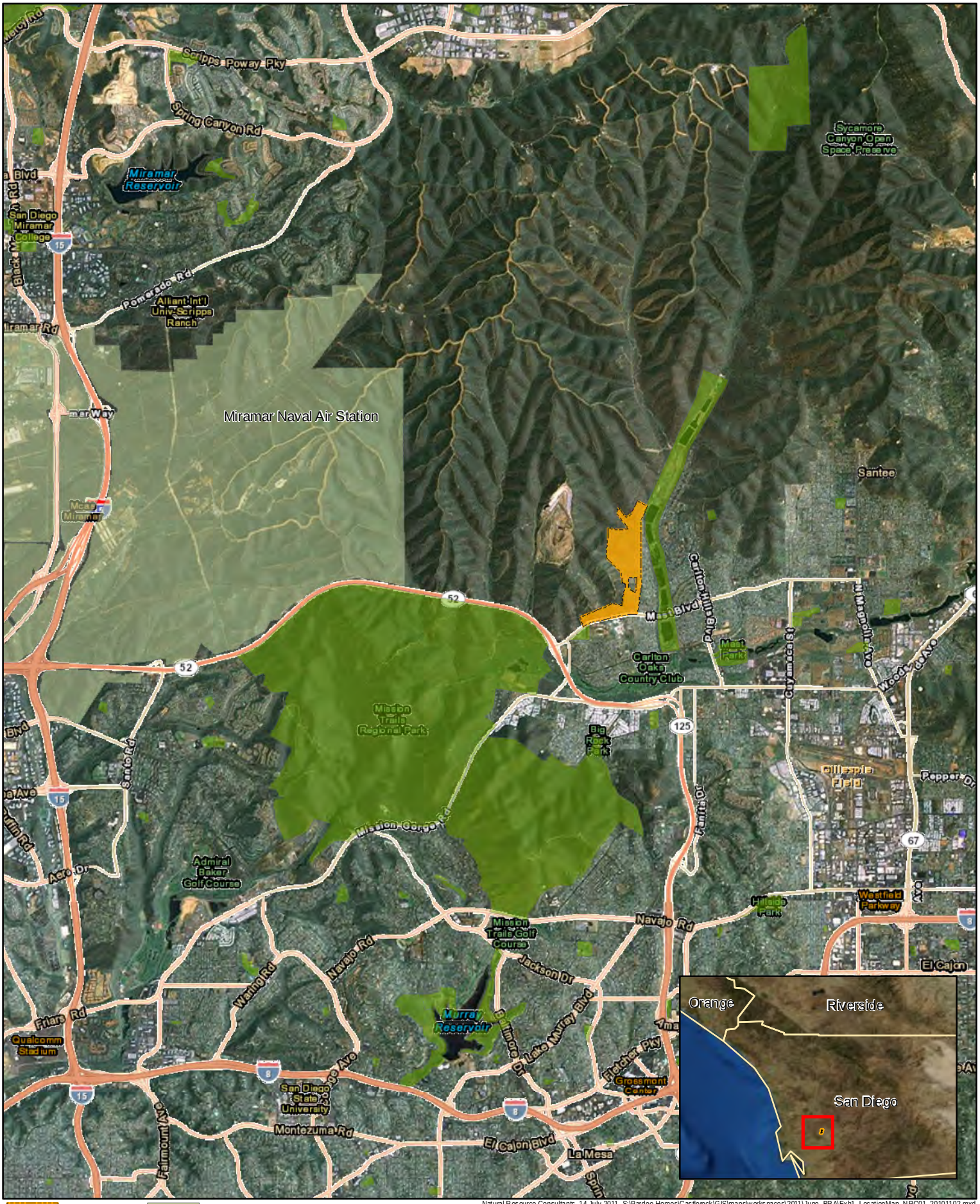

Exhibit 1: Location Map

Castlerock | San Diego County, California

Natural Resource Consultants. 2 November 2010. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2010\bio_res_assess\Exh2_SiteMap_NRC01_20101102.mxd

Site Boundary
MHPA Boundary

N
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0 290 580 1,160 ft

1:9,295 1 inch = 775 feet

Exhibit 2: Site Map
Castlerock | San Diego County, California

elevation from 376 feet above mean sea level (msl) in the eastern portion of the site to 668 feet above msl in the northeastern portion of the site.

In October of 2003 the Cedar Hills Wildfire incinerated almost all vegetation on the site. Vegetation on the site has shown recovery since the fire. The extent and locations of vegetation and special status plant and wildlife species described in this document reflect post-fire site conditions from survey data collected in 2010. While the vegetation composition is similar, they are different in distribution and density from pre-fire conditions (e.g. NRC 2006, NRC 2007). For example, the population size and total occupied acreage of San Diego goldenstar (*Bloomeria clevelandii*) and native grasslands are greater than was mapped prior to the 2003 fire.

2.1 GIS Analysis of Special Status Species Data

NRC conducted a comprehensive evaluation of GIS database information available for the site including special status species data from the California Natural Diversity Database (CNDDB, 2012) and USFWS Species Occurrence Data, Critical Habitat boundaries, and the CDFG California Wildlife Habitat Relationships Database. Analysis for the Castlerock site included data for the *El Cajon*, *La Mesa*, *Poway* and *San Vincente Reservoir* USGS 7.5-minute quadrangles.

2.1.1 USFWS Critical Habitat

"Critical Habitat" is a term within the Endangered Species Act defined as "an area occupied by a species listed as threatened or endangered within which are found physical or geographical features essential to the conservation of the species, or an area not currently occupied by the species which is itself essential to the conservation of the species" The Castlerock site is outside the Critical Habitat boundaries for any federally-listed threatened or endangered species (Exhibit 3). Designated Critical Habitat for least Bell's vireo (*Vireo bellii pusillus*) occurs less than one-half mile from the southern boundary of the site (USFWS 1994). Designated Critical Habitat for San Diego ambrosia (*Ambrosia pumila*) is located approximately one-half mile from the southern boundary of the site, but occurs at the West Hills Parkway Bridge improvement associated with the Alternative Scenario (USFWS 2010). Designated Critical Habitat for the coastal California gnatcatcher (*Polioptila californica californica*) occurs less than one mile of the site to the east and south (USFWS 2007) while designated Critical Habitat for willowy monardella (*Monardella linoides* ssp. *viminea*) occurs approximately one and half miles north of the site (USFWS 2006).

Under the Alternative Scenario, off-site improvements near where the West Hills Parkway Bridge crosses the San Diego River are within the Designated Critical Habitat boundary for the least Bell's vireo and Designated Critical Habitat boundary for San Diego ambrosia.

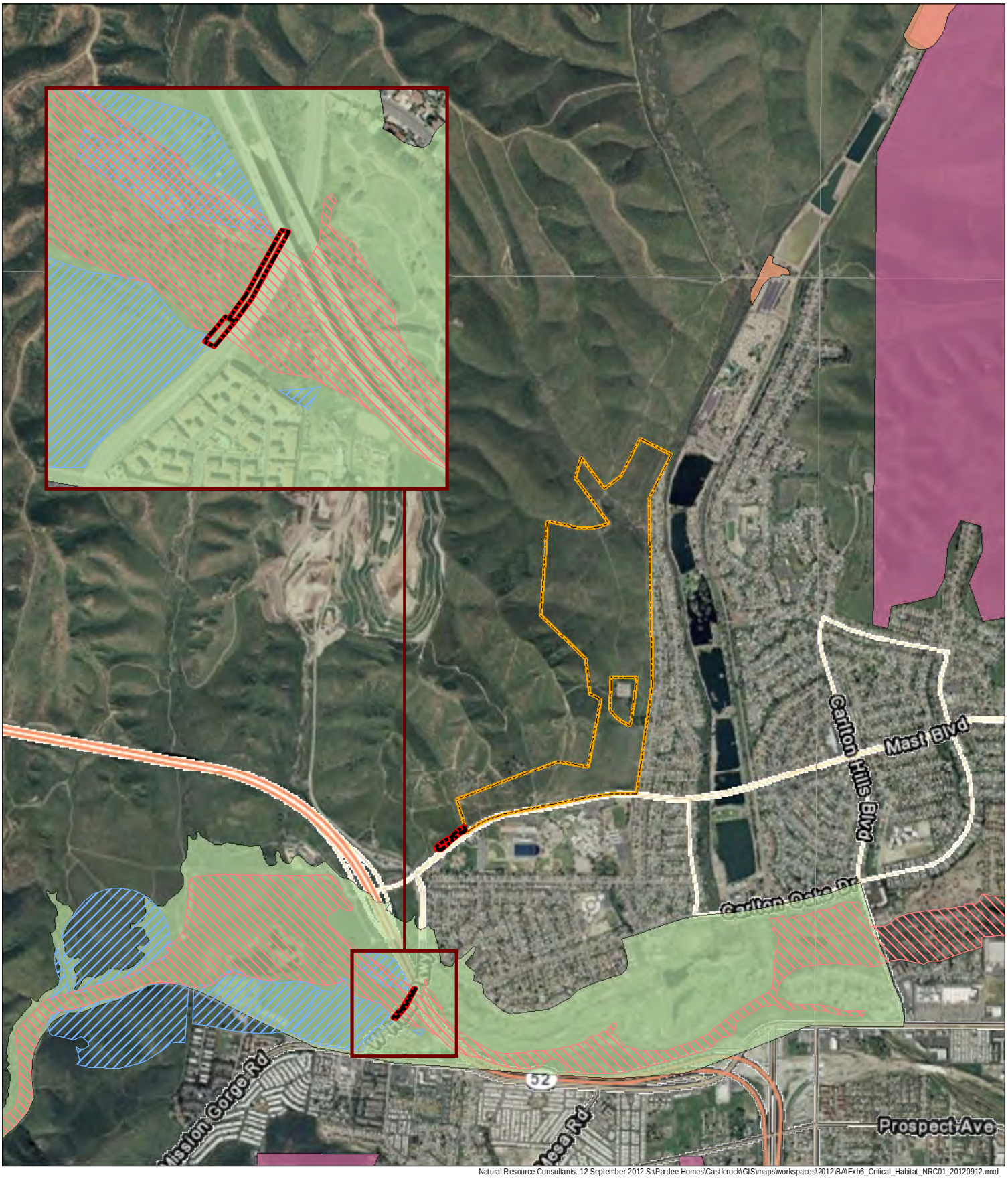
2.1.2 California Natural Diversity Database Analysis

The California Natural Diversity Database records reported occurrences of special status plants, wildlife, and vegetation communities. The CNDDB provides a broad indication of species that may exist within an area although the exact mapped locations may or may not be accurate. Data current as of 2012 reveals records of 29 species of special status plants, six rare vegetation communities, and 34 species of special status wildlife since 1985 within the four-quadrangle study area (Exhibits 4 and 5).

2.1.3 Multiple Species Conservation Program Conformance

The Castlerock Project site is located within the MSCP Subarea Plan-Eastern Area. This section of the MSCP has three general guidelines, all of which deal with the Sycamore Canyon Landfill. There are no MSCP guidelines specific to Castlerock. In general, the Castlerock site is located within the area designated for development on the City's MSCP map.

Section 1.5 of the MSCP addresses management of the MHPA. Those portions of Castlerock located within the MHPA would be conveyed to the City and incorporated into the City's management program. As stated in Section 1.5, "The City will also manage and maintain lands obtained as mitigation where those lands have been dedicated to the City in fee title or easement, and land acquired with regional funds



Natural Resource Consultants. 12 September 2012.S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\BA\Exh6_Critical_Habitat_NRC01_20120912.mxd

- Site Boundary
- Off-site Improvement Areas
- Least Bell's Vireo Designated Critical Habitat (1994)
- California Gnatcatcher Designated Critical Habitat (2007)
- Southwestern Willow Flycatcher Proposed Critical Habitat Considered for Exclusion (2011)
- Willowy Monardella Designated Critical Habitat (2012)
- San Diego Ambrosia Designated Critical Habitat (2010)

N
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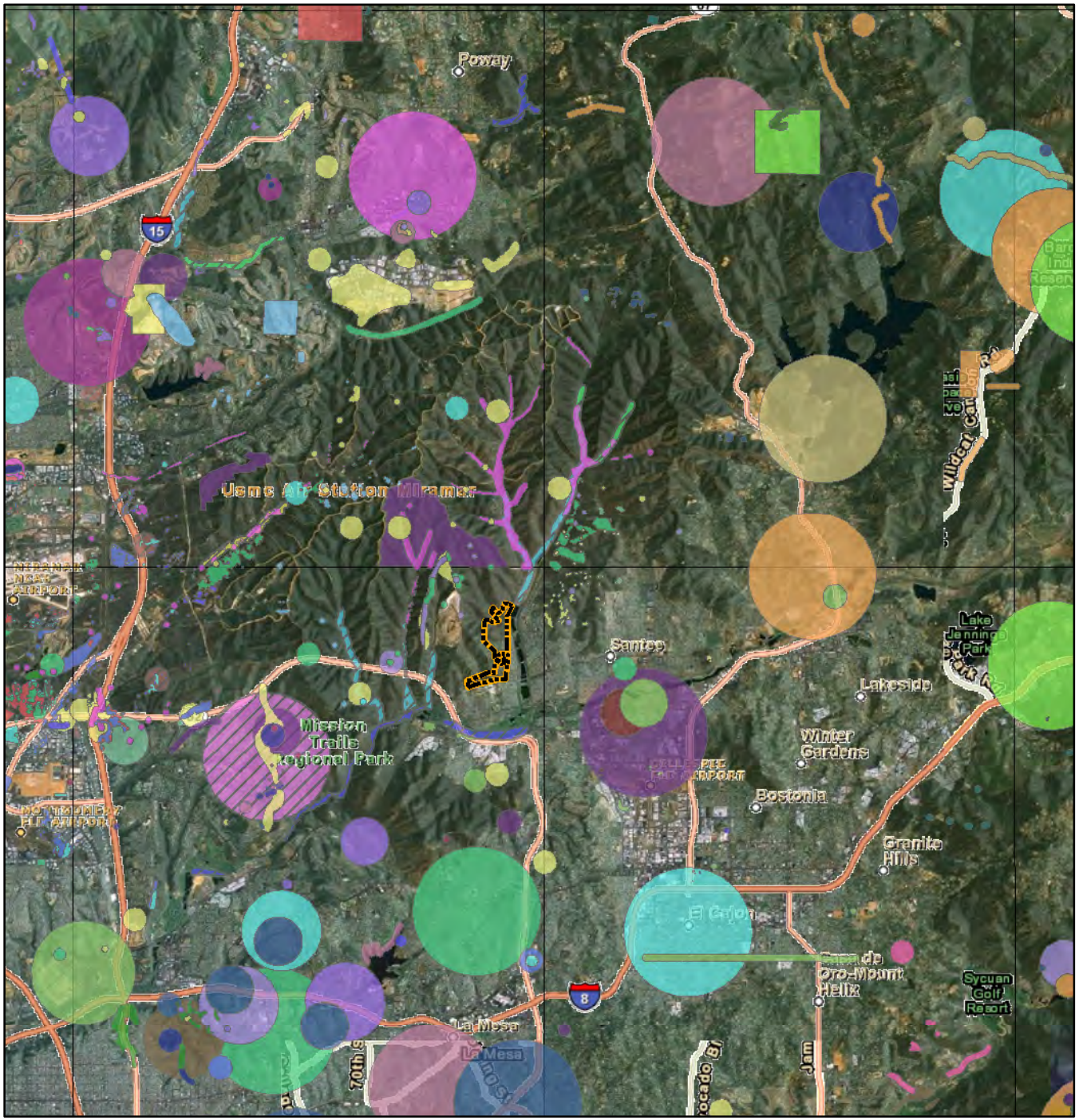
0 0.2 0.4 0.8 mi

1:27,304 1 inch = 0.4 mile

Exhibit 3: USFWS Critical Habitat
Castlerock | San Diego County, California



Plants

- California adolphia
- Dean's milk-vetch
- Del Mar manzanita
- Encinitas baccharis
- Gander's ragwort
- Lakeside ceanothus
- Nuttall's scrub oak
- Orcutt's brodiaea
- Palmer's goldenbush
- Palmer's grapplinghook
- Ramona horkelia
- Robinson's pepper-grass
- San Diego ambrosia
- San Diego barrel cactus
- San Diego button-celery
- San Diego goldenstar
- San Diego mesa mint
- San Diego sagewort
- San Diego thorn-mint
- decumbent goldenbush
- delicate clarkia
- little mousetail
- long-spined spineflower
- smooth tarplant
- summer holly
- variegated dudleya
- wart-stemmed ceanothus
- willowy monardella
- woven-spored lichen

Project Boundary

Vegetation Communities

- San Diego Mesa Hardpan Vernal Pool
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood Willow Riparian Forest
- Southern Riparian Scrub
- Southern Sycamore Alder Riparian Woodland
- Valley Needlegrass Grassland

Natural resource Consultants, Inc. 10 October 2012. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh4_CNDDB_plants_NRC01_20121008.mxd

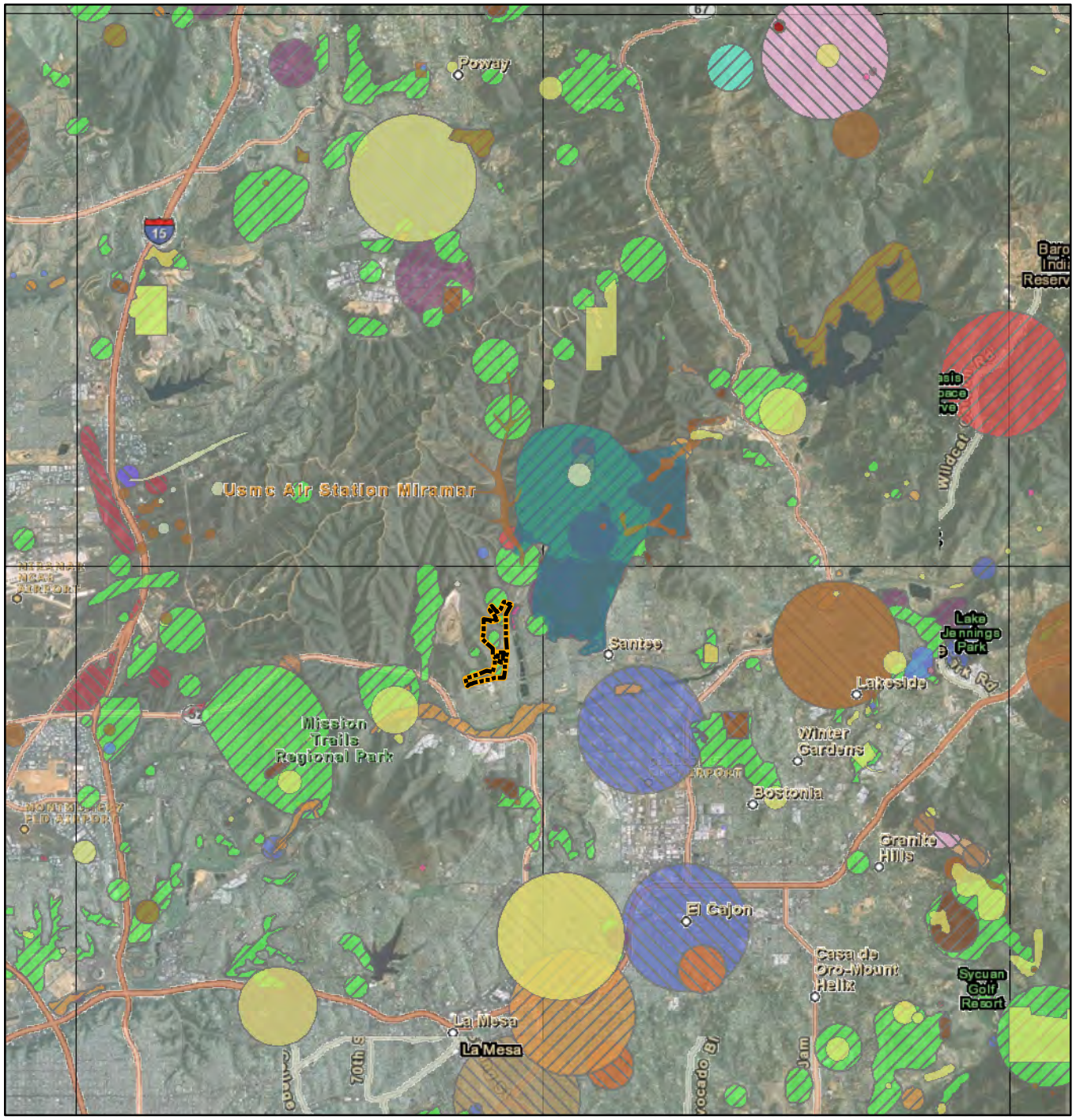
Exhibit 4: CNDDB Plant and Vegetation Communities

Castlerock | San Diego County, California

0 0.5 1 2 3 4 Miles

1:150,000 1 in = 2 miles

N W E S



Project Boundary

Insects
- Hermes copper butterfly
- Riverside fairy shrimp
- San Diego fairy shrimp
- quino checkerspot butterfly

Amphibians
- arroyo toad
- western spadefoot

Reptiles
- Coronado skink
- coast horned lizard
- coast patch-nosed snake
- red diamond rattlesnake
- Belding's orange-throated whiptail
- silvery legless lizard
- two-striped garter snake

Birds
- Cooper's hawk
- burrowing owl
- California gnatcatcher
- coastal cactus wren
- golden eagle
- grasshopper sparrow
- least Bell's vireo
- least bittern
- southern California rufous-crowned sparrow
- white-tailed kite
- yellow-breasted chat

Mammals
- Dulzura pocket mouse
- Mexican long-tongued bat
- San Diego black-tailed jackrabbit
- San Diego desert woodrat
- big free-tailed bat
- northwestern San Diego pocket mouse
- pocketed free-tailed bat
- western mastiff bat
- western red bat
- western yellow bat

Natural Resource Consultants, Inc. 10 October 2012. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh5_CNDDB_wildlife_NRC01_20121008.mxd

Exhibit 5: CNDDB Wildlife
Castlerock| San Diego County, California

0 0.5 1 2 3 4 Miles

1:150,000 1 inch = 2 miles

N W E S

within the City's MHPA boundaries." Section 1.5.6 sets forth management policies and directives for the Eastern Area within which Castlerock is located. The only policy that applies is that stated under "East Elliot-Priority 1", Policy 2. This policy requires that programs be implemented to educate the owners of homes adjacent to the MHPA on the importance of the resources. This requirement in addressed in this report in Section 7.0-Mitigation Measures.

The Castlerock Project conforms to the requirements of the MSCP. An adjustment to the MHPA boundary is proposed as allowed in Section 1.1.1 of the MSCP (See Section 8 of this report).

3.0 BIOLOGICAL SURVEY METHODS

NRC has conducted multiple general biological and special status species studies on the Castlerock site between December of 2000 and July of 2012 as summarized in the Appendix A. Results from these surveys indicate that the presence of two federal or State listed species and twenty-three other special status plant and wildlife species on the site. Two additional federal and State listed species were also observed in the immediate vicinity of an off-site improvement area under the Alternative Scenario. A complete inventory of the plant species observed on the site is included in Appendix B. A complete list of the fauna is found in Appendix C.

A comprehensive wetland delineation of the site was conducted by GLA in 2003 with various updates for vernal pools and man-made features in 2005 and 2010. In addition, GLA conducted focused wet season surveys for fairy shrimp species in 2003/2004, 2004/2005, and 2010/2011 and a dry season survey in 2006. Prior to beginning the field delineation aerial photographs, topographic base map of the property, and USGS topographic maps were examined to determine the locations of potential areas of jurisdictional waters, including wetlands. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Suspected wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual (Wetland Manual) and the 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement). While in the field the limits of jurisdictional waters were recorded onto an aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets. Focused surveys were conducted following accepted USFWS protocols, as referenced by the City of San Diego Biology Guidelines (2009). A full description of this information has been provided by GLA (GLA 2011, GLA 2012).

Floral taxonomy used in this report follows The Jepson Manual (Baldwin et.al. 2012) with departures for the Lily Family as per Simpson et al. (1996). Common plant names, where not available from Baldwin, are taken from Abrams (1923 and 1944), Abrams and Ferris (1951 and 1960), Beauchamp (1986), Munz (1974), Skinner and Pavlik (1994), and Simpson et al. (1996). Vertebrate taxonomy follows Center for North American Herpetology (2005) for amphibians and reptiles, American Ornithological Union (1998 and subsequent updates) for birds, and Kays and Wilson (2002) for mammals. Scientific names are mentioned once and common names are used thereafter.

3.1 Vegetation Mapping

Major vegetation types and other surface features on the site were field-mapped in March and April of 2005 and updated in 2006, 2007, and 2010. The field maps were digitized into a geographic information system (GIS) for impact evaluation. Ten vegetation communities were identified on the Castlerock site using the Oberbauer classification system (Oberbauer 1996) based on Holland descriptions (Holland, 1986): vernal pool, emergent wetland, coastal and valley freshwater marsh, native grassland, disturbed coastal sage scrub, coastal sage scrub, baccharis-dominated coastal sage scrub, non-native grassland, eucalyptus woodland, and disturbed/developed (See Section 4.0- Vegetation Communities). Concurrent with these surveys, 229 species of plants were identified. Of these, 58, or approximately twenty-five percent, were non-native species. A complete list of the plant species found on site is included in the Floral Compendium, Appendix B.

3.2 Special Status Species Surveys

The following special status species surveys were conducted on the Castlerock site.

3.2.1 Special Status Plant Surveys

Survey methods followed protocols described by the California Native Plant Society (CNPS) and California Department of Fish and Game (CDFG; (CNPS 2001). Focused surveys to locate special status plant species on the Castlerock site have been performed by biologists Claude G. Edwards, Teresa Salvato, Mitch Provance, and Eric Kline in 2001 and 2003 through 2012. NRC's focused surveys were supplemented by a review of available information that contained lists of special status plants potentially occurring in the San Diego region. These include "Covered Species" under the Multiple Species Conservation Program (MSCP), narrow endemic species, and species records described within the California Department of Fish and Game (CDFG) Natural Diversity Data Base (CNDDB, 2012) for four USGS quadrangles encompassing and surrounding the site, *El Cajon*, *La Mesa*, *Poway*, and *San Vicente Reservoir*. The results of these surveys are discussed in Section 5.2.1 of this report. Surveys focused on all CNDDB recorded species in the vicinity with emphasis on variegated dudleya (*Dudleya variegated*), San Diego goldenstar (*Bloomeria clevelandii*), and coast barrel cactus (*Ferocactus viridescens*). Surveys for San Diego ambrosia (*Ambrosia pumila*) were conducted in suitable habitat in the vicinity of West Hills Parkway Bridge and the San Diego River in August of 2006, June 2007, July 2010, May 2011, and April and May 2012. In 2007, San Diego ambrosia was detected approximately 500 feet west of the off-site improvement area under the alternative option at a known historical location; however no individuals were observed on site or within a proposed development area.

3.2.2 Coastal California Gnatcatcher Surveys

Surveys to determine presence/absence of coastal California gnatcatcher followed survey protocols as regulated by the USFWS (USFWS 1997). All areas were covered on foot by walking slowly through or adjacent to suitable habitat, stopping periodically to listen for gnatcatcher vocalizations. Tape-recordings of the species' typical mew notes were played periodically to induce any nearby silent birds that may be present to call in response to the presumed intruder. The location of all gnatcatcher detections were recorded using a hand-held global positioning system (GPS) unit. An attempt was made to determine breeding status of any gnatcatcher detected;, however, no nest surveys or nest monitoring was conducted.

NRC conducted focused surveys for the coastal California gnatcatcher on the Castlerock site and surrounding areas according to the USFWS-approved survey methods for this species (USFWS 1997) in 2001, 2002, 2003, 2010 and 2012. The 2001 and 2002 gnatcatcher surveys were performed by permitted biologists Michael W. Klein and Claude Edwards, under authority of Section 10(a) recovery permit # TE 814215-2. The 2003 gnatcatcher survey was performed by permitted biologist John C. Lovio under authority of Section 10(a) recovery permit # TE 065741-0. The 2010 and 2012 gnatcatcher surveys were conducted by permitted biologist Eric Kline under authority of Section 10(a) recovery permit # TE 110373-2. The coastal California gnatcatcher has been observed on site. The results of these surveys are discussed in Section 5.3.1 of this report.

3.2.3 Least Bell's Vireo and Southwestern Willow Flycatcher Surveys

Surveys to determine presence/absence of least Bell's vireo and southwestern willow flycatcher are regulated by the USFWS. For least Bell's vireo, the USFWS requires a minimum of eight surveys conducted by a qualified biologist at least 10 days apart during the breeding season (USFWS 2001), April 10 to July 31. A maximum of 3 linear kilometers of suitable vireo habitat may be surveyed by one person in any one day. For the flycatcher, the USGS and USFWS recommend Project-related surveys to be conducted according to the following schedule: at least one survey between May 15 and May 31, at least two surveys between June 1 and June 24, and two surveys between June 25 and July 17, at a minimum of five days apart (USGS 2010). For both species, surveys are to be conducted in the morning between sunrise and 11:00 am; however, when temperatures are excessively cool or hot or the weather is inclement, surveys are to be suspended. A digital recorder and portable speaker were used to broadcast

recorded flycatcher songs and calls. No recorded vireo songs or calls were played. All areas were surveyed on foot by walking slowly through or adjacent to suitable habitat, stopping periodically, with special attention given to detecting the vireo and flycatcher by their distinctive calls and/or songs, and observing them visually when possible. The location of all vireo and flycatcher detections were recorded using a hand-held GPS unit. An attempt was made to determine breeding status of any vireo or flycatcher detected, however, no nest surveys or nest monitoring was conducted. The presence of brown-headed cowbirds (Molothrus ater) was noted when observed.

NRC conducted focused surveys for least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) in the vicinity of the West Hills Parkway Bridge off-site improvement area annually between 2008 and 2012. Surveys were conducted along the riparian forest vegetation in the vicinity of the bridge where it passes over the San Diego River. The vireo and flycatcher surveys were performed by permitted biologist Rob Bates under authority of Section 10(a) recovery permit # TE 154963-0 in 2008 through 2010 and by Kelly Goocher under authority of Section 10(a) recovery permit # TE 098994-3 in 2011. The 2012 vireo and flycatcher surveys were performed by permitted biologist H. Lee Jones under authority of Section 10(a) recovery permit # TE 829204-5. The 2008, 2009, 2011, and 2012 vireo surveys were also conducted and assisted by biologist Eric Kline. The 2008 vireo survey was assisted by biologist Marcus England. Least Bell's vireo and southwestern willow flycatcher have been observed in the vicinity of the West Hills Parkway Bridge off-site improvement area. No least Bell's vireo or southwestern willow flycatcher were observed on site. The results of these surveys are discussed in Section 5.3.1 of this report.

3.2.3 SAN DIEGO FAIRY SHRIMP SURVEYS

USFWS protocol wet season surveys for San Diego fairy shrimp were conducted by GLA in 2003/2004, 2004/2005, and 2010/2011. GLA also conducted a dry season survey in 2006. Survey methods followed the 1996 USFWS survey guidelines for listed branchiopods (USFWS 1996). During the 2003/2004 wet season survey five features were sampled. Fourteen features, including five on site vernal pools, that ponded water were monitored and sampled during the 2004/2005 wet season. During the 2010/2011 wet season survey ten features were sampled. San Diego fairy shrimp were found in two locations in 2004 and four locations in 2005 along the eastern edge of the property. All locations appeared to be artificially formed and were either road ruts or a created bike jump. No mima mounds were observed in the vicinity of the four features supporting the San Diego fairy shrimp.

3.2.4 QUINO CHECKERSPOT BUTTERFLY SURVEYS

The Castlerock site is situated north and outside of the Southwest San Diego Recovery Unit of the Recovery Plan for the Quino Checkerspot Butterfly (USFWS 2003). The site is also located at the edge of the USFWS Quino Survey Area 2. The habitat assessment and surveys to determine presence/absence of Quino checkerspot butterfly (*Euphydryas editha quino*) followed survey protocols as regulated by the USFWS (USFWS 2002). Areas of suitable habitat and host plant were mapped during the assessment and unsuitable habitat was identified and "excluded" from the adult survey areas. Biologists covered approximately 10-15 acres per hour walking slowly through and adjacent to suitable habitat areas, stopping periodically at areas with a higher likelihood for the Quino checkerspot. Surveys were conducted approximately once a week, depending on environmental conditions, during the adult flight season that is generally between the months of February and April. If environmental conditions were inappropriate to permit detection of the Quino checkerspot butterfly, the survey was not performed or aborted. Based on the extent and location of suitable habitat components for Quino checkerspot butterfly on the site, each survey required approximately one person-day.

NRC conducted focused surveys for the Quino checkerspot butterfly on the Castlerock site annually between 2005 and 2012. . In 2005 through 2007, surveys were conducted within all suitable habit areas by Michael Klein under authority of Section 10(a) recovery permit # TE 039305-2. In 2008 through 2010, surveys were conducted by Eric Kline under authority of Section 10(a) recovery permit # TE 110373-2. In 2011 and 2012, surveys were conducted by Eric Kline, Mike Couffer (TE 782703-8) and

Jeremiah George. No Quino checkerspot butterfly was detected on the Castlerock site during these focused surveys.

3.2.5 HERMES COPPER SURVEYS

NRC biologists conducted presence/absence surveys for adult Hermes copper butterfly surveys (*Lycaena hermes*), a candidate species for federal listing, in 2010, 2011, and 2012. Michael Couffer conducted focused habitat assessments and informal adult Hermes copper butterfly surveys in June and July, 2010 on the Castlerock site. Jeremiah George conducted adult Hermes copper butterfly surveys in 2011 and 2012. These surveys followed the County of San Diego Guidelines for Hermes Copper (County of San Diego 2010). The Guidelines recommend conducting four survey visits in appropriate habitat eight to ten days apart beginning in the first full week of May with the last survey in the first full week of July. Surveys should not be conducted in inclement weather such as rain fog or cloud cover greater than 25 percent. Surveys may be conducted when temperatures are between 70 and 95 degrees Fahrenheit, winds are below 15 miles per hour, and mostly sunny skies. Surveys were conducted at a walking rate of no greater than 10-15 acres per hour. Spiny redberry (*Rhamnus crocea*), the host plant for Hermes copper caterpillars, were mapped and surveyed for presence of Hermes copper butterflies. No Hermes copper butterflies were located during these surveys.

4.0 VEGETATION COMMUNITIES

Ten vegetation communities, vernal pool, emergent wetland, coastal and valley freshwater marsh, native grassland, disturbed coastal sage scrub, coastal sage scrub - coastal form, baccharis-dominated coastal sage scrub, non-native grassland, eucalyptus woodland, and disturbed/developed, have been identified on the Castlerock site in 2010. The locations of these communities on site are shown on Exhibit 6. The acreage of each community as recorded in 2010 is listed in Table II.

TABLE II: VEGETATION COMMUNITIES
APPROXIMATE ACREAGE OF VEGETATION COMMUNITIES ON THE CASTLEROCK SITE BY MHPA TIER

Vegetation Community	Outside MHPA	Inside MHPA	Total	MHPA Tier
Vernal Pool	<0.01	0.00	<0.01	N/A
Wetlands				
Emergent Wetland	0.08	0.10	0.18	N/A
Coastal and Valley Freshwater Marsh	0.51	0.03	0.54	N/A
Native Grasslands	15.28	4.27	19.55	I
Disturbed Coastal Sage Scrub (DCSS)	15.02	44.67	59.69	II
Coastal Sage Scrub – Coastal Form	9.67	11.99	21.66	II
Baccharis-dominated Coastal Sage Scrub	5.17	0.59	5.76	II
Non-native Grasslands	53.89	29.46	83.35	IIIB
Eucalyptus Woodlands	1.46	0.00	1.46	IV
Disturbed/Developed	8.07	3.38	11.45	IV
TOTAL	**109.15**	**94.49**	**203.64**	–

NAP

NOTE: Other sensitive species observed throughout the site but not included on this map include graceful tarplant, ashy spike-moss, decumbant goldenbush, San Diego County viguiera, Coronado skink, coast horned lizard, grasshopper sparrow, So. California rufous-crowned sparrow, yellow warbler, Cooper's hawk, northern harrier, white-tailed kite, San Diego black-tailed jackrabbit, and southern mule deer

Natural Resource Consultants. 9 October 2012. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh6_BiologicalResources_NRC07_20121009.mxd

- Site Boundary
- Existing MHPA Boundary
- Corps and CDFG Non-Wetland (GLA)
- Corps and CDFG Wetland (GLA)

Basin Features (GLA)
- Emergent Wetland
- Non-Vernal Pool
- Non-Vernal Pool, SD Fairy Shrimp Observed
- Vernal Pool

Vegetation Type
- Non-Native Grasslands
- Native Grasslands
- Baccharis-Dominated Coastal Sage Scrub
- Coastal Sage Scrub - Coastal Form
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Eucalyptus Woodlands
- Disturbed

Sensitive Wildlife
- Western spadefoot (2003)
- Belding's orange-throated whiptail (2012)
- Northern red rattlesnake (2012)
- Two-striped garter snake (2008)
- California Gnatcatcher (2012)
- San Diego fairy shrimp (GLA 2004 & 2005)

Sensitive Plants
- San Diego barrel cactus (2012)
- Variegated dudleya (2012)
- Palmer's Grapplinghook (2012)
- San Diego goldenstar (2012)
- Robinson's peppergrass (2012)

N W E S

0 245 490 980 ft

1:6,134 1 inch = 511 feet

Exhibit 6: Biological Resources

Castlerock | San Diego County, California

4.1 Diegan Coastal Sage Scrub (32500)

Diegan coastal sage scrub vegetation occurs in localized patches or in large, continuous stands on the level terrace and on slopes within the southern, western and northern portions of the proposed Castlerock development area. Three sub-associations of coastal sage scrub were identified on the site; coastal sage scrub – coastal form, coastal sage scrub dominated by broom baccharis and disturbed coastal sage scrub. These sub-associations are described below and mapped separately on Exhibit 6. All of these sub-associations are best classified under Holland Code 32500.

4.1.1 COASTAL SAGE SCRUB – COASTAL FORM (32510)

The coastal form of coastal sage scrub is characterized by a mixture of drought-deciduous and evergreen shrubs and sub-shrubs. Drought-deciduous elements, such as California sagebrush (*Artemisia californica*), bush sunflower (*Encelia californica*), San Diego County viguiera (*Viguiera laciniata*), and bush monkeyflower (*Mimulus aurantiacus*) shed or reduce their leaves to minimize water losses during the dry summer months, whereas others such as the California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), and spiny redberry (*Rhamnus crocea*) reduce water loss during the drought months with thick, waxy leaves. Other typical woody species of this plant association include white sage (*Salvia apiana*), black sage (*Salvia mellifera*), California brickellbush (*Brickellia californica*), and ropevine (*Clematis pauciflora*). Mature coastal sage scrub is naturally open, but the composition and structure (height and proportion of shrub cover) varies greatly with slope and aspect. Mature stands range between about three and five feet in average height and between 50 and 90% shrub cover, with the greatest height and density on north-facing slopes and the lowest on southeast-facing slopes. Drier, more exposed slopes of coastal sage scrub also commonly support stands of the shrub-forming cacti, coastal prickly pear (*Opuntia littoralis*) and coast cholla (*Cylindropuntia prolifera*).

Openings in the coastal sage scrub support herbaceous plants, including both native and non-native grasses, perennial and annual wildflowers. The herbaceous elements of coastal sage scrub often support such native species as purple needlegrass (*Stipa pulchra*), lilac mariposa lily (*Calochorus splendens*), blue-dicks (*Dichelostemma capitatum*), rattlesnake weed (*Daucus pusillus*), golden-yarrow (*Eriophyllum confertiflorum*), two-colored rabbit-tobacco (*Pseudognaphalium bioletti*), ladies tobacco (*Pseudognaphalium californicum*), fascicled tarplant (*Deinandra fasciculata*), California-aster (*Corethrogyne filaginifolia*) and rosinweed (*Osmadenia tenella*). Also present are non-native species such as wild oats (*Avena fatua, Avena barbata*), foxtail brome (*Bromus madritensis* ssp. *rubens*), soft chess (*Bromus hordaceus*), ripgut grass (*Bromus diandrus*), black mustard (*Brassica nigra*), long-beaked filaree (*Erodium botrys*) and red-stemmed filaree (*Erodium cicutarium*).

Certain openings in coastal sage scrub are found on naturally open clay or dense cobble soils and support sparse bulbiferous plants, wildflowers, succulents, and crust-forming primitive plants such as mosses, lichens, and spike-mosses. Plants occurring in these areas include purple needlegrass, common goldenstar (*Bloomeria crocea*), lavender mariposa lily, small-flowered soap-plant (*Chlorogalum parviflorum*), blue dicks, dot-seed plantain (*Plantago erecta*), and San Diego goldenstar (*Bloomeria clevelandii*). Basin features 8 and 13 are included in the mapped coastal sage scrub.

4.1.2 BACCHARIS-DOMINATED COASTAL SAGE SCRUB (32510)

The land in the vicinity of Quail Canyon Creek supports a baccharis-dominated coastal sage scrub. This community is dominated by broom baccharis (*Baccharis sarothroides*), California buckwheat, tocalote, black mustard, and various non-native grasses. The drainage itself is largely unvegetated except for widely scattered mule fat (*Baccharis salicifolia*) and black willow (*Salix goodingii*).

4.1.3 DISTURBED COASTAL SAGE SCRUB (32510)

Coastal sage scrub that has been disturbed by fire or mechanical damage, such as crushing or grazing, is generally much lower in structure and diversity of shrubs, with the corresponding open areas dominated by herbaceous species. Native shrub density in disturbed coastal sage scrub areas is approximately 20 percent of absolute cover and intergrades with disturbed areas, non-native grasslands or ruderal

herbaceous vegetation. Basin feature 16, found in an old road, was included in the mapped disturbed coastal sage scrub as the old road feature contains recovering coastal sage scrub plant species.

4.2 Valley and Foothill Grassland (42000)

The Castlerock site supports non-native and native grasslands as described below. These vegetation communities intergrade. In 2010, NRC conducted qualitative surveys to define areas of native grasslands. The term "native grassland" refers to stands with at least 10 percent absolute cover of native grass and/or native forb species (Stromberg et al. 2007, *sensu* Keeler-Wolf et al. 2007, and Sawyer et al. 2010)

4.2.1 NON-NATIVE GRASSLAND (42200)

Non-native grasslands are extensive on the lower slopes and terraces of the southern and eastern edges of the site where it borders suburban development to the east and ridges of coastal sage scrub to the north and west. Grasslands are also associated with openings in the sage scrub on these ridges. Non-native grassland is dominated by introduced Mediterranean grasses of several species consisting primarily of wild oats (*Avena* spp.) and bromes (*Bromus* spp.). Also present are herbaceous plants such as fascicled tarplant, black mustard, prickly lettuce (*Lactuca serriola*), and tocalote (*Centaurea melitensis*).

Disturbed areas of non-native grassland vegetation are present on site at various locations within the proposed development area, in areas of human-associated motorized off-highway vehicle activity and disposal of home and garden refuse.

4.2.2 NATIVE GRASSLAND (42100)

The areas mapped as native grassland have at least 10 percent absolute cover of native grasses; primarily purple needlegrass. Within the gradually sloping, grassland-dominated eastern and southern sections of the site, native grasslands occur on relatively steep slopes with thinner, rockier soils, as opposed to level areas with deeper, more saturated soils where non-native grasslands dominate. Plant stature and cover in native grasslands is lower than in the rank growth of non-native grasslands. It is presumed that this open condition supports the greater diversity of small herbaceous plants in native grassland communities. The majority of the native grass cover was by purple needlegrass. Native, non-grass herbaceous components of the native grasslands include blue-eyed grass (*Sisyrinchium bellum*), Johnny jump-up (*Viola pedunculata*), deergrass (*Muhlenbergia rigens*), purple owl's clover (*Castilleja exserta*), soap plant (*Chlorogalum* spp.), shooting star (*Dodecatheon* spp.), blue dicks (*Dichelostemma capitatum*), Fremont's star lily (*Toxicoscordion fremontii*), and California poppy (*Eschscholzia californica*).

4.3 Eucalyptus Woodland (11100)

A large, open grove of non-native eucalyptus trees occurs on a south-facing slope adjacent to the southwest end of the proposed development area. Several more eucalyptus trees occur in the vicinity of the electrical power substation in the southeastern portion of the site, as well as along the eastern site boundary with suburban yards beyond the property. These stands are dominated by non-native gum trees (*Eucalyptus* spp.). These fast-growing trees produce a large amount of leaf and bark litter, which contain compounds toxic to other plant species. The accumulation of litter results in a lack of under story beneath eucalyptus groves. This vegetation community is classified under Holland Code 11100.

4.4 Disturbed / Developed (11300)

Disturbed and developed portions of the site are generally unvegetated and associated with human activity. On Castlerock, disturbed/developed areas include a rock water energy dissipater, paved and unpaved roads and trails, and a paved pad around a power utility station. This vegetation community is classified under Holland Code 11300. In addition, the site is traversed by small dirt trails caused by unauthorized off-road vehicle use; however, these areas of disturbance were not included as a disturbed vegetation community due to their small size. Basin features 1, 2, 3, 6, and 15 found in road ruts are included in this disturbed vegetation community.

4.5 Jurisdictional Waters, Wetlands and Vernal Pools

Six jurisdictional drainages on site (Drainages A, B and B-1, C, D, E, and F) and two jurisdictional areas off-site were described by Glenn Lukos Associates, Inc. (GLA 2012). These are small, ephemeral drainages that cross the site and most terminate at local storm drains. Some of these drainages or portions of these drainages are unvegetated. Plants recorded within and adjacent to these drainages include broom baccharis, mule fat, black willow, Mexican rush (*Juncus mexicanus*), pale spike rush (*Eleocharis macrostachya*), cattail (*Typha domingensis*), curly dock (*Rumex crispus*), California buckwheat, laurel sumac, ladies tobacco, purple needlegrass, tocalote, and black mustard. Vernal pool and jurisdictional locations are shown in Exhibit 6.

The U.S. Army Corps of Engineers (Corps) and Regional Water Quality Control Board (RWQCB) jurisdiction associated with the Castlerock site totals approximately 1.40 acres, of which approximately 0.72 acre consists of jurisdictional wetlands. The Alternative Scenario includes two additional off-site improvement areas of Corps/RWQCB jurisdiction, including a drainage supporting 0.02 acre of wetland located north of Mast Boulevard, and 0.30 acre of wetlands associated with the San Diego River at the West Hills Parkway Bridge. CDFG jurisdiction associated with the Castlerock site totals approximately 1.37 acres, including 0.70 acre of riparian vegetation, Additional CDFG jurisdiction associated with the Alternative Scenario off-site improvements include a drainage supporting 0.02 acre of riparian vegetation located north of Mast Boulevard, and 0.43 acre of riparian vegetation associated with the San Diego River at the West Hills Parkway Bridge. If the Castlerock site is annexed by the City of Santee (proposed Project), then the City of San Diego wetlands policies would not apply to the Project. If the Alternative Scenario is developed as part of the City of San Diego then the City's wetland policies would apply. The City of San Diego wetlands represent the same areas as the Corps wetlands, with the exception of less than 0.01 acre of City of San Diego vernal pools that are not subject to the Corps jurisdiction. City of San Diego wetlands associated with the Castlerock site total approximately 0.72 acre, of which less than 0.01 acre consists of vernal pools. Additional City wetlands associated with the Alternative Scenario off-site improvements include 0.02-acre wetland area located north of Mast Boulevard, and the 0.43 acre of wetlands associated with the San Diego River at the West Hills Parkway Bridge.

4.5.1 VERNAL POOL (44300)

Vernal pools are seasonally flooded depressions that support species adapted to variable hydrologic conditions. Sixteen features were identified on site capable of holding water for at least a short period, although not all of the depressions exhibit surface inundation every season. All 16 features are listed below in Table III. These 16 features were evaluated to determine if they are vernal pools per the City criteria and to determine if they are occupied by fairy shrimp. For a depression to be considered a vernal pool under the City's regulations, the feature must support at least one vernal pool indicator plant species. Of the 16 features examined on-site, seven features (9, 10, 11, 12, 14, 15, and 16) included vernal pool indicator plants. Features 9, 10, 11, 12, and 14 (totaling 255 square feet or less than 0.01 acre) are associated with a mima-mound complex typical of natural vernal pools and include a hydrophytic vegetation community. These five features meet the criteria for City of San Diego vernal pools and are referenced in the Draft City-wide Vernal Pool Management Plan (City of San Diego 2008b). The other two (features 15 and 16) containing indicator plants are associated with man-made roadways. Feature 15 consists of a depression within a dirt road that crosses a drainage feature. During periods of rainfall, water from the drainage flows over the road, with the compacted low point in the road remaining ponded after drainage flows cease. This depression should be regarded as artificial ponding within a drainage course. Feature 16 consists of a series of depressions within an apparent access road that was constructed in uplands within an area that did not appear to naturally contain vernal pool topography. Therefore, neither of these features is considered a vernal pool. Plants recorded within the watershed to the five vernal pools include slender woolly-heads (*Psilocarphus tenellus*), toad rush (*Juncus bufonius*), annual hairgrass (*Deschampsita danthonioides*), and hyssop loosestrife (*Lythrum hyssopifolia*). These five vernal pools are proposed to be included in the Vernal Pool Habitat Conservation Plan and revised Draft City-wide Vernal Pool Management Plan. Two features (8 and 13) are associated with the mima-mound complex,

TABLE III: VERNAL POOL SUMMARY MATRIX

Feature No.	Year Surveyed	Indicator Plants	Fairy Shrimp	Description	Vernal Pool?
1	2003/2004	Absent	Present	Dirt road/trail depression.	No
2	2003/2004	Absent	Present	Dirt bike jump depression.	No
3	2003/2004	Absent	Present	Dirt road/trail depression.	No
4	2003/2004	Absent	Absent	Feature is located outside of Castlerock property. Vehicle rut in a dirt access road.	No
5	2003/2004	Absent	Absent	Feature is located outside of Castlerock property. Vehicle rut in a dirt access road.	No
6	2004/2005	Absent	Present	Dirt road/trail depression.	No
7	2004/2005 2010/2011	Absent	Absent	Emergent wetland with ponding.	No
8	2004/2005 2010/2011	Absent	Absent	Part to the mima-mound complex.	No
9	2004/2005 2010/2011	Present	Absent	100-square-foot depression. Disturbed. Part to the mima-mound complex.*Psilocarphus brevissimus* present.	Yes
10	2004/2005 2010/2011	Present	Absent	Two small tire ruts within a larger depression. Each rut is approximately 15 square feet (for a total of 30 square feet). Within the mima-mound complex. *Psilocarphus brevissimus* present.	Yes
11	2004/2005 2010/2011	Present	Absent	80-square-foot depression. Part to the mima-mound complex.*Deschampsia danthonioides* and *Psilocarphus brevissimus* present.	Yes
12	2004/2005 2010/2011	Present	Absent	15-square-foot depression. Part to the mima-mound complex. *Psilocarphus brevissimus* present.	Yes
13	2004/2005 2010/2011	Absent	Absent	Part to the mima-mound complex.	No
14	2004/2005 2010/2011	Present	Absent	30-square-foot depression. Part to the mima-mound complex. *Psilocarphus brevissimus* and *Deschampsia danthonioides* present.	Yes
15	2010/2011	Present	Absent	Dirt road depression flushed by seasonal drainage. Vernal pool indicator vegetation present.	No
16	2010/2011	Present	Absent	Dirt road depression. Vernal pool indicator vegetation present.	No

but do not contain any vernal pool indicator plants and are not considered vernal pools. The other seven features (1 through 7) are either completely man-made, or are potentially natural features that have been highly disturbed. Features 4 and 5 consist of vehicle ruts within a dirt access road located immediately north of the property. It is noted that two of the man-made, unoccupied features (Features 4 and 5) were originally mapped in 2004 as being part of the Castlerock property, as part of mapping conducted for fairy shrimp surveys. These features were documented in 2004 and 2005 as not supporting listed fairy shrimp or vernal pool indicator plants. However, it was recently determined that these two features were not properly mapped in 2004 and are outside of the Castlerock property. Feature 7 is more accurately described as an emergent wetland or seasonal pond formed by an impoundment of a natural drainage course. This feature is described below as coastal and valley freshwater marsh. Features 1 through 6 do not support a hydrophytic plant community or any vernal pool indicator plant species and are not vernal pools as defined by the City nor are they jurisdictional wetlands according to the Corps and CDFG.

Wet season fairy shrimp surveys were conducted in 2003/2004, 2004/2005, and 2010/2011. As rainfall varied from year to year not all features ponded during the three wet season surveys and therefore not all features were sampled for fairy shrimp during each survey. Four of the sampled features (1, 2, 3, and 6) were found to contain San Diego fairy shrimp, but are not vernal pools because they lack any hydrophytic vegetation and vernal pool plant indicator species. However, as these features support a federally listed endangered species, they are protected and require take authorization pursuant to the Federal ESA.

4.5.2 EMERGENT WETLAND (52440)

A few small wetland areas on site are best described as emergent wetlands and occur in low regions near ephemeral drainages (Drainage B-1 and D). This vegetation community is classified under Oberbauer as 52440 and is dominated by low growing perennial wetland species (e.g. pale spike rush). These areas contain standing water for some time after winter and spring rains, and gradually dry by late spring or summer. The vegetation is characterized by notable amounts of Baltic rush (*Juncus balticus*), Mariposa rush (*Juncus dubius*), and toadrush. Few shrubs are associated with the community, with only scattered individuals of broom baccharis, buckwheat, and decumbent goldenbush around the periphery.

4.5.3 COASTAL AND VALLEY FRESHWATER MARSH (52410)

The northern portion of the site is at the lower end of Quail Canyon. Here, a large earthen berm creates a wetland at the end of the Quail Canyon drainage (Drainage B) where water is present for large portion of the year. This wetland can be best characterized as a coastal and valley freshwater marsh containing Mexican rush, pale spike rush, rabbit-foot grass (*Polypogon monspeliensis*), cattail, alkali heliotrope (*Heliotropium curassavicum*), hyssop loosestrife, curly dock, and sparse mule fat and black willow. This wetland vegetation includes basin feature 7.

5.0 SPECIAL STATUS BIOLOGICAL RESOURCES

The following section describes the special status vegetation communities and special status plant and wildlife species occurring on site.

5.1 Special Status Vegetation Communities

Special status vegetation communities are those communities that are of limited distribution. These communities may also support concentrations of special status plant or wildlife species.

5.1.1 COASTAL SAGE SCRUB

Diegan coastal sage scrub is considered a special status habitat by the CDFG (Holland 1986). This is based on the scarcity of this vegetation community and the number of special status species associated with it. Conservation of coastal sage scrub habitats is an important planning issue throughout southern California. This vegetation community is a MSCP Tier II habitat.

5.1.2 GRASSLAND

The Castlerock site supports native and non-native grasslands. The grassland vegetation sub-communities are recognized by the City of San Diego and other regional resource protection agencies as special status habitat due to the scarcity and the number of special status plant species associated with this vegetation type. Grasslands provide foraging area for many species and are especially valuable for raptors as hunting grounds. Conservation of grasslands is an important planning issue throughout southern California.

Native grasslands are identified as a MSCP Tier I habitat, a designation for the rare upland vegetation communities most valuable for the overall preservation of special status plants and animals. Native grasslands were characterized by areas with 10 percent absolute cover or greater of native grasses (*sensu* Keeler-Wolf et al. 2007, Sawyer et al. 2010). On the Castlerock site the primary cover in the native grasslands is purple needlegrass. Non-native grasslands are classified as MSCP Tier III habitat. Tier III habitat is considered less valuable than native habitat, but still performs many of the same biological functions.

The Castlerock grasslands generally show a lack of disturbance from grazing as evidenced by their species composition. The native vegetation components of these grasslands are discussed in Section 4.2. These grasslands support such vertebrate species as prairie falcon (winter), western meadowlark, grasshopper sparrow, common kingsnake, and western spadefoot. Several grassland-associated invertebrate animal species such as tarantula (*Aphonopelma* spp.) and California ringlet (a butterfly) (*Coenonympha tullia*) occur on the Castlerock site.

5.1.3 JURISDICTIONAL WETLANDS

Wetlands are considered a sensitive biological resource. Disturbance to wetlands is regulated by several agencies at the federal (USACE), State (CDFG), and local (City) levels, all of which have very specific definitions. There is considerable overlap among the various jurisdictions.

As described in Section 4.5.1, sixteen features capable of holding water for at least a short period of time have been identified on site by Glenn Lukos Associates in 2004, 2005, 2006, and 2010 (Exhibit 6). Within these fourteen features, five depressions (totaling 255 square feet or less than 0.01 acre) were identified that support a hydrophytic vegetation component, and at least one vernal pool plant indicator species, and therefore meet the criteria for City of San Diego vernal pools.

Six jurisdictional drainages totaling 1.40 acres were also described by Glenn Lukos Associates (2012). Corps jurisdiction at the site totals approximately 1.40 acre of which 0.72 acre consists of jurisdictional wetlands. CDFG jurisdiction at the site totals approximately 1.37 acre of which approximately 0.70 acre consists of vegetated riparian habitat. City of San Diego jurisdiction at the site totals approximately 0.72 acre of wetlands, of which less than 0.01 acre consists of the five City of San Diego vernal pools. The Corps, CDFG, and City of San Diego jurisdictional wetlands are overlapping with the exception of the five City of San Diego vernal pools.

The Alternative Scenario includes two additional off-site improvements that include jurisdiction areas. Improvements associated with Mast Boulevard include a portion of southern willow scrub occurring at the bottom of a drainage that enters a culvert at Mast Boulevard. The improvements associated with the West Hills Parkway Bridge include an area around the San Diego River containing southern cottonwood willow riparian forest. Corps jurisdiction includes 0.02 acre of wetland located north of Mast Boulevard and 0.30 acre of wetlands associated with the San Diego River at the West Hills Parkway Bridge. CDFG jurisdiction includes 0.02 acre of riparian vegetation located north of Mast Boulevard and 0.43 acre of riparian vegetation associated with the San Diego River at the West Hills Parkway Bridge. The City of San Diego jurisdiction includes 0.02 acre of wetland area located north of Mast Boulevard and the 0.43 acre of wetlands associated with the San Diego River at the West Hills Parkway Bridge.

5.2 Special Status Plant Species

Focused surveys for special status plant species were performed on the Castlerock site in 2001 and augmented by subsequent visits in 2002 through 2005, 2007 through 2012. Focused surveys for special status plant species were performed in off-site improvement areas in 2007 through 2012. The following section provides an overview and discussion about the special status plant species that have been recorded within the boundaries along with those potentially occurring but not detected on the Castlerock site. The locations of special status plant species detected on the Castlerock site are shown on Exhibit 6. Special status plant species detected on site and plant species potentially occurring but not detected on site are listed on Table IV.

5.2.1 Special Status Plant Species Detected On Site

Nine special status plant species have been identified within the boundaries of the Castlerock site during general and focused surveys performed between 2001 and 2012: variegated dudleya (*Dudleya variegata*), San Diego barrel cactus (*Ferocactus viridescens*), Palmer's grapplinghook (*Harpagonella palmeri*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*), San Diego goldenstar (*Bloomeria clevelandii*), ashy spike-moss (*Selaginella bigelovii*), and San Diego County viguiera (*Bahiopsis laciniata*). No State or federally threatened or endangered plant species have been observed on the site or in off-site improvement areas.

MSCP "Covered Species"

Variegated Dudleya
Dudleya variegata

STATUS: CNPS List 1B.2. MSCP Covered. Narrow Endemic under the City of San Diego's MSCP
HABITAT: Perennial herb found in vernal pools, native grassland, chaparral, and cismontane woodland on clay soils.
DISTRIBUTION: Coastal San Diego County and Baja California from near sea level to 1,800 ft (550 m).
OCCURRENCE ON SITE: Seven small patches of variegated dudleya containing approximately 500 plants were observed on site. These vary in size from approximately 50 to 1,000 square feet. The dudleya are usually associated with sparsely vegetated, cobbley areas.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms May to June.

San Diego Barrel Cactus
Ferocactus viridescens

STATUS: CNPS List 2.1. MSCP Covered.
HABITAT: Stem-succulent shrub found in vernal pools, native grassland, coastal sage scrub, and chaparral.
DISTRIBUTION: Coastal San Diego County and Baja California from near sea level to 4,920 ft (1,500 m).
OCCURRENCE ON SITE: San Diego, or coast barrel cactus were observed in coastal sage scrub on south and west-facing slopes and ridges, generally in hard and cobble-laden soil, within the boundaries of the Castlerock site. Seventy-five barrel cactus clusters containing 208 individual cacti are scattered throughout the property. Approximately 89 individual barrel cacti are located within the MHPA prior to adjustment.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round; blooms May to June.

TABLE IV
SENSITIVE PLANT SPECIES DETECTED OR POTENTIALLY OCCURRING AND NOT DETECTED ON THE CASTLEROCK SITE AND OFF-SITE IMPROVEMENT AREAS

The following table lists the known status of special status wildlife species on the Castlerock site and off-site improvement areas and contains all wildlife species occurrences from the California Natural Diversity Database (CNDDB) for the USGS *Cajon, La Mesa, Poway and San Vincente* quadrangles. State ranking codes and USFWS and CDFG status notes are taken directly from the CNDDB. California Native Plant Society (CNPS) rankings are as follows: List 1A- Plants presumed extinct in California; List 1B- Plants rare, threatened, or endangered in California and elsewhere; List 2- Plants rare, threatened, or endangered in California, but more common elsewhere; List 3- Plants about which we need more information; List 4- Plants of limited distribution. CNPS extensions range from 1 to 3 with 1 being the most endangered and 3 being the least endangered.

Species Name	Status				Presence/ Absence
	USFWS	CDFG	MSCP	CNPS	
PLANTS					
Acanthomintha ilicifolia San Diego thorn-mint	FT	SE	Covered	1B.1	Absent
Adolphia californica California adolphia	—	—	—	2.1	Absent
Ambrosia pumila San Diego ambrosia	FE	—	Covered	1B.1	Absent
Arctostaphylos glandulosa ssp. crassifolia Del Mar manzanita	FE	—	Covered	1B.1	Absent
Artemisia palmeri San Diego sagewort	—	—	—	4.2	Absent
Astragalus deanei Dean's milk-vetch	—	—	—	1B.1	Absent
Baccharis vanessae Encinitas baccharis	FT	SE	Covered	1B.1	Absent
Bahiopsis laciniata San Diego County viguiera	—	—	—	4.2	PRESENT ON SITE
Bloomeria clevelandii San Diego goldenstar	—	—	Covered	1B.1	PRESENT ON SITE
Brodiaea orcuttii Orcutt's brodiaea	—	—	Covered	1B.1	Absent
Ceanothus cyaneus Lakeside ceanothus	—	—	Covered	1B.2	Absent
Ceanothus verrucosus Wart-stemmed ceanothus	—	—	Covered	2.2	Absent
Centromadia pungens ssp. *laevis* Smooth tarplant	—	—	—	1B.1	Absent
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	—	—	—	1B.2	Absent
Clarkia delicate Delicate clarkia	—	—	—	1B.2	Absent
Comarostaphylis diversifolia ssp *diversifolia* Summer holly	—	—	—	1B.2	Absent
Dudleya variegata Variegated dudleya	—	—	Covered	1B.2	PRESENT ON SITE
Ericameria palmeri ssp. palmeri Palmer's goldenbush	—	—	Covered	1B.1	Absent

Species Name	Status				Presence/ Absence
	USFWS	CDFG	MSCP	CNPS	
Eryngium aristulatum var. *parishii* San Diego button-celery	FE	SE	—	1B.1	Absent
Ferocactus viridescens San Diego barrel cactus	—	—	Covered	2.1	PRESENT ON SITE
Harpagonella palmeri Palmer's grappling hook	—	—	—	4.2	PRESENT ON SITE
Horkelia truncate Ramona horkelia	—	—	—	1B.3	Absent
Isocoma menziesii var. *decumbens* Decumbant goldenbush	—	—	—	1B.2	PRESENT ON SITE
Lepidium virginicum var. robinsonii Robinson's peppergrass	—	—	—	1B.2	PRESENT ON SITE
Monardella viminea Willowy monardella	FE	SE	Covered	1B.1	Absent
Myosurus minimus ssp. apus Little mousetail	—	—	—	3.1	Absent
Packera ganderi Gander's ragwort	—	SR	—	1B.2	Absent
Pogogyne abramsii San Diego mesa mint	FE	SE	—	1B.1	Absent
Quercus dumosa Nuttall's scrub-oak	—	—	—	1B.1	Absent
Selaginella bigelovii Ashy spike-moss	—	—	—	4.1	PRESENT ON SITE
Texosporium sancti-jacobi Woven-spored lichen	—	—	—	—	Absent

USFWS

FE: Species designated as Endangered under the Federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."

FT: Species designates as Threatened under the Federal Endangered Species Act. Threatened = "species likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range."

FPT: Proposed for federal listing as Threatened

CDFG

ST: Threatened = "a species that, although not presently Threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this Act (California Endangered Species Act)."

SE: Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."

SR: Rare = "although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens."

MSCP

Covered: Species protected by the San Diego County MSCP

San Diego Goldenstar
Bloomeria clevelandii

STATUS: CNPS List 1B.1. MSCP Covered.
HABITAT: Bulbiferous herb found in chaparral, coastal scrub, valley and foothill grassland and around vernal pools.
DISTRIBUTION: San Diego County and Baja California from 164 to 1,525 feet (50-465 meters).
OCCURRENCE ON SITE: This species is relatively abundant and widespread in the northern and central portions of the site. San Diego goldenstar was detected on 14.62 acres within the boundaries of the Castlerock site during NRC's 2010 vegetation mapping and special status plants survey (Exhibit 6). There are an estimated 10,000 San Diego goldenstar plants on the site. There are 9.94 acres of San Diego goldenstar within the MHPA prior to adjustment. The distribution of San Diego goldenstar remained unchanged in 2011 and 2012.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms April to May.

Other Special Status Species

Palmer's Grapplinghook
Harpagonella palmeri

STATUS: CNPS List 4.
HABITAT: Annual herb found in chaparral, coastal scrub and valley/foothill grassland.
DISTRIBUTION: L.A., Orange and San Diego Counties and south through Baja, California; east to Arizona and south through Sonora, Mexico from 66 to 3,132 feet (20-955 meters).
OCCURRENCE ON SITE: Observed on site in the east-central portion of the site on sparsely vegetated, rocky soil in 2003 (pre-fire). This species was not observed post-fire in 2005 through 2011. Palmer's grapplinghook was observed in 2012 in three locations on site with a few hundred individuals.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms March to May.

Graceful Tarplant
Holocarpha virgata ssp. *elongata*

STATUS: CNPS List 4.2.
HABITAT: Annual herb found in chaparral, woodlands, coastal scrub, and grasslands.
DISTRIBUTION: Endemic to California in Orange, San Diego, and Riverside Counties, from 200 to 3600 feet (60-1100 meters).
OCCURRENCE ON SITE: Common in native and nonnative annual grasslands, disturbed coastal sage scrub, vernal marshes, and vernal pools, especially in the northern and central part of the site.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms May to November.

Decumbent Goldenbush
Isocoma menziesii var. *decumbens*

STATUS: CNPS List 1B.2.
HABITAT: Shrub found in coastal scrub and chaparral.
DISTRIBUTION: California in Orange and San Diego Counties, and Baja California, Mexico, from 16 to 1000 feet (5-305 meters).
OCCURRENCE ON SITE: Common on ridges, slopes, and mesas with sandy soil in disturbed coastal sage scrub throughout the site. Occasional individuals also encountered in other vegetation types.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms April to November.

Robinson's Peppergrass
Lepidium virginicum var. *robinsonii*

STATUS: CNPS List 1B.2.
HABITAT: Annual herb found in coastal scrub and chaparral.
DISTRIBUTION: Santa Barbara County, southward through coastal and inland Southern California, to Baja California, Mexico, from 3 to 2900 feet (1-885 meters).
OCCURRENCE ON SITE: One population of about 500 plants (0.17 acres) within the MHPA in the central part of the site observed in 2010 on a rocky, south-facing slope with disturbed coastal sage scrub.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms from January to July.

Ashy Spike-moss
Selaginella bigelovii

STATUS: CNPS List 4.1.
HABITAT: Rhizomatous herb found in chaparral and coastal scrub.
DISTRIBUTION: Orange, San Diego, and Riverside Counties, south through Baja California, Mexico, from 65 to 2100 feet (20-640 meters).
OCCURRENCE ON SITE: This species is common, and forms the primary component of cryptogamic crusts in sparsely vegetated undisturbed coastal sage scrub throughout the northern and central parts of the site. The species also occurs in small patches with some regularity in disturbed coastal sage scrub in the northern and central parts of the site.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Spring and summer. This species is especially prevalent following years of high rainfall.

San Diego County Viguiera
Bahiopsis laciniata

STATUS: CNPS List 4.2.
HABITAT: Shrub found in chaparral and coastal scrub.
DISTRIBUTION: California in Orange and San Diego Counties, and Baja California and Sonora, Mexico, from 200 to 2460 feet (60-750 meters).
OCCURRENCE ON SITE: Several plants are located near boulder outcrops in coastal sage scrub in the southwestern portion of the site and in the south-central portion of the site in disturbed coastal sage scrub.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Blooms May to November.

5.2.2 Special Status Plants Potentially Occurring but Not Detected On Site

Special status plant species that potentially occur on site but were not recorded are listed in Table IV.

5.3 Special Status Wildlife Species

NRC's focused surveys were supplemented by a review of available information that contained lists of special status wildlife occurring in the San Diego region. The following section provides an overview and discussion of the special status wildlife species that have been recorded within the boundaries of the Castlerock site. Special status wildlife species detected along with those potentially occurring but not detected on site are listed in Table V.

5.3.1 Special Status Wildlife Species Detected On Site

A total of 16 species of special status wildlife were observed and documented within the boundaries of the Castlerock site during general and focused surveys performed between 2001 and 2012. Two additional species, least Bell's vireo and southwestern willow flycatcher, were observed in an off-site improvement area. Occurrence data and status on site for these species is summarized below.

TABLE V
SENSITIVE WILDLIFE SPECIES DETECTED OR POTENTIALLY OCCURRING AND NOT DETECTED ON THE CASTLEROCK SITE AND OFF-SITE IMPROVEMENT AREAS

The following table lists the known status of special status wildlife species on the Castlerock site and off-site improvement areas and contains all wildlife species occurrences from the California Natural Diversity Database (CNDDB) for the USGS *Cajon, La Mesa, Poway and San Vincente* quadrangles. State ranking codes and USFWS and CDFG status notes are taken directly from the CNDDB. Some additional species observed on site are included.

Species Name	Status			Status ON SITE and OFF SITE
	USFWS	CDFG	MSCP	
INVERTEBRATES				
Branchinecta sandiegoensis San Diego fairy shrimp	FE	—	—	PRESENT ON SITE
Euphydryas edita quino Quino Checkerspot butterfly	FE	—	—	Absent
Lycaena hermes Hermes copper butterfly	—	—	—	Absent
Streptocephalus woottoni Riverside fairy shrimp	FE	—	—	Absent
AMPHIBIANS				
Anaxyrus californicus Arroyo toad	FE	SSC	Covered	Absent
Spea hammondi Western spadefoot	—	SSC	—	PRESENT ON SITE
REPTILES				
Anniella pulchra pulchra Silvery legless lizard	—	SSC	—	Absent
Apisdoscelis hyperythrus Belding's orange-throated whiptail	—	SSC	Covered	PRESENT ON SITE
Crotalus ruber Red diamond rattlesnake	—	SSC	—	PRESENT ON SITE
Phrynosoma blainvillei Coast horned lizard	—	SSC	Covered	PRESENT ON SITE
Plestiodon skiltonianus interparietalis Coronado skink	—	SSC	—	PRESENT ON SITE
Salvadora hexalepsis virqultea Coast patch-nosed snake	—	SSC	—	Absent
Thamnophis hammondii Two-striped garter snake	—	SSC	—	PRESENT ON SITE
BIRDS				
Accipiter cooperii Cooper's hawk	—	—	Covered	PRESENT ON SITE
Aimophila ruficeps ssp. canescens S. Calif. rufous-crowned sparrow	—	—	Covered	PRESENT ON SITE
Ammodramus savannarum Grasshopper sparrow	—	SSC	—	PRESENT ON SITE
Aquila chrysaetos Golden eagle	—	—	Covered	Absent
Athene cunicularia Burrowing owl	—	SSC	Covered	Absent

Campylorhyncus brunneicapillus ssp. couesi Coastal cactus wren	—	SSC	Covered	Absent
Circus cyaneus Northern harrier	—	SSC	Covered	PRESENT ON SITE
Dendroica petechia brewsteri Yellow warbler	—	SSC	—	PRESENT ON AND OFF SITE
Elanus leucurus White-tailed kite	—	Protected	—	PRESENT ON SITE
Empidonax trailii ssp. extimus Southwestern willow flycatcher	FE	CE	Covered	PRESENT OFF SITE
Icteria virens Yellow-breasted chat	—	SSC	—	Absent
Ixobrychus exilis Least bittern	—	SSC	—	Absent
Polioptila californica californica Coastal California gnatcatcher	FT	SSC	Covered	PRESENT ON SITE
Vireo bellii pusillus Least Bell's vireo	FE	CE	Covered	PRESENT OFF SITE
MAMMALS				
Chaetodipus californicus femoralis Dulzura pocket mouse	—	SSC	—	Absent
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	—	SSC	—	Absent
Choeronycteris mexicana Mexican long-tongued bat	—	SSC	—	Absent
Eumpos perotis californicus Western mastiff bat	—	SSC	—	Absent
Lasiurus blossevillii Western red bat	—	SSC	—	Absent
Lasiurus xanthinus Western yellow bat	—	SSC	—	Absent
Lepus californicus bennettii San Diego black-tailed jackrabbit	—	SSC	—	PRESENT ON SITE
Neotoma lepida itermedia San Diego desert woodrat	—	SSC	—	Absent
Nyctinomops femorosacca Pocketed free-tailed bat	—	SSC	—	Absent
Nyctinomops macrotis Big free-tailed bat	—	SSC	—	Absent
Odocoileus hemionus fuliginata Southern mule deer	—	—	Covered	PRESENT ON SITE

USFWS

FE: Species designated as Endangered under the Federal Endangered Species Act. Endangered = “any species in danger of extinction throughout all or a significant portion of its range.”

FT: Species designates as Threatened under the Federal Endangered Species Act. Threatened = “species likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.”

FPT: Proposed for federal listing as Threatened

CDFG

ST: Threatened = "a species that, although not presently Threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this Act (California Endangered Species Act)."

SE: Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."

SSC: Species of Special Concern

MSCP

Covered: Species protected by the San Diego County MSCP

Species Listed as Federally Threatened or Endangered

San Diego Fairy Shrimp
Branchinecta sandiegonensis

STATUS: Federal Endangered.
HABITAT: Vernal pools.
DISTRIBUTION: Orange and coastal San Diego counties south to nw. Baja California.
OCCURRENCE ON SITE: A low number of San Diego fairy shrimp were observed by GLA in 2005 within four man-made road ruts. All four road ruts are located along the eastern site boundary.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: When pools are full, December to May.

California Gnatcatcher
Polioptila californica

STATUS: Federal Threatened. MSCP Covered.
HABITAT: Principally, the various associations of coastal sage scrub (Venturan, Riversidian, Diegan, Maritime, etc.), but also nests in chamise chaparral, especially where it occurs in association with sage scrub. Occasionally uses other habitats outside the breeding season.
DISTRIBUTION: Southeastern Ventura County (locally), Los Angeles County (locally, primarily in the southern portion), extreme southwestern San Bernardino County, western Riverside County, Orange County, and San Diego County west of the mountains. Also found throughout much of Baja California.
OCCURRENCE ON SITE: California gnatcatchers have been observed within the boundaries of the Castlerock site during various focused and incidental surveys performed by NRC, from 2000 to 2012. Successful nesting was observed during the 2002, 2010, and 2012 surveys. Two pairs of California gnatcatchers were observed on site during surveys conducted in 2010. In 2012, four occupied California gnatcatcher territories were observed – two in the southernmost portion of the site, one in a canyon in the north near the western boundary, and one in the large northern drainage.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round, but mid-March through June for breeding.

MSCP "Covered Species"

Coast Horned Lizard
Phrynosoma blainvillei

STATUS: California Species of Special Concern, 2nd Priority; California Protected. MSCP Covered.
HABITAT: Generally occurs in sage scrub and chaparral, but can also be found in coniferous forest and broadleaf woodland. It is usually found in sandy areas, especially where harvester ants are found.
DISTRIBUTION: West of the Sierra Nevada, Coast, and Peninsula ranges in California from Butte County south to the Mexican border; also throughout most of Baja California.
OCCURRENCE ON SITE: Observed in coastal sage scrub on site in 2003 and 2005.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: March to June.

Belding's Orange-throated Whiptail
Aspidoscelis hyperythrus beldingi

STATUS: California Species of Special Concern, 2nd Priority. MSCP Covered
HABITAT: Open sandy areas associated with floodplains, as well as rocky areas in nearby brush and woodland.
DISTRIBUTION: North of Baja California found in western San Diego County, Orange County, western Riverside County, and extreme southwestern San Bernardino County.
OCCURRENCE ON SITE: Individuals have been observed along dirt trails near coastal sage scrub in the southern portion of the site in 2005-2012.

OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: March to August.

Cooper's Hawk
Accipiter cooperi

STATUS: Former California Species of Special Concern. MSCP Covered.
HABITAT: Nests primarily in fairly dense oak and riparian woodlands.
DISTRIBUTION: Throughout most of U.S. In southern California it is a fairly common winter visitor and uncommon summer resident west of the deserts.
OCCURRENCE ON SITE: Individuals have been observed on site in 2003 through 2012, mostly passing through, or hunting within trees and in open to dense sage scrub. There are no suitable nesting conditions on site.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round, but March to August for breeding.

Southern California Rufous-crowned Sparrow
Aimophila ruficeps canescens

STATUS: Former California Species of Special Concern. MSCP Covered.
HABITAT: Most foothill slopes and ridges with low-growing shrub cover, typically in coastal sage scrub and non-arborescent types of chaparral. Inhabits rocky slopes often intermixed with grassy areas.
DISTRIBUTION: Year-round resident west of the deserts from Ventura County south into Baja California.
OCCURRENCE ON SITE: A year-round resident known to nest in the area and observed in coastal sage scrub on site.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round, but March to May for breeding.

Northern Harrier
Circus cyaneus

STATUS: California Species of Special Concern, 2nd Priority. MSCP Covered.
HABITAT: Grasslands, fresh- and brackish-water marshes.
DISTRIBUTION: Throughout most of North America, including all of California below the mountains; however, breeding localities in Southern California are sparse.
OCCURRENCE ON SITE: Observed hunting over grassland and sage scrub habitats on site in 2005, 2007, and 2012. There are no suitable areas for nesting on site.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round, but May to August for breeding.

Southwestern Willow flycatcher
Empidonax traillii

STATUS: Federal Endangered, California Endangered, MSCP Covered.
HABITAT: Historically in willows riparian areas and shrubby swamps.
DISTRIBUTION: Sierra Nevada and along the Kern, Santa Margarita, San Luis Rey, and Santa Ynez rivers in Southern California. Throughout the West outside of California.
OCCURRENCE ON SITE: Not observed on site. No suitable habitat is present.
OCCURRENCE OFF-SITE: A single migrant southwestern willow flycatcher observed within 300 feet of the West Hills Parkway Bridge off-site improvement area during focused surveys in 2008. Two southwestern willow flycatchers were also observed approx. 500 feet and further from the bridge in 2011. In 2012, a single migrant was observed again within 100 feet of the bridge. These observations have not shown any breeding behavior or establishment of territories that would suggest breeding within 500 feet of the West Hills Parkway Bridge.
OPTIMAL SURVEY PERIOD: May 15 to July 17.

Least Bell's Vireo
Vireo bellii pusillus

STATUS: Federal Endangered; California Endangered. MSCP Covered.
HABITAT: Inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Typically associated with willow, cottonwood, baccharis, wild blackberry, or mesquite in desert localities.
DISTRIBUTION: Formerly a common and widespread summer resident below about 600 m (2000 ft) in western Sierra Nevada, throughout Sacramento and San Joaquin valleys, and in the coastal valleys and foothills from Santa Clara Co. south. Also was common in coastal southern California from Santa Barbara Co. south, below about 1200 m (4000 ft) east of the Sierra Nevada, in Owens and Benton valleys, along Mojave River and other streams at western edge of southeastern deserts, and along entire length of Colorado River. Has declined drastically or vanished entirely throughout California range in recent decades, apparently from cowbird parasitism and habitat destruction and degradation.
OCCURRENCE ON SITE: Not observed on site. No suitable habitat is present.
OCCURRENCE OFF-SITE: Approximately two pairs observed within 500 feet of the West Hills Parkway Bridge off-site improvement area during focused surveys in 2008, 2009, and 2010. In 2011,four pairs were observed as close as 100 feet from proposed bridge work. In 2012, one least Bell's vireo male was observed on two survey visits within 300 feet of the bridge and did not establish a territory.
OPTIMAL SURVEY PERIOD: April 10 to July 31.

Southern Mule Deer
Odocoileus hemionus fuliginata

STATUS: MSCP Covered.
HABITAT: Many habitats, including coastal sage scrub, chaparral, oak woodland, and grasslands.
DISTRIBUTION: Widespread.
OCCURRENCE ON SITE: Observed on site in 2003.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round.

Other Special Status Species

Western Spadefoot
Spea hammondi

STATUS: California Species of Special Concern, 2nd Priority; California Protected.
HABITAT: Arid and semi-arid regions in the lowlands and foothills (below 4,500 feet) in washes, river floodplains, alluvial fans, playas, and alkali flats.
DISTRIBUTION: Primarily in Central Valley and adjacent foothills, and in the Coast Ranges from Redding to northwest Baja California.
OCCURRENCE ON SITE: Recorded on site in 2003.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Following relatively warm rains in late winter, spring, and fall (Jennings and Hayes, 1994).

Coronado Skink
Eumeces skiltonianus interparietalis

STATUS: California Species of Special Concern, 3rd Priority.
HABITAT: Grassland, sage scrub, open chaparral, and woodlands, often in rocky areas as well as near streams.
DISTRIBUTION: This subspecies in not recognized by Stebbins (2004), but is incorporated in with nominate *E. s. skiltonianus.* The nominate subspecies is found west of the Rocky Mtns. from s. British Columbia to n. Baja California. *E. s. interparietalis* is restricted to Riverside and San Diego counties and n. Baja California.
OCCURRENCE ON SITE: Individuals have been found under rocks within coastal sage scrub, and under boards within the larger artificial impoundment during surveys in 2003.

OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Diurnal during warmer months.

Red Diamond Rattlesnake
Crotalus ruber

STATUS: California Species of Special Concern
HABITAT: Desert scrub, coastal sage scrub, chaparral, and woodland, often in association with rock outcrops. Occasionally occurs in grasslands and perimeter of cultivated fields.
DISTRIBUTION: Coastal San Diego County to eastern slope of mountains and north through western Riverside County into southernmost San Bernardino County, from sea level to approximately 1,200 meters.
OCCURRENCE ON SITE: This species was observed in coastal sage scrub on site during focused wildlife studies between 2007 and 2012.
OCCURRENCE OFF-SITE: Not detected off-site.
OPTIMAL SURVEY PERIOD: March to June.

Two-striped Garter Snake
Thamnophis hammondii

STATUS: California Species of Special Concern, 1st Priority; California Protected.
HABITAT: Perennial and intermittent streams having rocky beds and bordered by willow thickets or other dense vegetation. May also inhabit shallow rivers and stockponds bordered by thick riparian vegetation.
DISTRIBUTION: Coastal slope from Monterey County to n. Baja California from near sea level to 4,500 ft (1,370 m) elevation.
OCCURRENCE ON SITE: Individuals have been in the southeastern portion of the site and in the northern marsh wetland in 2008.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: March to October.

Grasshopper Sparrow
Ammodramus savannarum

STATUS: California Species of Special Concern, 2nd priority.
HABITAT: Grasslands with scattered small shrubs for singing perches.
DISTRIBUTION: Throughout much of the U.S., including California.
OCCURRENCE ON SITE: Observed foraging within grasslands on site. The site contains suitable breeding habitat, although no breeding activity was observed.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: April to July.

Yellow Warbler
Dendroica petechia

STATUS: California Species of Special Concern, 2nd Priority (breeding populations only).
HABITAT: For breeding, usually riparian woodlands, but occasionally in montane chaparral and coniferous forests with dense ceanothus and manzanita understory.
DISTRIBUTION: Throughout most of North America. In California, formerly bred nearly throughout in appropriate habitat; now restricted mostly to northern California and locally in southern California in Coast Ranges.
OCCURRENCE ON SITE: Observed on occasion in 2003 and 2005 within the small patches of willows, mule fat and elderberry associated with the two artificial seasonal impoundments. There are no suitable nesting conditions on site.
OCCURRENCE OFF-SITE: Observed within the riparian forest adjacent to the West Hills Parkway Bridge.
OPTIMAL SURVEY PERIOD: For breeding, May to August.

White-tailed Kite
Elanus leucurus

STATUS: California Fully Protected Species.
HABITAT: Requires open habitats such as grasslands, croplands and marshes; nests primarily in riparian areas with sycamores, oaks, willows and cottonwoods, and hunts in adjacent open spaces.
DISTRIBUTION: Uncommon to locally fairly common resident along the coastal slope of California. There has been an apparent geographic range expansion to the north and east in recent decades. Populations declined to very low levels early in the 20th Century but had risen substantially by the mid-1970s. Population sizes locally continue to fluctuate however, perhaps in large part in synchrony with fluctuating cricetine rodent populations. The instability in population sizes indicates that the kites may continue to be affected by human-induced environmental changes in ways that are not fully understood.
OCCURRENCE ON SITE: Observed foraging on site and observed nesting outside proposed grading limits in 2005, 2007, 2011, and 2012.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round, but February to May for breeding.

San Diego Black-tailed Jackrabbit
Lepus californicus bennettii

STATUS: California Species of Special Concern.
HABITAT: Prefers open areas, typically occurring in alluvial sage scrub and open sage scrub.
DISTRIBUTION: Occurs in coastal southern California from approximately Santa Barbara County south into Baja California.
OCCURRENCE ON SITE: Individual black-tailed jackrabbits have been encountered in coastal sage scrub vegetation on numerous surveys.
OCCURRENCE OFF-SITE: Not observed at off-site improvement areas.
OPTIMAL SURVEY PERIOD: Year-round.

5.3.2 SPECIAL STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING BUT NOT DETECTED ON SITE

Special status wildlife species that potentially occur on site but not detected are listed in Table V.

5.4 Wildlife Movement Corridors

The site is located north of Mission Trails Regional Park and west of Santee Recreation Lakes. Primary movement corridors between these two natural open space areas are associated with the drainage of the San Diego River. This corridor is entirely outside the site. Various smaller linkages between the site and Santee Lakes occur via smaller drainages that pass through the site such as Quail Canyon Creek and to Mission Trails via Little Sycamore Creek and the drainage of Spring Canyon. Movement to the west of the site toward open space area associated with Miramar Air Station is constrained by the rugged topography and Sycamore Canyon Landfill.

6.0 IMPACTS OF THE PROPOSED PROJECT

The following section summarizes the expected impacts of the proposed Project on biological resources and interprets these impacts within the regional context. Impacts associated with the Alternative Scenario are discussed below in Section 9.0.

6.1 Impacts to Vegetation Communities

Proposed development on the Castlerock site, including portions of BMZ-2, would result in the disturbance to approximately 108.72 acres of on site native and non-native vegetation communities. Brush Management Zone 2 areas total 9.08 acres on site with 6.54 acres within the development area. Per the City of San Diego Biology Guidelines, BMZ-2 is treated as impact neutral which does not require mitigation and cannot be used as mitigation land. (Table VI). Approximately 102.18 acres of vegetation on site would be removed by the proposed Project and 94.92 acres of the site would be preserved as natural open space within the MHPA. Approximately 2.54 acres of BMZ-2 impact neutral vegetation

TABLE VI
APPROXIMATE ACREAGE OF ON SITE VEGETATION COMMUNITY IMPACTS AND REQUIRED MITIGATION

MHCP Tier	Habitat (Vegetation Community)	Total Habitat Outside MHPA	Total Habitat Inside MHPA	Impacts Outside MHPA	Impacts Inside MHPA	Total Impacts	Impact Neutral Brush Mgmt. Zone 2*	Mitigation Ratio for Impacts Outside MHPA	Mitigation Ratio for Impacts Inside MHPA	Required Mitigation Inside MHPA‡
Wetlands	Vernal Pool	<0.01	0.00	0.00	0.00	0.00	0.00	2:1	2:1	0.00
	Emergent Wetland	0.08	0.10	0.07	0.00	0.07	0.05	2:1	2:1	0.14
	Coastal and Valley Freshwater Marsh	0.51	0.03	0.00	0.00	0.00	0.00	2:1	2:1	0.00
	Sub Total (Wetlands)	**0.59**	**0.13**	**0.07**	**0.00**	**0.07**	**0.05**	**2:1**	**2:1**	**0.14**
Tier I	Native Grasslands	15.28	4.27	13.12	0.34	13.46	1.19	1:1	2:1	13.80
	Sub Total (Tier I)	**15.28**	**4.27**	**13.12**	**0.34**	**13.46**	**1.19**	**1:1**	**2:1**	**13.80**
Tier II	Disturbed Coastal Sage Scrub (CSS)	15.02	44.67	13.14	2.78	15.92	0.42	1:1	1:1	15.92
	CSS – Coastal Form	9.67	11.99	8.77	2.70	11.47	0.86	1:1	1:1	11.47
	Baccharis-dominated CSS	5.17	0.59	4.61	0.00	4.61	0.00	1:1	1:1	4.61
	Sub Total (Tier II)	**29.86**	**57.25**	**26.52**	**5.48**	**32.00**	**1.28**	**1:1**	**1:1**	**32.00**
Tier IIIB	Non-native Grasslands	53.89	29.46	44.36	3.23	47.59	3.73	0.5:1	1:1	25.41
	Sub Total Tier (IIIB)	**53.89**	**29.46**	**44.36**	**3.23**	**47.59**	**3.73**	**0.5:1**	**1:1**	**25.41**
Tier IV	Eucalyptus Woodlands	1.46	0.00	1.46	0.00	1.46	0.00	0:1	0:1	0.00
	Disturbed/Developed	8.07	3.38	7.22	0.38	7.60	0.29	0:1	0:1	0.00
	Sub Total (Tier IV)	**9.53**	**3.38**	**8.68**	**0.38**	**9.06**	**0.29**	**0:1**	**0:1**	**0.00**
	TOTAL	**109.15**	**94.49**	**92.75**	**9.43**	**102.18**	**6.54**	**---**	**---**	**71.35**

* Only the Brush Management Zone 2 acreage found within the development area is displayed on the table.
‡ Required mitigation was calculated using ratios from the Biology Guidelines for impacts in and out of the MHPA. It is assumed that all mitigation will be inside the MHPA.

within the MHPA on site would not be used as mitigation land. The majority (92.75 acres) of the Project impacts would occur outside the MHPA; however, 9.43 acres of grading for the Project would be done inside the MHPA as described in Table VI and shown in Exhibit 7. Additional impacts to vegetation within the MHPA may occur due to landslide remediation as discussed in Section 6.1.1. An MHPA adjustment is proposed and is discussed below in Section 8.0.

The proposed development area on site would include impacts to emergent wetland (0.07 acre), native grasslands (13.46 acres), coastal sage scrub vegetation (32.00 acres), non-native grasslands (47.59 acres), and 9.06 acres of various other communities such as eucalyptus woodlands and disturbed/developed areas. Impacts to basin feature 16 were included in the coastal sage scrub impacts and mitigation.

Mitigation for these losses would be provided within the East Elliot Community Plan Area on property owned by the Project applicant, according to established MSCP mitigation ratios as specified within the San Diego Municipal Code *Biology Guidelines* (City of San Diego 2009).

6.1.1 POTENTIAL IMPACTS ASSOCIATED WITH LANDSLIDE REMEDIATION

A landslide is located on the edge of grading in the north-central portion of the site and buttressing may be needed to stabilize the known extent of landslide areas on the site. Additional testing would be done prior to grading. Should it be determined that the landslide extends further into the open space than anticipated, temporary impacts within the MHPA due to grading necessary to stabilize landslides might remove between 1.5 and 5 acres of coastal sage scrub and/or non-native grassland. San Diego goldenstar is located in a portion of this area; however the size of the affected population cannot be quantified until further testing is done prior to grading. The approximate location of the landslide remediation area and potential San Diego goldenstar mitigation sites are shown on Exhibit 8. The affected landslide area would be restored to its existing condition after remediation was completed. A restoration plan, including site preparation, plant palette, planting methods, success criteria and monitoring and maintenance requirements would be done to guide the restoration.

6.2 Indirect Effects

Indirect effects can occur whenever human activity is introduced into a natural area. These effects include those due to increased run-off, trampling and removal of plant cover due to hiking, biking and other human activities, increased presence of toxins, increased nighttime light levels, and redirection or blockage of wildlife movement, increased levels of non-native and invasive plants. The MSCP design anticipated such effects. Certain measures are required to be incorporated in the design of projects adjacent to the MHPA to reduce indirect impacts to a level that is less than significant. The proposed Castlerock Project has been designed according to the Land Use Adjacency Guidelines of the MSCP. Specifically, Project grading and construction has been minimized to avoid direct and indirect effects to the MHPA. Design features already included in the Project are described below. Additional impacts could occur due to Project construction. These possible indirect effects are listed below.

6.2.1 Drainage

Runoff from the completed Project could result in impacts to downstream areas off-site and to the lot containing the vernal pools. Project runoff would not enter the MHPA as it is located upstream of and at a higher elevation than the MHPA. The Project has been designed to insure that impacts due to runoff would be avoided. All drainage from proposed roads and structures associated with the Castlerock Project would flow into a storm drain system. Some manufactured slopes would drain into the lot on which the vernal pools are located. The Project design includes drainage swales at the bottom of these slopes that would intercept runoff and carry it around the vernal pools, ensuring that potential impacts are avoided. Solid fencing along the back of lots that are above the vernal pool preserve would ensure the irrigation would not enter the vernal pools. These design features ensure that significant indirect effects due to drainage would not occur.

Vernal Pool Preserve

Jurisdictional Mitigation Area

NAP

Vernal Pool
Proposed Restoration Vernal Pool
Watershed
California Gnatcatcher (2012)
Palmer's Grapplinghook (2012)
0 80 160 320 Feet

NOTE: Other sensitive species observed throughout the site but not included on this map include graceful tarplant, ashy spike-moss, decumbant goldenbush, San Diego County viguiera, Coronado skink, coast horned lizard, grasshopper sparrow, So. California rufous-crowned sparrow, yellow warbler, Cooper's hawk, northern harrier, white-tailed kite, San Diego black-tailed jackrabbit, and southern mule deer

Natural Resource Consultants. 9 October 2012. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh7_ProposedBiologicalImpacts_NRC07_20121009.mxd

- Site Boundary
- Impact Area
- Brush Management Zone 1
- Brush Management Zone 2
- Existing MHPA Boundary
- Proposed MHPA Boundary
- Corps and CDFG Non-Wetland (GLA)
- Corps and CDFG Wetland (GLA)

Vegetation Type
- Non-Native Grasslands
- Native Grasslands
- Baccharis-Dominated Coastal Sage Scrub
- Coastal Sage Scrub - Coastal Form
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Eucalyptus Woodlands
- Disturbed

Sensitive Wildlife
- Western spadefoot (2003)
- Belding's orange-throated whiptail (2012)
- Northern red rattlesnake (2012)
- Two-striped garter snake (2008)
- California Gnatcatcher (2012)
- San Diego fairy shrimp (GLA 2004 & 2005)

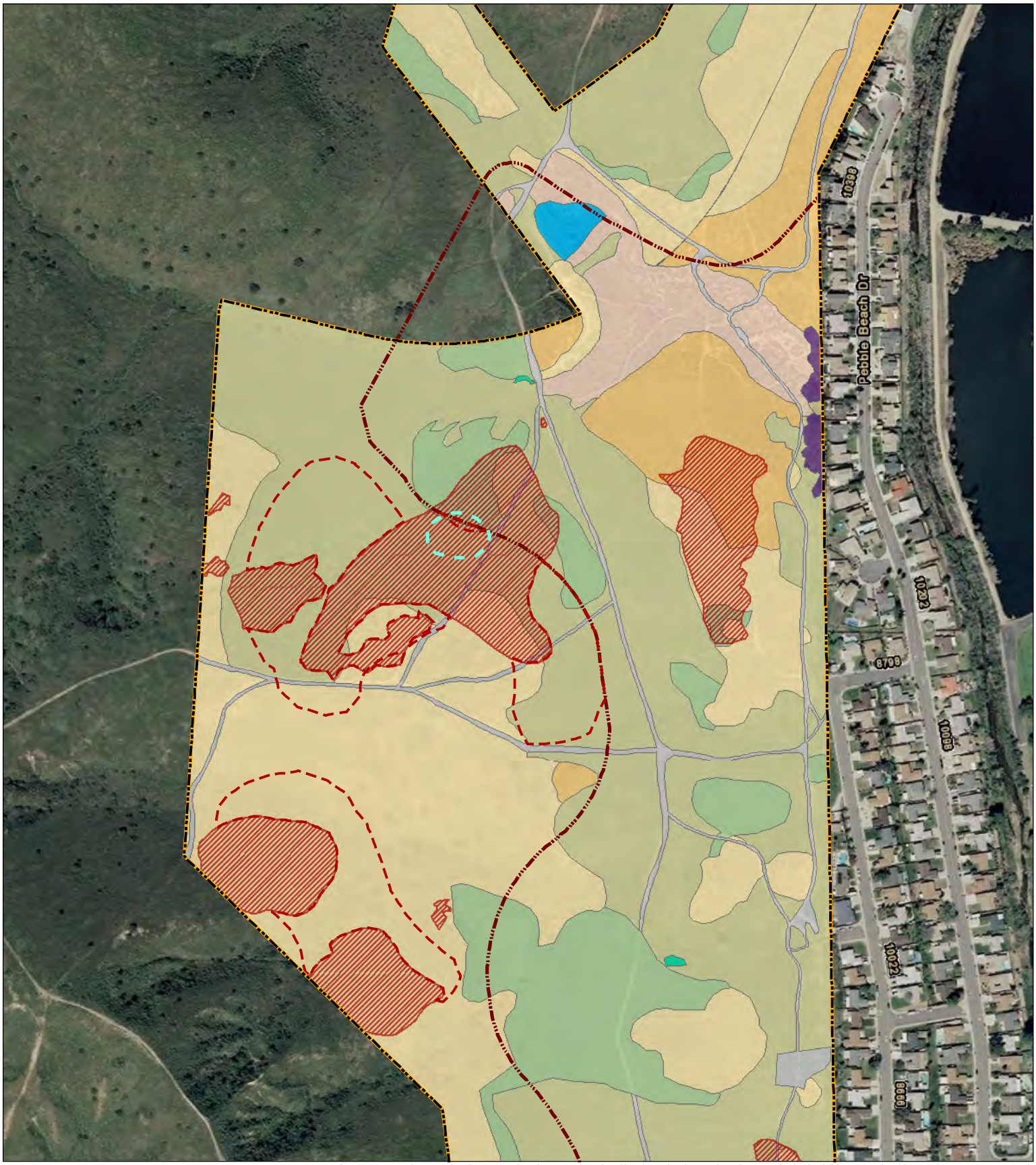
Sensitive Plants
- San Diego barrel cactus (2012)
- Variegated dudleya (2012)
- Palmer's Grapplinghook (2012)
- San Diego goldenstar (2012)
- Robinson's peppergrass (2012)

Basin Features (GLA)
- Emergent Wetland
- Non-Vernal Pool
- Non-Vernal Pool, SD fairy shrimp observed
- Vernal Pool

N W E S

0 260 520 1,040 ft
1:6,133 1 inch = 511 feet

Exhibit 7: Proposed Project Biological Impacts
Castlerock | San Diego County, California



Natural Resource Consultants. 10 October 2012. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh8_landslide_rem_and_goldenstar_NRC02_20121010.mxd

- Site Boundary
- Approximate Landslide Remediation Area
- Existing MHPA Boundary
- Potential Areas for Goldenstar Transplantation
- San Diego Goldenstar
- Annual grassland
- Native Grassland
- Baccharis-dominated CSS
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Eucalyptus Woodland
- Disturbed

N W E S

0 175 350 700 ft

1:4,669 1 inch = 389 feet

Exhibit 8: Landslide Remediation and Goldenstar Mitigation Areas

Castlerock | San Diego County, California

6.2.2 Toxics

The Project would not result in the production of any toxics, stock-piling of manure or agricultural products, or any chemicals that could adversely affect natural resources within the MHPA. There are no indirect effects of toxic substances on any biological resources.

6.2.3 LIGHTING

All lighting associated with the Project would be shielded and directed away from the urban/MHPA edge. Remnant night-lighting would not be a nuisance to surrounding wildlife.

6.2.4 Noise

Sources of urban noise (Project construction, daily traffic) associated with the Project would not exceed 60 dB on average and does not represent a significant nuisance to surrounding wildlife resources. The unavoidable increases in ambient noise levels would not be a significant impact to surrounding biological resources.

Impacts due to construction noise might be significant and would require mitigation.

6.2.5 BARRIERS

The Castlerock Project is not an obstruction to any habitat linkages for large or medium-sized mammals, birds, or reptiles. Further, site development would not adversely affect wildlife movement between or within any MHPA segment. Barriers such as low fencing and trail markers may be incorporated into the Project design to limit and control public access into the MHPA. The lot containing the vernal pools would be fenced and signed to prevent intrusion by residents, and irrigation overspray. These measures which are incorporated into the Project design ensure that indirect effects due to barriers and increased human presence would not occur.

6.2.6 INVASIVE PLANT SPECIES

The landscape plant palette for the proposed slopes adjacent to the MHPA would include only native and low-fuel plant species. The Proposed Project includes Conceptual Landscape Plan which is incorporated into the Project design to ensure that indirect effects due to invasive species would not occur. The Project landscape plans do not include any invasive (non-native weedy species) plants in areas adjacent to the MHPA or the vernal pool preserve. These measures which are incorporated into the Project design ensure that indirect effects due to invasive species would not occur.

6.2.7 BRUSH MANAGEMENT

The impacts of fuel modification for BMZ-2 have been included as impact neutral for this Project and include a total of 9.08 acres on and off-site (Exhibit 7). The approximately 0.05 acres of the BMZ-2 found just off-site was included in Table VI to maintain consistency with the EIR and other Project documents. Brush Management is compatible with the biological objectives of the MSCP (see Section 1.4.1 Land Use Considerations of the MSCP) and all brush management would be implemented and maintained according to the standards of the MSCP. The indirect effects of brush management are negligible and are not a significant impact to any biological resources. No brush management is proposed within the vernal pool preserve.

6.3 Impacts to Special Status Biological Resources

The Proposed Project would result in direct impacts to two species listed as threatened or endangered by the USFWS. Impacts to the California gnatcatcher would be mitigated according to the conservation measures associated with the MSCP. Mitigation, consisting of replacement/restoration of habitat, is proposed for impacts to San Diego fairy shrimp. This mitigation would ultimately need to be approved by Corps and USFWS to receive take authorization under the ESA.

The Project would also affect several plant and wildlife species that are listed as "Covered Species" under the MSCP. Several other plant and wildlife species that are not listed as federally or State threatened or endangered but are considered special status species would be affected by removal of vegetation associated with the Proposed Project. These impacts are not significant.

6.3.1 IMPACTS TO SPECIAL STATUS VEGETATION COMMUNITIES

As previously described the existing wetlands, coastal sage scrub, and native and non-native grasslands are special status vegetation communities. The removal of these communities would be significant prior to mitigation. Impacts to vernal pools are described in Section 6.4.

6.3.2 IMPACTS TO SPECIAL STATUS PLANTS

Nine special status plant species were observed on site. Based on 2005 and 2007 through 2012 mapping, it is anticipated that the Proposed Project would impact eight of these species: San Diego barrel cactus, variegated dudleya, graceful tarplant, Palmer's grapplinghook, decumbent goldenbush, ashy spike-moss, San Diego County viguiera and San Diego goldenstar.

Graceful tarplant, decumbent goldenbush, ashy spike-moss, and San Diego County viguiera were found in large numbers throughout the site. Palmer's grappling hook was observed in three locations on site during 2012 surveys. These species are listed under CNPS as rare, but are not covered by the MSCP and have no federal or State status. The MSCP does, however, conserve significant amounts of habitat for these species. Impacts to these species are not significant.

Three species are Covered by the MSCP, San Diego barrel cactus, variegated dudleya, and San Diego goldenstar, and one of these species, variegated dudleya, is a narrow endemic. Impacts to San Diego barrel cactus and San Diego goldenstar outside the MHPA are typically considered less than significant, as these species are adequately conserved within the MHPA. Impacts to San Diego goldenstar and San Diego barrel cactus within the MHPA are considered significant. Impacts to variegated dudleya, regardless of location relative to the MHPA, are considered significant because it is a narrow endemic species. There are 75 barrel cacti locations (208 individuals) on site. Forty-five cacti locations (155 individuals) would be impacted by the proposed development with 41 individuals within the MHPA. There are approximately 14.62 acres of San Diego goldenstar on site. Approximately 3.86 acres of San Diego goldenstar would be impacted by the proposed Project with 0.04 acre inside the existing MHPA. Additional impacts to San Diego goldenstar may occur if up to 5 acres of landslide remediation is needed. Seven locations of variegated dudleya were recorded on the site with approximately 500 individual plants. Five of these locations containing approximately 400 plants (approximately 1,000 square feet) would be impacted within the proposed development area with two of these locations (approximately 50 plants) within the MHPA. Impacts to these species are considered significant and mitigation is required.

6.3.3 Impacts to Special Status Wildlife

California Gnatcatcher

Implementation of the Proposed Project would remove habitat occupied by the California gnatcatcher. Four occupied California gnatcatcher territories were observed on the site in 2012 within coastal sage scrub that lies both inside and outside of the proposed development area. This species is covered by the MSCP and the existing MHPA provides adequate preservation of suitable and occupied habitat areas within the City of San Diego. However, the Project would impact gnatcatcher habitat within the MHPA. As such, impacts to the California gnatcatcher would be significant, but mitigated through proposed habitat mitigation. Impacts to California gnatcatcher outside the MHPA would be less than significant since the MSCP provides adequate conservation of this species.

The California gnatcatcher does breed on the site. Development of the site during the nesting/breeding season (March 1 through August 15) may result in a significant impact to breeding gnatcatchers located within the MHPA prior to mitigation. Implementation of the mitigation measures described in Section 7.3.3 below would reduce impacts to the California gnatcatcher to below a level of significance.

San Diego Fairy Shrimp

Four recorded locations of San Diego fairy shrimp (GLA features 1, 2, 3, and 6,) including approximately 420 square feet of road ruts, would be removed under the Proposed Project. These impacts are significant, as this species is listed as federal endangered and not covered by the MSCP. The proposed grading plan is balanced to achieve safe roadway design and sufficient and efficient gradients for wet utilities, remediate existing landslides and maintain the existing vernal pools and their watersheds in a separate lot. The four road ruts occur along a north-south trail abutting the eastern TM boundary and located away from the proposed vernal pool preserve. Preserving the four fairy shrimp locations separately from the vernal pool preserve would result in isolated "holes" lacking connectivity with the vernal pool preserve and subjecting the four features to increased edge effects. Preserving the features in this manner would offer limited value to the existing resources. In addition, avoidance of these features would make it infeasible to achieve the safe and balanced design as intended with the proposed grading plan. As described in Section 7.0 of this report, impacts to San Diego fairy shrimp would be addressed through take authorization under the ESA. The Applicant met with USFWS, CDFG, the City and Corps several times in May and June 2007. As a result of these meetings, the Project was revised to provide a 1.92-acre area that preserves the existing vernal pools and provides for restoration of San Diego fairy shrimp habitat at a ratio of 3:1. The revised Project would be considered by the appropriate state and federal agencies through separate permit processes. A vernal pool restoration plan has also been prepared and submitted to the Corps and USFWS and is attached to this biological resources as an appendix.

Pursuant to the April 2010 Interim Project Review Process guidelines, projects with on-site vernal pools and/or road ruts with fairy shrimp impacts, such as the Castlerock Project, may proceed through the City's discretionary process if it is consistent with the draft Vernal Pool planning effort and Planning Agreement. The MSCP is in the process of creating a Vernal Pool Habitat Conservation Plan (HCP). The plan is envisioned as a comprehensive planning approach to preserve vernal pool species and their habitat within the City's jurisdiction. The HCP would create a new preserve boundary and updated conditions of coverage for several endangered species. The proposed Project would be consistent with Planning Agreement/interim guidelines, based on but not limited to the following:

- The Project would preserve and restore vernal pools consistent with the Vernal Pool Preserve Areas (Mission Trails Regional Park Sites 1 – Castle Rock [Q3]);
- The Project would provide management and monitoring of the on site vernal pool preserve consistent with the City's draft Vernal Pool Management Plan;
- The Project would provide funding in-perpetuity for the management and monitoring of the preserved and restored vernal pools;
- The Project is consistent with the proposed ESL/wetland amendments; and
- The Project would place a MSCP conservation/covenant easement over the on-site vernal pool preserve.

Other Special Status Wildlife Species

The proposed Project may potentially impact fourteen other special status wildlife species, six of which are Covered under the MSCP. Impacts to Covered Species within the MHPA are potentially significant, but mitigated based on preservation of local and regional habitat areas within the City of San Diego MHPA and through proposed habitat mitigation. These Covered Species include coast horned lizard, Belding's orange-throated whiptail, Cooper's hawk, southern California rufous-crowned sparrow, northern harrier, and southern mule deer. The eight other special status wildlife species occur in or near the development footprint and include western spadefoot, Coronado skink, red diamond rattlesnake, two-striped garter snake, grasshopper sparrow, yellow warbler, white-tailed kite, and San Diego black-tailed jackrabbit. Most of these species occur locally on both preserved and non-preserved natural lands. Direct impacts on each of these species would include removal of occupied habitat and a possible reduction in local population numbers. These impacts would be less than significant as the Project would have little

effect on the population size and breeding status of these species and is unlikely to affect their status in the region. In addition, preservation of substantial open space acreage associated with the MSCP would be beneficial to these species in the long term. Impacts to these wildlife species not Covered by the MSCP would be less than significant.

As the Project involves removal of large eucalyptus trees and other vegetation suitable for raptor nesting, impacts to nesting raptors would be potentially significant. In addition, the Project could impact other nesting bird species during construction. To mitigate potential nesting bird (including raptor) impacts, the Project applicant would ensure that no active nests are adversely affected by Project construction in compliance with the Migratory Bird Treaty Act (MBTA) and Section 3503 of the California Fish and Game Code.

In addition, the Project would remove approximately 104 acres of foraging habitat for birds of prey. Loss of foraging habitat would be adverse; however, with the implementation of mitigation measures described in Section 7.0 and with the preservation of similar habitat within the adjacent MSCP, impacts to foraging habitat would be reduced to below a level of significance.

6.4 Other Potential Impacts

6.4.1 JURISDICTIONAL WATERS

Implementation of the proposed Project would result in disturbances to areas (drainages) that are under the jurisdiction of the Corps/RWQCB according Section 404/401 of the Clean Water Act, CDFG according to Section 1600 of the California Department of Fish and Game Code, and the City of San Diego. The Corps/RWQCB impacts on site total 0.47 acre including 0.07 acre of wetlands and 0.40 acre of non-wetlands. CDFG jurisdictional impacts total 0.44 acre including 0.04 acre of riparian vegetation and 0.40 acre of unvegetated streambed. A total of 0.07 acre of City of San Diego wetland would be impacted by the Project. Impacts to these jurisdictional wetlands would be permanent and significant. Mitigation would be provided as required by the affected agency. A comprehensive reporting of the wetland delineation and anticipated impacts to jurisdictional wetlands are provided in GLA's 2012 jurisdictional delineation report and summarized in Table VII. Impacts to off-site jurisdictional wetlands as a result of the Alternative Scenario are discussed in Section 9.2.4.

TABLE VII: JURISDICTION IMPACTS
ACREAGES OF ON SITE IMPACTS TO CORPS, CDFG, AND CITY JURISDICTION

Jurisdiction	Non-wetland	Wetland	Total Jurisdiction	Non-wetland Impacts	Wetland Impacts	Total Impacts
Corps	0.68	0.72	1.40	0.40	0.07	0.47
CDFG	0.67	0.70	1.37	0.40	0.04	0.44
RWQCB	0.68*	0.72	1.40	0.40	0.07	0.47
City of San Diego	N/A	0.72	0.72	N/A	0.07	0.07

*Less than 0.01 acre of RWQCB/City jurisdictional vernal pool area exists on site. The Project would preserve these five jurisdictional vernal pools.

The majority of the drainages on-site are not wetlands and do not require setbacks per the City of San Diego Biology Guidelines. The wetland areas to be preserved on-site include the impoundment in the northern area of the site, the small wetland area in the southern portion of the site and the five vernal pools in the northern area of the site. The setback from the Project daylight line to the northern impoundment wetland would meet or exceed 100 feet. The setback from the southern wetland area would be 50 feet from development. This 50-foot buffer is considered adequate considering the size of the wetlands (small 0.12-acre wetland area), quality of wetland habitat (low), the absence of sensitive wetland species, and Project compliance with water quality/hydrology regulations. Ultimately, the Project will be required to obtain resource Agencies approval on the proposed wetland buffers in accordance with City of San Diego Biology Guidelines. Thus, the Project would provide adequate buffers between wetlands and proposed development.

For projects located outside of the Coastal Overlay Zone, the City's guidelines require avoidance of the entire watershed of vernal pools, which includes a buffer based on functions and values. The Proposed Project and Alternative Scenario have been designed to avoid impacts to the five vernal pool basins and their associated watersheds located within a small basin/mound complex. A 1.92-acre area is being preserved within the Project to preserve these vernal pools. This area (vernal pool preserve) is connected to other permanent open space located in the western portion of the Project. The watershed for all existing vernal pools has been mapped to ensure that the Project design totally avoided each vernal pool and watershed. As noted in the GLA report, the only source of water expected for these pools is direct precipitation and immediate localized runoff from rainfall.

The Project footprint will incorporate a setback of 21 to 48 feet from the existing vernal pool basins and 40 to 65 feet from the basins of restored vernal pools to preserve the watersheds of the pools and ensure that the existing hydrology (rain water run-off) is maintained during grading, construction, and implementation of the Proposed Project. Based on to the small size of the vernal pools, any subsurface flows supporting the pools would occur over short distances. The buffers are sufficient to ensure that subsurface flow would not be affected. It should be noted that the existing distance, hydrology, topography and vegetation between pools is not be disturbed in any way, again ensuring that the existing function and value of these pools would remain as is. The Vernal Pool Management Plan (VMP) addresses the specific concerns of indirect effects so that the proposed buffers would be adequate. This includes avoidance of the watersheds for existing vernal pools, grading and drainage structures (e.g., v-ditches) to direct development-generated runoff away from the vernal pool preserve, regular weed control to manage invasive plant species, fencing and signage to minimize trespassing, etc. No brush management areas would be located within the vernal pool preserve. A detailed description of the vernal pool restoration and preserve mitigation area is discussed in Section 7.3.4 below.

The Project design incorporates brow ditches at the base of manufactured slopes that would catch any runoff from these small areas adjacent to the preserve and direct the runoff away from the pools and into the development area. This measure would ensure that no runoff from adjacent areas would enter the vernal pools. These adjacent areas would be landscaped with native, non-invasive species compatible with the vernal pool preserve. Finally, to protect the vernal pools and associated watersheds, the Project would include a solid wall where the lots are above the vernal pool lot to prevent irrigation spray from falling on the vernal pools. These measures are sufficient to maintain the existing flow of natural rainfall and existing hydrology of the vernal pools (GLA 2012).

The vernal pool plants that commonly occur in the vernal pools (e.g. *Psilocarphus*, *Marsilea*, *Callitriche*, *Deschampsia*) do not rely on insects for pollination. Other species commonly noted in vernal pool areas such as rabbits (*Sylvilagus* spp.), killdeer (*Charadrius vociferus*), and mallard ducks (*Anas platyrhynchos*) have adapted to urban areas and may be expected to use this vernal pool preserve. Based on these Project design features, no direct or indirect impacts to vernal pool hydrological function is anticipated following mitigation.

6.4.2 WILDLIFE MOVEMENT CORRIDORS

The Proposed Project would not result in any obstruction to the primary habitat linkages between Santee Lakes and Mission Trails Regional Park. This connection is already constrained by Mast Boulevard, existing residential areas, and Highway 52. Likewise, any linkage between the site and open space areas provided by Little Sycamore Creek and Spring Canyon would not be affected by Project implementation. There is no connectivity between the site and east to Santee Lakes due to current housing developments. The vernal pool preserve is designed to be connected to the open space located on the west side of the development area with a connecting corridor width varying from 230 to 310 feet. No significant impacts to wildlife movement are expected as a result of the Proposed Project.

6.5 Off-site Improvement Areas

Off-site improvement areas for the Proposed Project would include a portion of the SDG&E parcel and northern area grading for Street 'E'. The off-site impacts and mitigation to vegetation communities by MSCP Tier and their presence relative to the MHPA boundary are presented in Table VIII.

TABLE VIII: OFF-SITE VEGETATION
APPROXIMATE ACREAGE OF OFF-SITE VEGETATION
COMMUNITY IMPACTS AND REQUIRED MITIGATION

Habitat	Impacts Outside MHPA	Mitigation Ratio for Impacts Outside MHPA	Impacts Inside MHPA	Mitigation Ratio for Impacts Inside MHPA	Required Mitigation Inside MHPA*
		SDG&E			
Native Grassland	0.14	1:1	0.00	2:1	0.14
Non-native Grassland	0.43	0.5:1	0.00	1:1	0.22
Eucalyptus Woodland	0.40	0:1	0.00	0:1	0.00
Disturbed/Developed	0.20	0:1	0.00	0:1	0.00
		Northern Area (Street 'E')			
Native Grassland	0.14	1:1	0.00	2:1	0.14
Coastal Sage Scrub	0.13	1:1	0.00	1:1	0.13
Non-native Grassland	0.20	0.5:1	0.10	1:1	0.20
Disturbed/Developed	0.02	0:1	0.00	0:1	0.00
Total Tier I	**0.28**	1:1	**0.00**	2:1	**0.28**
Total Tier II	**0.13**	1:1	**0.00**	1:1	**0.13**
Total Tier III	**0.63**	0.5:1	**0.10**	1:1	**0.42**
Total Tier IV	**0.62**	0:1	**0.00**	0:1	**0.00**
Total	**1.66**		**0.10**		**0.83**

* It is assumed that all mitigation will be inside the MHPA

Off-site grading within the SDG&E parcel would impact 0.14 acre of native grassland, 0.43 acre of non-native grassland, 0.40 acre of eucalyptus woodland, and 0.20 acre of disturbed/developed for a total of 1.17 acres. No sensitive species have been observed within this impact area and none are expected to be adversely affected by construction activities. These vegetation impacts are potentially significant prior to mitigation.

Off-site grading of the northern area for Street 'E' would impact 0.14 acre of native grassland, 0.13 acre of coastal sage scrub, 0.30 acre of non-native grassland, and 0.02 acre of disturbed/developed for a total of 0.59 acre. Approximately 0.05 acre of BMZ-2 impact-neutral vegetation is also present in this off-site area. California gnatcatchers have been observed in and around this area during 2012 surveys. The off-site grading has the potential to impact California gnatcatchers and their habitat. No other sensitive species have been observed within this impact area. These habitat impacts are potentially significant prior to mitigation.

6.6 Cumulative Impacts

The Castlerock Project generally conforms to the City's MSCP Subarea Plan with respect to design features, specific guidelines and mitigation. The proposed MHPA adjustment with native grassland restoration results in a preserve that is functionally equivalent to that which currently exists. The Project is not expected to result in any significant cumulative impacts.

7.0 MITIGATION MEASURES

The Castlerock Project would result in impacts to a variety of biological resources, including sensitive habitat and species. These impacts would be mitigated as discussed below. All Project impacts remaining after mitigation would be less than significant.

The owner/permittee shall make arrangements to schedule a pre-construction meeting to ensure implementation of the MMRP. The meeting shall include the Resident Engineer, Project Biologist, and the City's Mitigation Monitoring Coordination (MMC) Section.

7.1 Mitigation for Impacts to Vegetation Communities

The following mitigation measures are provided to compensate for direct impacts to vegetation communities associated with the Proposed Project. Implementation of these measures would reduce direct Project effects below a level of significance.

7.1.1 MITIGATION FOR IMPACTS TO VEGETATION COMMUNITIES

Direct impacts associated with this Project, both on and off-site, would be mitigated through the dedication of the appropriate amount of vegetation, in the appropriate Tier, within the MHPA as required in the Biology Guidelines (2009). Required mitigation would include approximately 0.14 acre of wetland, 14.08 acres of Tier I, 32.13 acres of Tier II, and 25.83 acres of Tier IIIB vegetation or the allowed equivalent. The amount of mitigation required is detailed in Tables VI and VIII. Wetland mitigation is discussed below in Section 7.4. As indicated in the Biology Guidelines (2009, page 19), any combination of Tier I, II and/or III vegetation within the MHPA may be used to satisfy the 57.96-acre total Tier II and III mitigation requirement. Tier I habitat must be mitigated with Tier I habitat, but may be out of kind. Mitigation for Tier II and III impacts, and partial mitigation for Tier I impacts, would be located within the MHPA within the Project boundaries and would include 4.70 acres of Tier I, 52.37 acres of Tier II, and 31.30 acres of Tier III. The MHPA land would be conveyed to the City as described in Section 7.1.1.a. Remaining mitigation of 9.38 acres for Tier I (native grassland) would be located off-site within the MHPA in the East Elliot area on land owned by Pardee and come from restored non-native grassland on site. The acreage of native grassland found on each potential mitigation parcel are detailed in Table IX below. Native grassland mitigation is proposed on off-site APN 366-040-39 which contains 5.4 acres of native grassland. In addition, approximately 4.8 acres of non-native grassland on site is available to be restored to native grassland (for further details see Section 8.0 below). This mitigation would reduce the Proposed Project impacts to vegetation communities to below a level of significance.

TABLE IX: OFF-SITE NATIVE GRASSLAND BY PARCEL
APPROXIMATE ACREAGE OF NATIVE GRASSLAND ON OFF-SITE MITIGATION PARCELS

Parcel APN	Native Grassland (Tier I) Acreage*
366-040-39	5.4
366-040-41	3.8
366-050-24	0.5
366-050-28	2.3
366-050-30	0.4
366-080-30	0.2
366-081-02	6.0
366-081-03	0.4
366-081-05	2.9
TOTAL	**21.9**

*These acreages are estimates from a vegetation survey conducted in 2006 prior to the subdivision of some parcels.

Per City requirements, the following measures would be implemented with respect to the on site portions of the MHPA:

a) Prior to recordation of the first final map and the issuance of any grading permits, the on site MHPA shall be conveyed to the City's MCSP preserve through either fee title to the City or a covenant of easement granted in favor of the City and wildlife agencies. Land would be conveyed in phases to meet the mitigation requirements for the amount of land disturbed per phase. Conveyance of any land in fee to the City shall require approval from the Park and Recreation Department Open Space Division Deputy Director and shall exclude detention basins or other stormwater control facilities, and manufactured slopes (with the exception of those that might be associated with the landslide area).

b) Or, if the City does not hold fee title, or a covenant of easement is not granted then the Owner/Permittee/ Applicant must provide for the management of the mitigation area (City of San Diego 2009). To facilitate MHPA conveyance, any non-fee areas located in the MHPA shall be lotted separately, with covenant of easements, and be maintained in perpetuity by the Owner/Permittee/ Applicant unless otherwise agreed to by the City. All other on site areas can be conveyed through any of the three above methods.

7.2 Mitigation for Indirect Effects

The following mitigation measures are provided to avoid and minimize indirect impacts of the Project. Implementation of these measures would reduce indirect Project effects below a level of significance. It should also be noted that design features included in a Project design to avoid impacts do not require mitigation measures. However, to facilitate Project implementation, measures are included here to assist staff in determining that these design features remain part of the Project.

7.2.1 MITIGATION FOR INDIRECT EFFECTS

In order to avoid any construction-related direct and indirect impacts the owner/permittee shall provide a letter of verification to the Assistant Deputy Director of the Land Development Review Division stating that a qualified biologist has been retained to implement the following measures:

- A qualified biologist (project biologist) shall supervise the placement of orange construction fencing or equivalent along the boundary of the development area as shown on the approved grading plans. All construction activities shall take place only inside the fenced area. Grading materials shall be stored either inside the fenced development area or in an area approved by the project biologist.
- The project biologist shall meet with the owner/permittee or designee and the construction crew to conduct an on site educational session regarding the need to avoid impacts outside of the approved development area.
- During grading activities, the Best Management Practices for erosion control shall be implemented and monitored as needed to prevent any significant sediment transport. These practices may include but may not be limited to the following: the use of materials such as sandbags, sediment fencing and erosion control matting to stabilize disturbed areas; and installation of erosion control materials, particularly on the down-slope side of disturbed areas to prevent soil loss.
- Prior to the release of the grading bond, the project biologist shall submit a letter report to the Assistant Deputy Director, which assesses any Project impacts resulting from construction. In the event that impacts exceed the allowed amounts, the additional impacts shall be mitigated in accordance with the City of San Diego Land Developmental Zoning Code Update Biology Guidelines, to the satisfaction of the City Manager.

- Prior to the issuance of a grading permit, a qualified biologist would submit a final revegetation plan to the staffs of EAS, MSCP and Parks and Recreation for the area (if any) disturbed by remedial grading for suspected landslides and for the graded slopes adjacent to the MHPA. This revegetation plan would, as determined by the project biologist, replace the vegetation types removed by the grading, and would substantially comply with the conceptual plan which is attached to this biology technical report. If feasible, San Diego barrel cactus located in development areas may be collected and located in the revegetated area.

In order to assist staff in determining that impact avoiding design features (addressing MHPA adjacency) are included in final plans, the following would be done:

- Prior to the issuance of a grading permit, a qualified biologist would submit a final revegetation plan to the staffs of EAS, MSCP and Parks and Recreation for the area (if any) disturbed by remedial grading for suspected landslides and for the graded slopes adjacent to the MHPA. This revegetation plan would, as determined by the project biologist, replace the vegetation types removed by the grading, and would substantially comply with the conceptual plan which is attached to this biology technical report. If feasible, San Diego barrel cactus located in development areas may be collected and located in the revegetated area.
- Prior to recordation of the first final map and/or issuance of the first grading permit the owner/applicant shall submit evidence that items 1-6 listed below, which ensure consistency with the Multiple Species Conservation Program (MSCP) Land Use Adjacency Guidelines, are identified on the grading plans to the satisfaction of the ADD of LDR.

    1) A lighting plan shall be included in the grading plans which shows required lighting adjacent to the MHPA as being shielded, unidirectional, low pressure sodium illumination (or similar), and directed away from preserve areas using appropriate placement and shields.

    2) A landscape plan shall be included with the grading plans which show no non-native, invasive species being utilized in or adjacent to the MHPA or vernal pools.

    3) The grading plans shall show that no direct drainage into the MHPA shall occur during and after construction. Runoff into the vernal pool area must be intercepted by a swale at the bottom of the slope.

    4) The grading plans shall depict construction staging areas, and these areas must be located inside the approved development areas.

    5) A fencing plan shall be included with the grading plan that ensures compatible materials are used adjacent to the MHPA, ensures that fencing is located within the boundary of development lots, and that identifies responsibility for maintenance and repair. The fencing plan would also cover the perimeter of the vernal pool area and would provide for solid fencing where lots adjacent to the vernal pool area are above the vernal pools. Open fencing may be used where lots are below the vernal pool area and irrigation would not spray into the vernal pool preserve.

    6) A brush management plan shall be included with the grading plan that shows all Zone 2 brush management areas and which clearly state that brush management is the responsibility of the land owner. Brush management would not be done in the vernal pool area.

- Prior to the issuance of a grading permit, a qualified biologist shall submit a final vernal pool management plan (VPMP) to the staffs of EAS and MSCP staffs for review and approval. This plan shall substantially comply with the conceptual plan attached to this biology technical report.
- No new trails shall be created within the MHPA.

- Prior to recordation of the first map, the Project applicant shall submit a residents' education program to the MSCP section. This program shall consist of a brochure informing residents about the adjacent MHPA, and the importance of the resources within, and the activities that are allowed. The brochure shall direct residents to not disturb conserved plants and animals, not to plant invasive species adjacent to the MHPA, and not to allow irrigation runoff to enter the MHPA. It shall also direct residents to only enter the MHPA at marked access points and to stay on specific trails.

7.3 Mitigation for Impacts to Special Status Biological Resources

The following mitigations are recommended for anticipated impacts to special status biological resources.

7.3.1 Mitigation for Impacts to Special Status Vegetation Communities

Anticipated Project impacts to wetlands, coastal sage scrub, and native and non-native grasslands would be mitigated by dedication of lands as established by the MSCP and described above. These measures would bring the impacts to special status vegetation communities associated with the Proposed Project to a level below significant.

7.3.2 Mitigation for Impacts to Special Status Plants

Three special status plant species anticipated to be removed by the Project (San Diego barrel cactus, variegated dudleya, and San Diego goldenstar) are covered under the MSCP. The following measure would bring the impacts to special status plants associated with the Proposed Project to a level below significant.

- Prior to issuance of a grading permit, a qualified biologist would submit a final revegetation plan (see attached) to the City for review and approval by the staffs of EAS and MSCP. This plan would provide for the translocation of San Diego goldenstar from the 0.04 acres to be impacted within the MHPA to suitable areas within the MHPA (Exhibit 8). If additional San Diego goldenstar is removed due to landslide remediation, preservation would be provided in a nearby parcel (APN 366-040-39) owned by Pardee that contains San Diego goldenstar. The area occupied by San Diego goldenstar that would be affected by grading would need to be quantified after further geological testing prior to grading. Due to the potential for the area of San Diego goldenstar plants to be extensive, it would not be practical to translocate the San Diego goldenstar in this remediation area. Prior to landslide remediation, a San Diego goldenstar survey shall be completed of the proposed preservation area to verify adequate San Diego goldenstar acreage is available for preservation. Parcel 366-040-39 is expected to contain at least five acres of San Diego goldenstar based on San Diego goldenstar surveys completed for the adjacent Sycamore Landfill parcel.
- The plan would also cover the relocation of the 1,000 square-foot variegated dudleya area and relocation of 41 San Diego barrel cacti to suitable areas within the MHPA. The revegetation plan includes but is not limited to criteria for site preparation, seed and plant collection, planting methods, maintenance and monitoring, and success criteria.

Impacts to graceful tarplant, decumbent goldenbush, ashy spike-moss, and San Diego County viguiera are not significant and do not require mitigation.

7.3.3 Mitigation for Impacts to Special Status Wildlife

Impacts to all special status wildlife species, except the San Diego fairy shrimp and nesting birds (including raptors and coastal California gnatcatcher), would be mitigated through dedication of land within the MHPA in compliance with the MSCP and City of San Diego Biology Guidelines. The following additional measures would reduce impacts to all special status wildlife species:

1) To avoid impacts to nesting birds protected by the Migratory Bird Treaty Act, Project grading should take place outside of the nesting season, roughly defined as mid-February to mid-August.

If grading is to take place during the nesting season, a biologist should be present during vegetation clearing operations to search for and flag active nests so that they can be avoided. Regardless of the season grading takes place, all relatively immobile wildlife should be removed by hand to areas outside of the grading limits, but near the site. After mitigation the anticipated impact on nesting birds is less than significant.

2) Prior to any grading or native vegetation clearing associated with Project construction, a directed survey shall be conducted to locate active raptor nests, if any. If active raptor nests are present, no grading or removal of habitat would take place within 300 feet of any active nesting sites (the nesting/breeding season for raptors extends roughly from mid-February through mid-August).

3) Prior to any grading or native vegetation clearing associated with Project construction, a directed survey shall be conducted to confirm the presence or absence of the California gnatcatcher and, if found to be present, to locate active nests (if any). If active nests are present, no grading or removal of habitat would take place within 300 feet of active nesting sites during the nesting/breeding season (March 1 through August 15). Should active nests be abandoned prior to the end of the expected breeding season, grading and construction may continue as within approved grading limits.

4) Prior to the issuance of a grading permit, the applicant shall provide the City with a copy of any required State or Federal permit necessary for the take of species listed as Threatened or Endangered.

5) Prior to the issuance of any grading, the City Manager (or appointed designee) shall verify that the MHPA boundaries and the following Project requirements regarding the coastal California gnatcatcher are shown on the construction plans:

   No clearing, grubbing, grading, or other construction activities shall occur between March 1 and August 15, the breeding season of the coastal California gnatcatcher, until the following requirements have been met to the satisfaction of the City Manager:

   A. A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) recovery permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of the coastal California gnatcatcher. Surveys for the coastal California gnatcatcher shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service within the breeding season prior to the commencement of any construction. If gnatcatchers are present, then the following conditions must be met:

      1. Between March 1 and August 15, no clearing, grubbing, or grading of occupied gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and

      2. Between March 1 and August 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied gnatcatcher habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City Manager at least two weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; or

3. At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) hourly average at the edge of habitat occupied by the coastal California gnatcatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16).

*Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If coastal California gnatcatchers are not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the City Manager and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 1 and August 15 as follows:

1. If this evidence indicates the potential is high for coastal California gnatcatcher to be present based on historical records or site conditions, then condition A.III shall be adhered to as specified above.

2. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

These measures would bring the impacts to special status wildlife associated with the Proposed Project to a level below significant.

7.3.4 Mitigation for Impacts to San Diego Fairy Shrimp and Vernal Pools

The Project has been designed so that impacts to the five vernal pool basins and their associated watersheds located within a small basin/mound complex would be avoided.

The Project would remove four road ruts (basin features 1, 2, 3, and 6) occupied by the federally endangered San Diego fairy shrimp (*Branchinecta sandiegoensis*). Avoidance of these areas was considered but was found to be infeasible as it would leave the road ruts in large "holes" below grade or would require large areas of the site to be left undeveloped, greatly affecting Project feasibility. Proposed mitigation for these impacts includes Project design features and establishment of a 1.92-acre vernal pool preserve connected to the permanent open space. The preserve would contain approximately 1,260 square feet of restored basins for vernal pool species, including San Diego fairy shrimp; a ratio of approximately 3:1 ratio to compensate for impacts to 420 square feet in four features occupied by San Diego fairy shrimp. The vernal pool preserve would preserve basin features 8 through 14. The vernal pool preserve varies in width from 160 to 250 feet and is connected to the MHPA. As noted above, the Project would provide adequate buffers around the preserved and restored vernal pools (to include the vernal pool watersheds), which is consistent with the City's Biology Guidelines for projects occurring outside of the Coastal Overlay Zone. The Project footprint would be setback 21 to 48 feet from the existing vernal pool basins, and 40 to 65 feet from the basins of the proposed restoration vernal pools. In addition, a Vernal

Pool Restoration and Management Plan for San Diego fairy shrimp shall be reviewed, and approved by the USACE and USFWS prior to the granting of a grading permit. A draft management plan is attached to this document. Final mitigations for impacts to San Diego fairy shrimp would be addressed through take authorization under the ESA. The required permit would be obtained prior to commencement of grading.

Mapping within the proposed vernal pool preserve has located approximately 3,780 square feet of potential basin area. Approximately 1,260 square feet of the potentially restorable area would be recontoured and restored with appropriate vernal pool species, including San Diego fairy shrimp. Upland areas surrounding the restored basins would be weeded and supplemental plantings done where necessary using native grasses and bulbs recovered from areas to be graded. Approximately 1.26 acres of native grassland would be restored in the vernal pool restoration area (RECON 2012b). Restoration would avoid impacts to the five existing vernal pools, but said pools would be enhanced through weeding. The Restoration Plan would identify collection and restoration methodology and activities, a monitoring and maintenance program, and would include success criteria that must be met before the Restoration Program is deemed to be complete. The Restoration Program shall implement the Plan and would consist of collection of vernal pool materials from fairy shrimp locations that would be impacted and from basins to be restored, recontouring the area to deepen the basins, replacement of the collected materials, and maintenance activities (e.g., weeding). The area shall be fenced and monitored for five years or until success criteria are met, whichever occurs first. City MSCP staff may review the Restoration Plan for MSCP conformance prior to granting a grading permit. The location of the San Diego fairy shrimp mitigation area within the MHPA is marked on Exhibit 7.

The Project design around the vernal pool preserve area incorporates measures to avoid direct and indirect impacts to the vernal pools. As such, the Proposed Project would have no direct or indirect impacts to the vernal pools, associated watershed, and dependent species. These measures include:

1. Project grading and slope drainage management plans have been designed to deflect runoff from adjacent areas away from the vernal pools.
2. A 21 to 48 foot setback from the existing vernal pool basins and a 40 to 65 foot setback from the basins of the proposed restoration vernal pools would preserve the entire watershed for each pool. This strategy would not result in disruption of the flow of natural rainfall into the vernal pools as the entire watershed is being avoided (GLA 2012).
3. Grading adjacent to the preserved vernal pools would be conducted such that most Project runoff would drain away from the vernal pool and their associated watersheds.
4. A portion of the grading along the perimeter of the preserved vernal pool acreage would drain toward the preserve. In this case, the Project design incorporates drainage swales at the base of these manufactured slopes that would catch any runoff from areas adjacent to the preserve and direct the runoff away from the pools and into the development area. These adjacent areas would be landscaped with native, non-invasive species compatible with the vernal pool preserve.
5. All brush management zones have been designed to be outside of the vernal pool preserve, including the vernal pool watershed.
6. Finally, to protect the vernal pools and associated watersheds, the Project would include a solid wall where the lots are above the vernal pool lot to prevent irrigation spray from falling on the vernal pools.

7.4 Mitigation for Impacts to Jurisdictional Waters

Implementation of the Proposed Project would result in disturbances on site to areas (drainages) that are under the jurisdiction of the Corps/RWQCB according Section 404/401 of the Clean Water Act and Section 1600 of the California Department of Fish and Game Code. The Corps/RWQCB impacts on site total 0.47 acre, including 0.07 acres of wetlands and 0.40 acre of non-wetlands. CDFG jurisdictional

impacts total 0.44 acre, including 0.04 acre of riparian vegetation and 0.40 acre of unvegetated streambed. A total of 0.07 acre of City of San Diego wetland would be impacted by the Project. Mitigation for these impacts would proceed according to permitting requirements of the Corps, CDFG, and the City. The mitigation shall consist of a minimum 2:1 ratio of preservation/creation/restoration/enhancement for non-wetland impacts and 2:1 ratio of preservation/creation/restoration/enhancement for wetland impacts. The 2:1 wetland impact ratio shall include a 1:1 creation component to ensure no net loss of wetlands. Mitigation shall include a minimum of 0.07 wetland creation, 0.07 wetland preservation/enhancement, and 0.80 acre of non-wetland preservation within the Santee Subarea watershed.

The Proposed Project would exceed the jurisdictional waters mitigation requirements. The proposed on site 0.37-acre wetland creation mitigation area is shown on Exhibit 7 and would be within the MHPA upon approval of the MHPA boundary adjustment. The Proposed Project would preserve approximately 0.93 acre of Corps/RWQCB jurisdiction including 0.65 acre of Corps/RWQCB wetlands. The Project would preserve 0.93 acre of CDFG jurisdiction including 0.66 acre of riparian vegetation. A total of 0.65 acre of City wetlands would be preserved on site. Basin feature 7 is included within the jurisdictional waters preserved on site.

TABLE X: JURISDICTION MITIGATION

ACREAGES OF ON SITE IMPACTS AND MITIGATION TO CORPS/RWQCB, CDFG, AND CITY JURISDICTION

Jurisdiction	Impacts			Mitigation		
	Non-wetland	Wetland	Total	Non-wetland (2:1)[1]	Wetland (2:1)[2]	Total Required
Corps/RWQCB	0.40	0.07	0.47	0.80	0.14	0.94
CDFG	0.40	0.04	0.44	0.80	0.08	0.88
City of San Diego	-	0.07	0.07	0.00	0.14	0.14

[1] Non-wetland mitigation consists of preservation.
[2] To ensure no net loss of wetland, wetland mitigation is proposed to consist of 1:1 creation and 1:1 preservation.

Mitigation for disturbances to drainages that are under the jurisdiction of the City of San Diego, Corps/RWQCB, and CDFG would reduce Project impacts to below a level of significance. The Project would obtain Corps permit, CDFG streambed alteration agreement, and RWQCB water quality certification and would proceed in accordance with those permits.

Prior to the issuance of a grading permit, a qualified biologist would submit a final wetland revegetation plan (see attached) to the City for review and approval by the staffs of Park and Recreation, EAS, and MSCP. This plan shall be prepared in accordance with the City of San Diego Biology Guidelines, This plan shall substantially comply with the conceptual plan attached to this biology technical report. Ultimately, mitigation would be provided in accordance with resource agency permit requirements.

7.5 Mitigation for Off-site Impacts

Vegetation impacts for the northern area and the SDG&E parcel are included in the mitigation totals by MHPA tier in Section 7.1 and Table VII.

Mitigation for impacts to California gnatcatcher habitat for the in the northern area are addressed in Section 7.3.3.

7.6 Level of Significance after Mitigation

The Castlerock Project would mitigate all expected impacts to biological resources to a level that would be less than significant.

8.0 MHPA ADJUSTMENT

Implementation of the Castlerock Project would require an adjustment to the adopted MHPA boundary as shown on Exhibit 9. This adjustment would remove areas related to Project design refinements and landslide remediation, creation of a vernal pool preserve and connection to the MHPA, and allow the siting of a public park. All areas that are removed from or added to the MHPA are immediately adjacent to areas designated for development. The SDGE property is not included in the adjustment. Tables XI and XII summarize the changes in the MHPA that result from Project implementation.

TABLE XI: EXISTING VS. PROPOSED MHPA BOUNDARY WITHOUT RESTORATION

Habitat Type	MSCP Tier	Total Habitat Inside MSCP Before Boundary Adjustment (acres)	Total Habitat Inside MSCP After Boundary Adjustment (acres)	Net Change in Total Habitat After Boundary Adjustment (acres)
Native Grasslands	I	4.27	4.90†	0.63†
Coastal Sage Scrub	II	57.25	53.83	-3.42
Non-native Grasslands	III B	29.46	32.03†	2.57†
Eucalyptus Woodlands	IV	0.00	0.00	0.00
Wetlands	-	0.13	0.60	0.47
Disturbed/Developed	IV	3.38	3.56	0.18
TOTAL		**94.49**	**94.92**	**0.43**

† Refer to Table XII for the acreages after non-native to native grassland restoration.

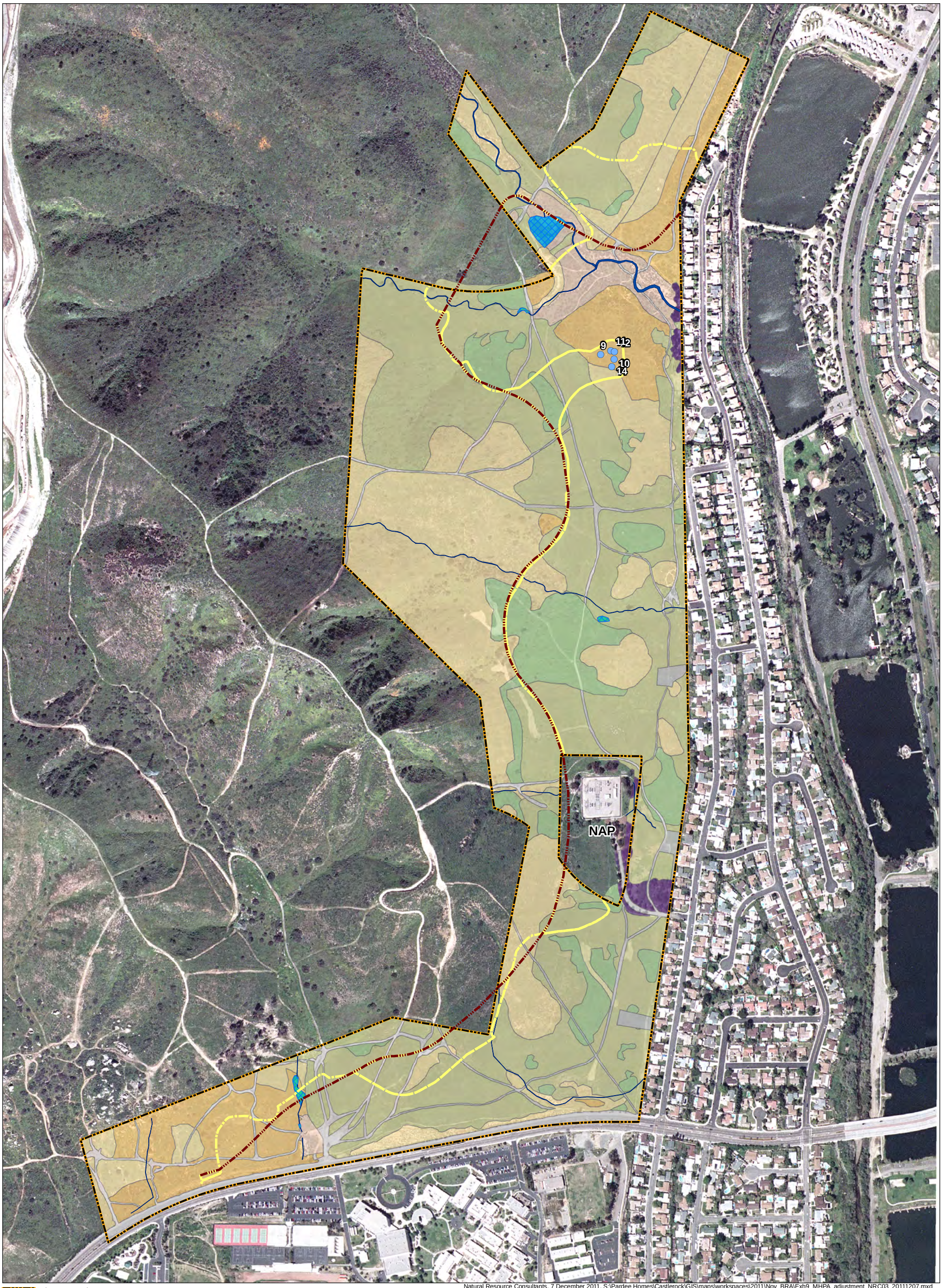
TABLE XII: EXISTING VS. PROPOSED MHPA BOUNDARY WITH RESTORATION

Habitat Type	MSCP Tier	Total Habitat Inside MSCP Before Boundary Adjustment (acres)	Total Habitat Inside MSCP After Boundary Adjustment (acres)	Net Change in Total Habitat After Boundary Adjustment (acres)
Native Grasslands	I	4.27	7.69†	3.42†
Coastal Sage Scrub	II	57.25	53.83	-3.42
Non-native Grasslands	III B	29.46†	29.24†	-0.22†
Eucalyptus Woodlands	IV	0.00	0.00	0.00
Wetlands	-	0.13	0.60	0.47
Disturbed/Developed	IV	3.38	3.56	0.18
TOTAL		**94.49**	**94.92**	**0.43**

† Restoration mitigation includes restoring 2.79 acres of non-native grassland on-site within the proposed MHPA boundary to native grassland.

The basic requirement for any adjustment is that the adjustment would result in a preserve that is functionally equivalent to the adopted MHPA. This is evaluated through the MHPA equivalency analysis, which is based on habitat and covered species. As detailed in the MHPA analysis below, the proposed boundary line adjustment (BLA) would potentially result in a reduction of habitat value and covered plant species, but would maintain linkages and functions, configurations, ecotones, and other species populations. As the proposed BLA would potentially reduce the preserve value relative to the adopted MHPA, Project impacts to the MHPA would be significant.

- Effects on significantly conserved habitat: Without the proposed native grassland restoration, the proposed adjustment would result in changes to the conservation of Tier I, II, and III habitat noted in Table IX. The overall size of the MHPA would remain approximately the same, however there would be a reduction of functionally equivalent habitat if no native grassland restoration occurred. Specifically, there would be a reduction of 3.42 acres of coastal sage scrub (Tier II) and an increase in the amount of native grassland (Tier I) by 0.63 acre and non-native grassland (Tier III) by 2.57 acres. Counting the 0.63 acre of Tier I surplus towards the loss of Tier II (uptiering), the Project would have a loss of 2.79 acre of Tier II habitat. This is a potentially significant MHPA impact. A total of approximately 4.8 acres of non-native grassland (Tier IIIB)



Natural Resource Consultants. 7 December 2011. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2011\Nov_BRA\Exh9_MHPA_adjustment_NRC03_20111207.mxd

- Site Boundary
- Existing MHPA Boundary
- Proposed MHPA Boundary
- Corps and CDFG Non-Wetland (GLA)
- Corps and CDFG Wetland (GLA)
- Vernal Pool

Vegetation Type

- Non-Native Grasslands
- Native Grasslands
- Baccharis-Dominated Coastal Sage Scrub
- Coastal Sage Scrub - Coastal Form
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Eucalyptus Woodlands
- Disturbed

N W E S

0 255 510 1,020 ft

1:6,127 1 inch = 511 feet

Exhibit 9: MHPA Boundary and Adjustment

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- is available for restoration and enhancement to native grassland (Tier I) within the lands to be added to the MHPA by the proposed BLA. To ensure no loss of functionally equivalent habitat, the Project would restore 2.79 acre of the Tier IIIB habitat to Tier I habitat (uptiering). Therefore, the total native grassland (Tier I) would total 3.42 acres after restoration and would compensate for the deficit of coastal sage scrub (Tier II) habitat, resulting in the uptiering of 3.42 acres of habitat within the MHPA (Table XII). In addition, a small area of wetland (0.47 acre) would be added to the MHPA. Overall, a net surplus of 0.25 acre of sensitive habitat (i.e., wetlands) would be provided by the BLA. While the Project would result in the loss of 0.22 acre of non-native grassland, this loss is not significant with respect to the overall function of the MHPA. A primary biological function of non-native grassland in the MHPA is to provide foraging habitat for bird species. The proposed increase in native grassland (3.42 acre) in the MHPA would increase foraging area for raptors, grasshopper sparrows, and other grassland dependent species. It should also be noted that the MHPA in this area continues to recover from the 2003 Cedar fire. It is likely that the amount of coastal sage scrub in the MHPA would increase naturally over time.

  The Project would add a 1.92-acre vernal pool preserve area to the MHPA. Restoration and management of the vernal pools would be completed in compliance with a San Diego Fairy Shrimp/Vernal Pool Restoration and Enhancement Plan and a vernal pool management plan. The conceptual vernal pool management plan is consistent with the City's draft Vernal Pool Management Plan. Overall, the proposed inclusion of restored vernal pools occupied by San Diego fairy shrimp would result in a positive change to the MHPA.

  To ensure habitat would remain functionally equivalent within the MHPA, implementation of a native grassland restoration plan would be required as mitigation.

- Effects on covered species: Without the incorporation of Project mitigation, the Proposed Project could significantly impact covered species within the MHPA. Twenty-one locations of San Diego barrel cactus (including 41 individuals) onsite are inside of the existing MHPA. All San Diego barrel cacti currently located in the MHPA that would be impacted by the Project would be relocated into appropriate areas within the MHPA as a part of Project mitigation. In addition, the proposed adjustment would preserve four additional locations.

  The adjustment would remove two locations of variegated dudleya and add one location to the MHPA. As required by proposed mitigation, these two affected variegated dudleya locations would be relocated into appropriate areas within the MHPA. This would result in more variegated dudleya within the MHPA.

  The MHPA adjustment would add 0.81 acre of San Diego goldenstar and remove 0.04 acre from within the existing MHPA. As required by mitigation, San Diego goldenstar within the 0.04-acre area would be transplanted in accordance with the San Diego goldenstar translocation plan. In addition to the 0.04 acre of goldenstar potentially impacted by Project development, unavoidable landslide remediation would potentially impact 1.5 to 5 acres of MHPA land occupied by San Diego goldenstar. Since this area is currently located in the MHPA, landslide testing has not been completed to determine the exact acreage of landslide remediation necessary. While this area would be restored to pre-remediation habitat conditions or better (i.e., coastal sage scrub with scattered grassland species), mitigating 1.5 to 5 acres of San Diego goldenstar through transplantation is not feasible. Thus, proposed mitigation includes preservation of San Diego goldenstar on an off-site parcel (APN 336-040-39) within the MHPA through dedication to the City.

  As discussed above, the Project includes vernal pool restoration in an area to be added to the MHPA. As the restoration component is proposed to mitigate impacts to San Diego fairy shrimp (outside the MHPA), the restored pools would include San Diego fairy shrimp. Restoration and management of the vernal pools would be consistent with the conceptual San Diego fairy shrimp/vernal pool restoration and enhancement plan and a vernal pool management plan. The

conceptual vernal pool management plan is consistent with the City's draft Vernal Pool Management Plan. Overall, the proposed inclusion of restored vernal pools occupied by San Diego fairy shrimp would result in a positive change to the MHPA.

The Proposed Project and BLA would have impacts to six other covered wildlife species. Impacts to these species would not be significant based on preservation of local and regional habitat areas within the City of San Diego MHPA and Project habitat mitigation. These covered species include coast horned lizard, Belding's orange-throated whiptail, Cooper's hawk, southern California rufous-crowned sparrow, northern harrier, and southern mule deer.

The reduction of 3.42 acres of coastal sage scrub habitat would not significantly affect the overall function of the MHPA for the California gnatcatcher and other species that utilize coastal sage scrub. The California gnatcatcher and other scrubland species will utilize other adjacent habitats, such as grasslands, that have overlapping habitat values with coastal sage scrub and may be used for foraging, breeding, or cover. The uptiering of 3.42 acres of native grassland into the MHPA would provide a benefit to scrubland species as well as grassland species. In addition, preservation of 53.83 acres of coastal sage scrub within the MHPA on site exceeds the required mitigation of 32.13 acres.

With implementation of the proposed mitigation, the proposed BLA would have a less than significant effect on covered species.

- Effects on habitat linkages and function of preserve areas: The adjustment would not affect any known habitat linkages or movement corridors. The adjustments would occur on the edge of the existing MHPA boundary line.
- Effects on preserve configuration and management: The adjustment maintains the overall existing preserve configuration. The removal of small amounts of habitat in one area is offset by the addition of other areas along the MHPA boundary. The adjustment would not affect how the City manages the preserve.
- Effects on ecotones and other conditions affecting species diversity: The adjustment conserves habitat shown on the MHPA in the City's MSCP Subarea Plan in generally the same location and configuration as that approved in the original MSCP. The addition of the coastal valley and freshwater marsh to the MHPA would have a beneficial effect by ensuring that a rare wetland and its surrounding upland vegetation are preserved. The Project would increase the amount of native grassland habitat in the MHPA, preserving and enhancing the ecotone and adding species diversity through restoration of non-native habitat to native habitat.
- Effect to species of concern not on the MSCP covered species list: The adjustment would have no negative effect on the other species of concern that are not on the MSCP Covered Species list. The adjustment would generally preserve the same amount of various vegetation types on site as currently exists, and in generally the same location and configuration.

9.0 ALTERNATIVE SCENARIO

9.1 Alternative Project Description

Under the Alternative Scenario, the Castlerock Project would remain within the City of San Diego's jurisdiction with utilities and services provided by the City of San Diego. Additional infrastructure would be required because the Project site is physically separated from City of San Diego infrastructure by open space and Mission Trails Regional Park and the City has not maintained or extended any water or wastewater facilities into the Project area. The Project infrastructure components which would be required for the Alternative Scenario are discussed in detail within Section 3.3 below and are summarized as follows:

- Mast Boulevard would be widened to accommodate water and wastewater infrastructure improvements.
- Water and wastewater infrastructure improvements would be provided along West Hills Parkway.
- Water and wastewater infrastructure improvements would require a bridge crossing along West Hills Parkway over the San Diego River. The bridge was designed to accommodate future utilities such as water pipelines.
- An on site wastewater pump station with dual force mains would be provided in order to deliver the wastewater to the off-site gravity main along Mast Boulevard and West Hills Parkway. Construction of a pump station on this 0.2-acre lot means that the Alternative Scenario would eliminate one single family unit from the Proposed Project.
- A 1.78 million gallon water tank would be provided on site at a high water level of 626 feet above MSL in order to provide operational and fire storage per City of San Diego standards.

As shown in Table I, the Alternative Scenario is very similar to the Proposed Project. The Alternative Scenario would have one less single family unit (282 units) because of the requirement to construct a wastewater pump station along the eastern Project boundary. The Alternative Scenario would also have seven less single-family detached units (140 units). Off-site improvements in order to be able to obtain sewer and water service would be required because the City of San Diego does not maintain service adjacent to the Project site. The development area, including BMZ-2, would be slightly larger under the Alternative Scenario at 108.91 acres.

Under the Alternative Scenario, a water tank would be necessary to serve the Castlerock Project and would be located within the MHPA. This is necessary to achieve the required elevation of the tank, which in turn would provide adequate water to Project residents. An MHPA boundary adjustment is being proposed to remove the area disturbed by tank and access road construction from the MHPA. Additional adjustments are proposed to connect and add the existing and restored vernal pools to the MHPA. Other land would be added to the MHPA to ensure no net loss of area. Section 1.4.2 of the MSCP includes policies for construction and maintenance of roads and utilities within the MHPA. Applicable policies are addressed below:

1. There are no existing dirt roads or trails that could be used for the water tank and access road. The tank is sited on the smallest feasible pad and the access road is the shortest possible while still meeting grade requirements. They are located in disturbed coastal sage scrub and avoid all sensitive species with the exception of one San Diego barrel cactus.
2. No wetlands or jurisdictional areas would be disturbed by the construction of the water tank and access road.
3. No staging areas would be located within the MHPA.
4. The water tank and access road are not located within a known wildlife corridor.

Impacts due to the construction of the water tank and access road are addressed below.

9.2 Alternative Project Impacts

9.2.1 Impacts to Vegetation Communities

Development of the Alternative Scenario on the Castlerock site, including portions of BMZ-2, would result in the disturbance to approximately 108.91 acres of on site native and non-native vegetation communities (Table XIII). Brush Management Zone 2 areas total 8.79 acres on and off-site with 6.22 acres within the development area. Similar to the Proposed Project these 8.79 acres include approximately 0.05 acre off-site (Exhibit 10). Approximately 102.69 acres of vegetation on site would be impacted by the Alternative Scenario. The remaining 94.73 acres of the site would be preserved as natural open space

Vernal Pool Preserve

Jurisdictional Mitigation Area

NAP

Vernal Pool
Proposed Restoration Vernal Pool
Watershed

0 80 160 320 Feet

NOTE: Other sensitive species observed throughout the site but not included on this map include graceful tarplant, ashy spike-moss, decumbant goldenbush, San Diego County viguiera, Coronado skink, coast horned lizard, grasshopper sparrow, So. California rufous-crowned sparrow, yellow warbler, Cooper's hawk, northern harrier, white-tailed kite, San Diego black-tailed jackrabbit, and southern mule deer

Natural Resource Consultants. 10 October 2012. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh10_AlternativeScenarioBiologicalImpacts_NRC05_20121010.mxd

- Site Boundary
- Brush Management Zone 1
- Brush Management Zone 2
- Existing MHPA Boundary
- Proposed MHPA Boundary
- Impact Area
- Temporary Impacts
- Corps, CDFG and SD Non-Wetland (GLA)
- Corps, CDFG and SD Wetland (GLA)

Vegetation Type
- Non-Native Grasslands
- Native Grasslands
- Baccharis-Dominated Coastal Sage Scrub
- Coastal Sage Scrub - Coastal Form
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Eucalyptus Woodlands
- Disturbed

Sensitive Wildlife
- Western spadefoot (2003)
- Belding's orange-throated whiptail (2012)
- Northern red rattlesnake (2012)
- Two-striped garter snake (2008)
- California Gnatcatcher (2012)
- San Diego fairy shrimp (GLA 2004 & 2005)

Sensitive Plants
- San Diego barrel cactus (2012)
- Variegated dudleya (2012)
- Palmer's Grapplinghook (2012)
- San Diego goldenstar (2012)
- Robinson's peppergrass (2012)

Basin Features (GLA)
- Emergent Wetland
- Non-Vernal Pool
- Non-Vernal Pool, SD fairy shrimp observed
- Vernal Pool

Exhibit 10: Alternative Scenario Biological Impacts
Castlerock | San Diego County, California

N W E S

0 245 490 980 ft
1:6,133 1 inch = 511 feet

NRC

TABLE XIII
APPROXIMATE ACREAGE OF ON SITE VEGETATION COMMUNITY IMPACTS AND REQUIRED MITIGATION FOR THE ALTERNATIVE SCENARIO

MHCP Tier	Habitat (Vegetation Community)	Total Habitat Outside MHPA	Total Habitat Inside MHPA	Permanent Impacts Outside MHPA	Permanent Impacts Inside MHPA	Temporary Impacts Outside MHPA	Temporary Impacts Inside MHPA	Impact Neutral Brush Mgmt. Zone 2*	Mitigation Ratio for Impacts Outside MHPA	Mitigation Ratio for Impacts Inside MHPA	Required Mitigation Inside MHPA‡
Project On Site Areas											
Wetlands	Vernal Pool	<0.01	0.00	0.00	0.00	0.00	0.00	0.00	---	---	0.00
	Emergent Wetland	0.08	0.10	0.07	0.00	0.00	0.00	0.05	2:1	2:1	0.14
	Coastal and Valley Freshwater Marsh	0.51	0.03	0.00	0.00	0.00	0.00	0.00	---	---	0.00
	Sub Total (Wetlands)	**0.59**	**0.13**	**0.07**	**0.00**	**0.00**	**0.00**	**0.05**	**2:1**	**2:1**	**0.14**
Tier I	Native Grasslands	15.28	4.27	13.12	0.35	0.00	0.00	1.19	1:1	2:1	13.82
	Sub Total (Tier I)	**15.28**	**4.27**	**13.12**	**0.35**	**0.00**	**0.00**	**1.19**	**1:1**	**2:1**	**13.82**
Tier II	Disturbed Coastal Sage Scrub (CSS)	15.02	44.67	13.11	4.31	0.04	0.00	0.34	1:1	1:1	17.46
	CSS – Coastal Form	9.67	11.99	8.16	2.23	0.61	0.60	0.55	1:1	1:1	11.60
	Baccharis-dominated CSS	5.17	0.59	4.61	0.00	0.00	0.00	0.00	1:1	1:1	4.61
	Sub Total (Tier II)	**29.86**	**57.25**	**25.88**	**6.54**	**0.65**	**0.60**	**0.89**	**1:1**	**1:1**	**33.67**
Tier IIIB	Non-native Grasslands	53.89	29.46	44.19	3.23	0.00	0.00	3.85	0.5:1	1:1	25.33
	Sub Total Tier (IIIB)	**53.89**	**29.46**	**44.19**	**3.23**	**0.00**	**0.00**	**3.85**	**0.5:1**	**1:1**	**25.33**
Tier IV	Eucalyptus Woodlands	1.46	0.00	1.46	0.00	0.00	0.00	0.00	0:1	0:1	0.00
	Disturbed/Developed	8.07	3.38	7.37	0.48	0.09	0.09	0.24	0:1	0:1	0.00
	Sub Total (Tier IV)	**9.53**	**3.38**	**8.83**	**0.48**	**0.09**	**0.09**	**0.24**	**0:1**	**0:1**	**0.00**
	TOTAL	**109.15**	**94.49**	**92.09**	**10.60**	**0.74**	**0.69**	**6.22**	**---**	**---**	**73.96**
Water Tank and Access Road †											
Tier II	Disturbed Coastal Sage Scrub	---	---	0.00	1.43	0.00	0.00	---	1:1	1:1	1.43
	Sub Total (Tier II)	**---**	**---**	**0.00**	**1.43**	**0.00**	**0.00**	**---**	**1:1**	**1:1**	**1.43**
Tier IV	Disturbed/Developed	---	---	0.00	0.11	0.00	0.00	---	0:1	0:1	0.00
	Sub Total (Tier IV)	**---**	**---**	**0.00**	**0.11**	**0.00**	**0.00**	**---**	**0:1**	**0:1**	**0.00**
	TOTAL	**---**	**---**	**0.00**	**1.54**	**0.00**	**0.00**	**---**	**---**	**---**	**1.43**

* Only the Brush Management Zone 2 acreage found within the development area and outside of the proposed MHPA is displayed on the table.
‡ Required mitigation was calculated using ratios from the Biology Guidelines for impacts in and out of the MHPA. It is assumed that all mitigation will be inside the MHPA.
† The water tank and access road are shown here for consideration in the MHPA Boundary Adjustment. These acreages are also included in the Project on-site area analysis above.

within the MHPA. Approximately 2.57 acres of BMZ-2 impact neutral vegetation within the MHPA on site would not be used as mitigation land. The majority of the Project impacts (92.09 acres) would occur outside the MHPA; however, 10.60 acres of grading for the Project would be done inside the MHPA as listed in Table XIII and shown in Exhibit 10. Additional impacts to vegetation within the MHPA may occur due to landslide remediation as discussed in Section 6.1.1. An MHPA adjustment for the Alternative Scenario is proposed and discussed below in Section 9.4.

The Alternative Scenario would result in on site impacts to 0.07 acre of emergent wetland, 13.47 acres of native grasslands, 32.42 acres of coastal sage scrub vegetation, 47.42 acres of non-native grasslands, and 9.31 acres of various other communities such as eucalyptus woodlands and disturbed/developed areas.

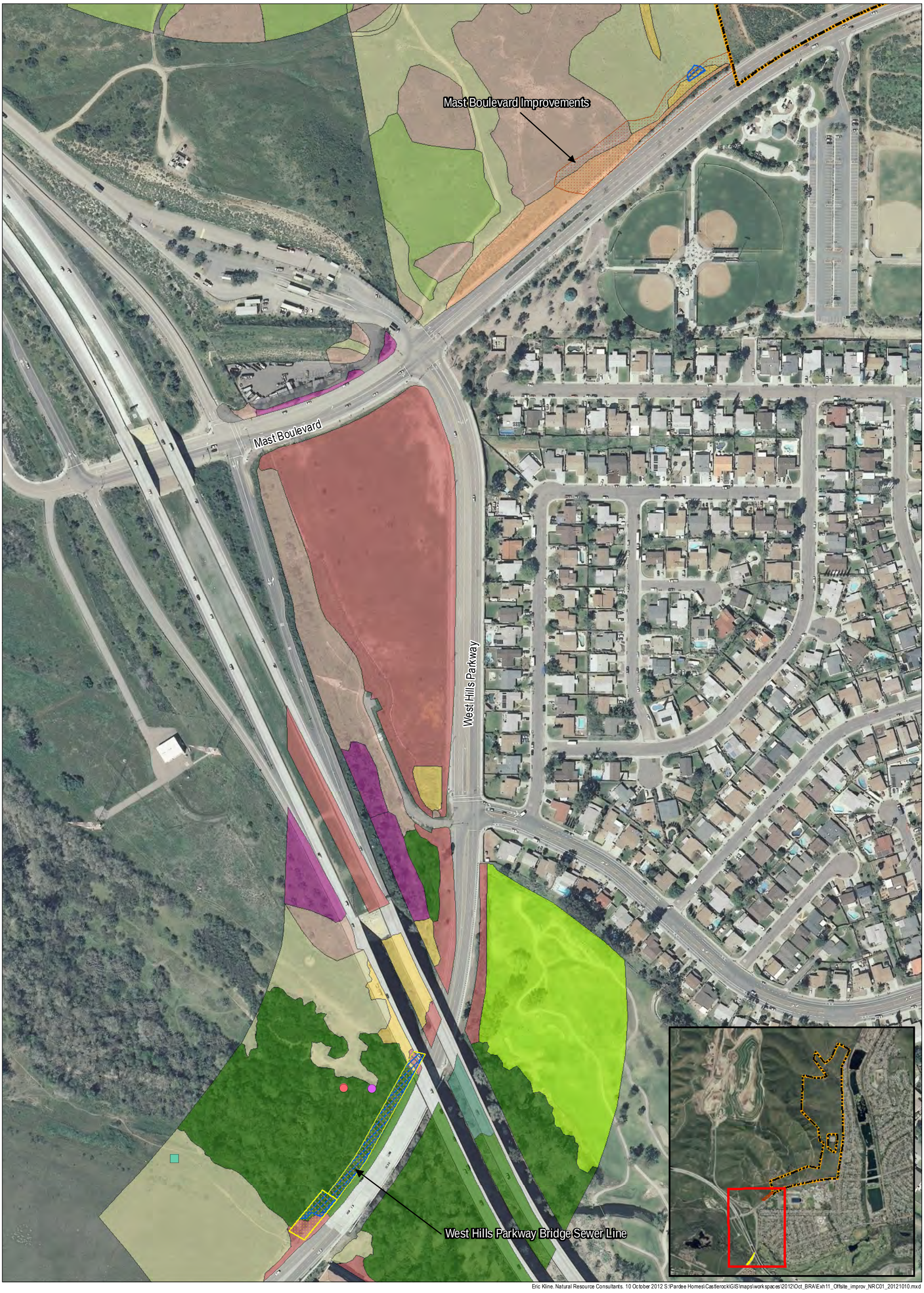
The Alternative Scenario would have an additional 1.43 acres of temporary impacts for water, sewer, and drainage infrastructure in the southwest corner of the site. The temporary impact to coastal sage scrub would be significant without mitigation. To mitigate this temporary impact, this area would be restored to natural conditions and included within the MHPA. A restoration plan has been prepared. These 1.43 acres of temporary impacts consist of 1.25 acres of coastal sage scrub vegetation and 0.18 acre of disturbed/developed area.

Off-site improvements to Mast Boulevard would impact 0.02 acre of southern willow scrub, 0.67 acre of coastal sage scrub vegetation, 0.16 acre of non-native grassland, and 0.17 acre of disturbed/developed (Exhibit 11). Table XIV outlines the off-site impacts associated with the Alternative Scenario which includes the same SDG&E parcel and northern area impacts as in the Proposed Project. The improvements to Mast Boulevard, a Circulation Element Road, are an allowed use for community facilities within the MHPA. Vegetation impacts are potentially significant. No sensitive species have been observed within this impact area, although the coastal sage scrub is potential habitat for California gnatcatchers.

Impacts to City defined wetlands would occur in two off-site locations. The first would be a permanent impact to 0.02 acre of wetland along Mast Boulevard. This is necessary due to the installation/extension of water and sewer lines that are part of the regional system and minor widening of Mast Boulevard, a Circulation Element road.

The second impact would be a temporary impact to 0.52 acre along the San Diego River under West Hills Parkway (Exhibit 11). West Hills Parkway is located southwest of the Project off Mast Boulevard. This temporary impact would allow the installation of a water and sewer line along the sides of the existing bridge across the San Diego River. Use of the existing bridge would avoid permanent vegetation impacts and is less damaging than installing the lines under the river.

Based on draft sewer and water line plans and design alternatives, temporary impacts would occur to (i.e. crushing) approximately 0.43 acre of southern cottonwood willow riparian forest and 0.09 acre of ruderal vegetation in the vicinity of recorded least Bell's vireo and southwestern willow flycatcher locations. These temporary impacts may include breaking small tree branches or crushing parts of shrubs along the west side of the bridge to install the pipe lines. Most of the sparse under story vegetation is made up of exotic species. Planks or boards would be laid over the ground for rubber tire vehicles to drive over to access the bridge. Disturbance to soil and riverbank topology is not anticipated. San Diego ambrosia has been recorded in the vicinity of West Hills Parkway south of the San Diego River. Although no San Diego ambrosia was found in the proposed temporary impact area during focused sensitive plant surveys, the potential for this species to occur remains high. No other sensitive species were observed in the area. Ultimately the off-site utility line improvements may be redesigned to avoid temporary impacts to 0.52 acre near the West Hills Parkway Bridge through hanging utilities from the bridge, however the feasibility of this method has not been determined at this time. Thus temporary impacts are potentially significant.



Eric Kline. Natural Resource Consultants. 10 October 2012 S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2012\Oct_BRA\Exh11_Offsite_improv_NRC01_20121010.mxd

- Site Boundary
- Off-site Permanent Impacts
- Off-site Temporary Impacts
- Corps, CDFG and San Diego Jurisdiction (GLA)

- Coastal Sage Scrub
- Baccharis-dominated Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Southern Cottonwood Willow Riparian Forest
- Disturbed Riparian Forest
- Southern Willow Scrub

- Native Grassland
- Annual Grassland
- Non-native Trees
- Ruderal
- Golf Course
- Disturbed

- San Diego Ambrosia (2007)
- Least Bell's Vireo (2012)
- Southwestern Willow Flycatcher (2012)

N W E S

0 125 250 500 ft

1:3,027 1 inch = 252 feet

Exhibit 11: Off-site Improvement Areas

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TABLE XIV: OFF-SITE VEGETATION (ALTERNATIVE SCENARIO)
APPROXIMATE ACREAGE OF OFF-SITE VEGETATION
COMMUNITY IMPACTS AND REQUIRED MITIGATION FOR THE ALTERNATIVE SCENARIO

Habitat	Impacts Outside MHPA	Mitigation Ratio for Impacts Outside MHPA	Impacts Inside MHPA	Mitigation Ratio for Impacts Inside MHPA	Required Mitigation Inside MHPA*
		Mast Boulevard			
Southern Willow Scrub	0.00	2:1	0.02	2:1	0.04
Coastal Sage Scrub	0.00	1:1	0.67	1:1	0.67
Non-native Grassland	0.00	0.5:1	0.16	1:1	0.16
Disturbed/Developed	0.00	0:1	0.17	0:1	0.00
		SDG&E			
Native Grassland	0.14	1:1	0.00	2:1	0.14
Non-native Grassland	0.43	0.5:1	0.00	1:1	0.22
Eucalyptus Woodland	0.40	0:1	0.00	0:1	0.00
Disturbed/Developed	0.20	0:1	0.00	0:1	0.00
		Northern Area (Street 'E')			
Native Grassland	0.14	1:1	0.00	2:1	0.14
Coastal Sage Scrub	0.13	1:1	0.00	1:1	0.13
Non-native Grassland	0.20	0.5:1	0.10	1:1	0.20
Disturbed/Developed	0.02	0:1	0.00	0:1	0.00
Total Wetland	**0.00**	2:1	**0.02**	2:1	**0.04**
Total Tier I	**0.28**	1:1	**0.00**	2:1	**0.28**
Total Tier II	**0.13**	1:1	**0.67**	1:1	**0.80**
Total Tier III	**0.63**	0.5:1	**0.26**	1:1	**0.58**
Total Tier IV	**0.62**	0:1	**0.17**	0:1	**0.00**
Total	**1.66**		**1.12**		**1.70**

9.2.2 IMPACTS TO SPECIAL STATUS PLANTS

The Alternative Scenario would have a similar impact on special status plants as the Proposed Project. Development of the Alternative Scenario would have the following impact differences that are potentially significant:

- One less San Diego barrel cactus would be impacted within the MHPA (154 total individuals impacted, 40 within the MHPA).
- Approximately 0.06 acre more impact to San Diego goldenstar (3.92 acres of total impact, 0.10 acre within the MHPA).
- Approximately 0.03 acre of Designated Critical Habitat for San Diego ambrosia occurs within the southern edge of the temporary impact area for the West Hills Parkway Bridge off-site improvement. No San Diego ambrosia plants have been observed within this small area at the edge of the riparian forest vegetation or in the immediate vicinity. Much of the area is shaded by the riparian forest and has an understory of disturbed ground with concrete and invasive plant species that provides less than optimal habitat for San Diego ambrosia. Vegetation in this area may be crushed and the soil may be compacted from vehicle traffic, but it is unlikely that vegetation would be removed by the installation of the pipeline along the bridge. Although no

San Diego ambrosia has been observed within this area, impacts to the 0.03 acre of Critical Habitat would be potentially significant.

9.2.3 IMPACTS TO SPECIAL STATUS WILDLIFE

Impacts to special status wildlife species that may occur as a result of the Alternative Scenario would be similar to the Proposed Project including California gnatcatcher, San Diego fairy shrimp and other special status wildlife species. Development of the Alternative Scenario would have the following impact differences that are potentially significant:

- Approximately 2.34 additional acres (including 1.25 acres of temporary impact) of high and low quality coastal sage scrub habitat for the California gnatcatcher and habitat for other sage scrub species would be removed by development of the Alternative Scenario.
- Development of the pipeline along the west side of the West Hills Parkway Bridge may indirectly impact two to four pairs of least Bell's vireo and temporarily impact approximately 0.43 acre of least Bell's vireo Designated Critical Habitat. No trees or shrubs are expected to be removed due to installation of the pipeline along the bridge. Temporary impacts to the southern cottonwood riparian forest vegetation adjacent to the bridge are unlikely to cause direct impacts to least Bell's vireo. Due to the sighting of migrant southwestern willow flycatchers in 2008, 2011, and 2012 there is also potential to indirectly impact this species. These impacts to least Bell's vireo and southwestern willow flycatcher are potentially significant.

9.2.4 IMPACTS TO JURISDICTIONAL WATERS

The Alternative Scenario would have a similar impact on jurisdictional wetlands as the Proposed Project. Two additional significant impacts would occur at the Mast Boulevard and West Hills Parkway Bridge due to additional required off-site infrastructure improvements (Table XV).

Installation/extension of water and sewer lines along the north side of Mast Boulevard and east of West Hills Parkway would impact 0.02 acres of Corps, CDFG, and City of San Diego wetland jurisdiction.

Installation of water and sewer lines along the West Hills Parkway Bridge would cause temporary impacts to 0.30 acres of Corps wetland jurisdiction and City of San Diego wetland jurisdiction, and 0.43 acres of CDFG riparian vegetation. The temporary impacts may consist of vegetation crushing, tree branch breaks, and soil compaction from vehicle travel and equipment use to install utilities along the bridge.

TABLE XV: JURISDICTION IMPACTS (ALTERNATIVE SCENARIO)
ACREAGES OF IMPACTS TO CORPS, CDFG, AND CITY OF SAN DIEGO JURISDICTION FOR THE ALTERNATIVE SCENARIO

Jurisdiction	Non-wetland	Wetland	Total Jurisdiction	Non-wetland Impacts	Wetland Impacts	Total Impacts
Corps (On site)	0.68	0.72	1.40	0.40	0.07	0.47
Corps (Off-site Mast Boulevard)	0.00	0.02	0.02	0.00	0.02	0.02
Corps (Off-site West Hills Pkwy)	0.00	0.30	0.30	0.00	0.30*	0.30*
Corps Total	**0.68**	**1.04**	**1.72**	**0.40**	**0.39**	**0.79**
CDFG (On site)	0.67	0.70	1.37	0.40	0.04	0.44
CDFG (Off-site Mast Boulevard)	0.00	0.02	0.02	0.00	0.02	0.02
CDFG (Off-site West Hills Pkwy)	0.00	0.43	0.43	0.00	0.43*	0.43*
CDFG Total	**0.67**	**1.15**	**1.82**	**0.40**	**0.49**	**0.89**
City (On site)	--	0.72	0.72	--	0.07	0.07
City (Off-site Mast Boulevard)	--	0.02	0.02	--	0.02	0.02
City (Off-site West Hills Pkwy)	--	0.43	0.43	--	0.43*	0.43*
City Total	**--**	**1.17**	**1.17**	**--**	**0.52**	**0.52**

* These impacts are temporary.

9.2.5 IMPACTS TO WILDLIFE MOVEMENT CORRIDORS

Similar to the Proposed Project, development of the Alternative Scenario would not result in any obstruction to wildlife movement corridors in the vicinity of the site. The Alternative Scenario would preserve the integrity of the MHPA and its functionality as contiguous open space for wildlife movement.

9.3 Alternative Project Mitigation

9.3.1 MITIGATION FOR IMPACTS TO VEGETATION COMMUNITIES

As with the Proposed Project, direct impacts associated with this Alternative Scenario, both on and off-site, would be mitigated through the dedication of the appropriate amount of vegetation, in the appropriate Tier, within the MHPA as required in the Biology Guidelines (2009). Mitigation would include approximately 0.18 acre of wetland, 14.10 acres of Tier I, 34.47 acres of Tier II, and 25.91 acres of Tier IIIB vegetation. Restoration for the 1.25 acres of temporary impacts to coastal sage scrub vegetation on site is included in the 34.47 acres of Tier II vegetation. The amount of mitigation is detailed in Tables XIII and XIV.

As with the Proposed Project, the Alternative Scenario would mitigate for sensitive vegetation community impacts on site and off site within the MHPA. On site preservation mitigation would include 4.69 acres of Tier I, 52.27 acres of Tier II, and 31.47 acres of Tier IIIB habitat. Remaining mitigation of 9.41 acres for Tier I (native grassland) would be located off-site within the MHPA in the East Elliot area on land owned by Pardee and come from restored non-native grassland on site. Off-site mitigation is proposed on APN 366-040-39 and would include 5.4 acres of Tier I native grassland. In addition, approximately 4.8 acres of non-native grassland on site is available to be restored to native grassland (for further details see Section 9.4 below). This mitigation would reduce the Alternative Scenario impacts to vegetation communities to below a level of significance.

Accidental removal of plants and trees during the installation of the sewer and water line along the West Hills Parkway Bridge is not anticipated. A biological monitor would be present during construction. To ensure a monitor would be present during any/all construction activities, the applicant shall comply with the mitigation measure Section 7.0.1 General Mitigation. The resident engineer, biological monitor, and City Staff from MMC shall discuss the details of the monitoring and MMC shall ensure enforcement of the monitoring.

9.3.2 MITIGATION FOR INDIRECT IMPACTS

Mitigation for indirect impacts that may occur as a result of the Alternative Scenario would be similar to the Proposed Project. The following additional mitigation would be required for potential indirect impacts to least Bell's vireo and southwestern willow flycatcher as a result of off-site improvements to the West Hills Parkway Bridge.

1. Prior to the issuance of any grading permit, the City Manager (or appointed designee) shall verify that the following Project requirements regarding the least Bell's vireo and southwestern willow flycatcher are shown on the construction plans:

   No clearing, grubbing, grading, or other construction activities shall occur between March 15 and September 15, the breeding season of the least Bell's vireo and May 1 and August 30, the breeding season for the southwestern willow flycatcher, until the following requirements have been met to the satisfaction of the City Manager:

   A. A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) Recovery Permit) shall survey those wetland areas that would be subject to construction noise levels exceeding 60 decibels [dB(a)] hourly average for the presence of least Bell's vireo and southwestern willow flycatcher. Surveys for these species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife service within the breeding season prior to the commencement of construction. If the

least Bell's vireo or southwestern willow flycatcher are present, then the following conditions must be met:

1. Between March 15 and September 15, no clearing, grubbing, or grading of occupied least Bell's vireo and southwestern willow flycatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and

2. Between March 15 and September 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied least Bell's vireo or southwestern willow flycatcher habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City Manager at least two weeks prior to the commencement of construction activities. Prior to the commencement of any of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; or

3. At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) hourly average at the edge of habitat occupied by the least Bell's vireo or southwestern willow flycatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If least Bell's vireo and southwestern willow flycatcher are not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the City Manager and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 and September 15 as follows:

   1. If this evidence indicates the potential is high for least Bell's vireo or southwestern willow flycatcher to be present based on historical records or site conditions, then condition A.III shall be adhered to as specified above.

   2. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

9.3.3 MITIGATION FOR IMPACTS TO SPECIAL STATUS VEGETATION COMMUNITIES

Anticipated Alternative Scenario impacts to wetlands, coastal sage scrub, and native and non-native grasslands would be mitigated to a level that is less than significant by dedication of lands as established by the MSCP.

9.3.4 MITIGATION FOR IMPACTS TO SPECIAL STATUS PLANTS

Three special status plant species anticipated to be removed by the Alternative Scenario (San Diego barrel cactus, variegated dudleya, and San Diego goldenstar) are covered under the MSCP. The following measure would bring the impacts to special status plants associated with the Alternative Scenario to a level below significant.

- Prior to issuance of a grading permit, a qualified biologist would submit a final revegetation plan (see attached) to the City for review and approval by the staffs of EAS and MSCP. This plan would provide for the translocation of San Diego goldenstar from the 0.10 acre to be impacted within the MHPA to suitable areas within the MHPA. If additional San Diego goldenstar is removed due to landslide remediation, preservation would be provided in a nearby parcel (APN 366-040-41) owned by Pardee. The plan would also cover the relocation of the 1,000 square-foot variegated dudleya area and relocation of 40 San Diego barrel cacti to suitable areas within the MHPA. The revegetation plan includes but is not limited to criteria for site preparation, seed and plant collection, planting methods, maintenance and monitoring and success criteria.
- Mitigation for potential temporary impacts to 0.03 acre San Diego ambrosia Designated Critical Habitat would consist of a two-year enhancement plan. A two year management plan would be adequate as the impact area is not occupied by San Diego ambrosia and impacts would not involve vegetation removal. The plan would include monitoring, soil decompaction, and weeding if necessary (RECON 2012a). The area would be monitored and maintained for two years to ensure the vegetation cover remains opens with a low density of non-native plants to allow for proper sunlight and airflow needed by San Diego ambrosia. If vegetation is removed or the ground is disturbed during construction the area would be restored to its original condition. This would include returning the site to its original topography to maintain the existing hydrological dynamics for the ambrosia. These measures are consistent with the Federal Register Special Management Considerations or Protection discussion for Critical Habitat Unit 6 (USFWS 2010). During later development of the detailed construction plans the construction may be designed to avoid the small 0.03 acre area.

9.3.5 MITIGATION FOR IMPACTS TO SPECIAL STATUS WILDLIFE SPECIES

Mitigation for impacts to special status wildlife species as a result of the Alternative Scenario would follow those described above for the Proposed Project. Additional indirect impacts to least Bell's vireo and southwestern willow flycatcher at off-site improvements to the West Hills Parkway Bridge would be addressed through the Project's take authorization should the off–site improvements be incorporated into the Project's final design. The required permit would be obtained prior to commencement of grading. Impacts to least Bell's vireo and southwestern willow flycatcher would be temporary and would be mitigated through avoidance as noted above in Section 9.3.2. If vegetation is removed during temporary impacts to least Bell's vireo Designated Critical Habitat the area would be restored to its original condition in compliance with the Wetland Mitigation Plan (attached).

9.3.6 MITIGATION FOR IMPACTS TO JURISDICTIONAL WATERS

Mitigation for alternative Project impacts would proceed according to permitting requirements of the Corps and CDFG and would be required to be a minimum 2:1 ratio of preservation/creation/ restoration/enhancement for permanent non-wetland impacts and 2:1 ratio of preservation/creation/ restoration/ enhancement for permanent wetland impacts (Table XVI). The 2:1 wetland impact ratio shall include a 1:1 creation component to ensure no net loss of wetlands. Mitigation shall include a minimum of 0.09 acre of wetland creation, 0.09 acre of wetland preservation/enhancement, and 0.80 acre of non-

wetland preservation within the Santee Subarea watershed. Temporary jurisdictional impacts shall be mitigated through restoration of the temporarily impacted area to the existing conditions.

As discussed under the Proposed Project above, the Alternative Scenario mitigation is expected to exceed the City and resource agency mitigation requirements. Wetland mitigation would be provided at a 3:1 ratio with creation, above the required 2:1 preservation/enhancement/creation. The on site 0.37-acre creation area is shown on Exhibit 10 and would be within the MHPA upon approval of the MHPA boundary adjustment. Non-wetland jurisdictional impacts would be mitigated through preserving 0.93 acre of Corps jurisdiction, 0.93 acre of CDFG jurisdiction, and 0.65 acre of City of San Diego wetlands on site. Temporary impacts associated with the West Hills Parkway Bridge utility lines at the San Diego River would be mitigated through restoration of the temporarily affected areas. As indicated in the Wetland Mitigation Plan, a biologist experienced in habitat restoration would direct replacement of removed vegetation with the same species and monitored for five years to ensure success. Disturbance to soil and riverbank topology is not anticipated, but would be restored to its original condition to eliminate any permanent impacts if necessary.

TABLE XVI: JURISDICTION MITIGATION (ALTERNATIVE SCENARIO)
ACREAGES OF ON SITE IMPACTS AND MITIGATION TO CORPS, CDFG, AND CITY JURISDICTION

Jurisdiction	Impacts				Mitigation			
	Permanent Non-wetland	Permanent Wetland	Temporary Wetland	Total	Non-wetland (2:1)[1]	Wetland (2:1)[2]	Temporary Wetland Impacts (1:1)[3]	Total Required
Corps/RWQCB	0.40	0.09	0.30	0.49	0.80	0.18	0.30	1.28
CDFG	0.40	0.06	0.43	0.46	0.80	0.12	0.43	1.35
City of San Diego	-	0.09	0.30	0.09	-	0.18	0.30	0.48

[1] Non-wetland mitigation consists of preservation.
[2] To ensure no net loss of wetland, wetland mitigation is proposed to consist of 1:1 creation and 1:1 preservation.
[3] Temporary wetland impacts would be mitigated through restoration of the affected area.

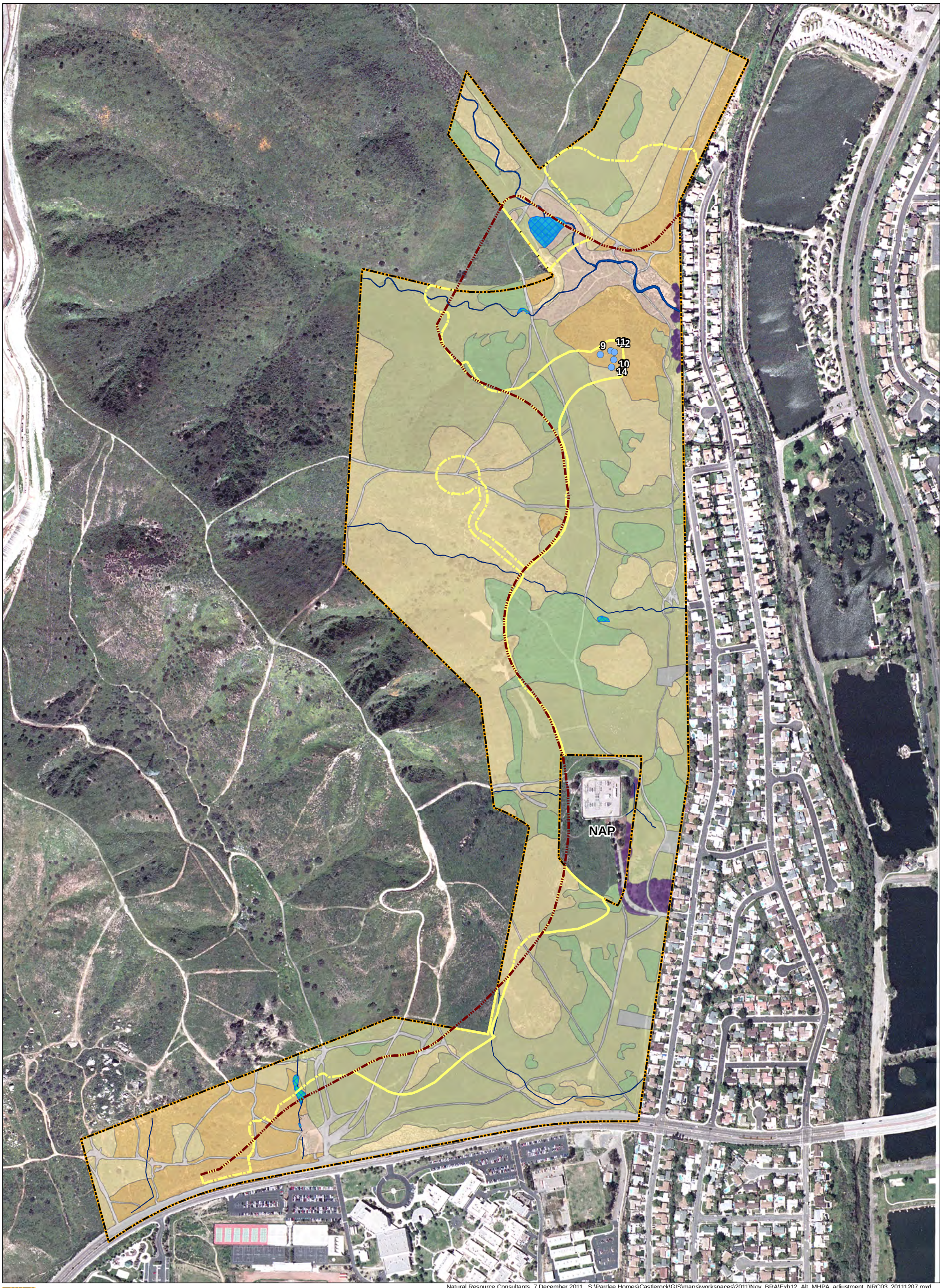
9.4 MHPA Adjustment

The MHPA adjustment would be similar to the Proposed Project except it would remove areas to be disturbed by the construction of a water tank and access road and add areas in the southern end of the site due to less residential lots (Exhibit 12). The area being disturbed by the water tank and access road is the minimum necessary to site the facility. The access road is 20 feet wide, as required by the City. The water tank cannot be located within the development area as there is nowhere with the required elevation. Table XVII summarizes the changes in the MHPA that result from implementation of the Alternative Scenario.

TABLE XVII: EXISTING VS. PROPOSED MHPA BOUNDARY (ALT. SCENARIO) WITHOUT RESTORATION

Habitat Type	MSCP Tier	Total Habitat Inside MSCP Before Boundary Adjustment (acres)	Total Habitat Inside MSCP After Boundary Adjustment (acres)	Net Change in Total Habitat After Boundary
Native Grasslands	I	4.27	4.89	0.62†
Coastal Sage Scrub	II	57.25	53.80	-3.45
Non-native Grasslands	III B	29.46	32.08	2.62
Eucalyptus Woodlands	IV	0.00	0.00	0.00
Wetlands	-	0.13	0.60	0.47
Disturbed/Developed	IV	3.38	3.36	-0.02
TOTAL		**94.49**	**94.73**	**0.24**

† Refer to Table XVIII for the acreages after non-native to native grassland restoration



Natural Resource Consultants. 7 December 2011. S:\Pardee Homes\Castlerock\GIS\maps\workspaces\2011\Nov_BRA\Exh12_Alt_MHPA_adjustment_NRC03_20111207.mxd

- Site Boundary
- Existing MHPA Boundary
- Alternative Scenario Proposed MHPA Boundary
- Corps, CDFG, and San Diego Non-Wetland (GLA)
- Corps, CDFG, and San Diego Wetland (GLA)
- Vernal Pool

Vegetation Type

- Non-Native Grasslands
- Native Grasslands
- Baccharis-Dominated Coastal Sage Scrub
- Coastal Sage Scrub - Coastal Form
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Eucalyptus Woodlands
- Disturbed

N W E S

0 250 500 1,000 ft

1:6,127 1 inch = 511 feet

Exhibit 12: Alternative Scenario MHPA Boundary and Adjustment

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TABLE XVIII: EXISTING VS. PROPOSED MHPA BOUNDARY (ALT. SCENARIO) WITH RESTORATION

Habitat Type	MSCP Tier	Total Habitat Inside MSCP Before Boundary Adjustment (acres)	Total Habitat Inside MSCP After Boundary Adjustment (acres)	Net Change in Total Habitat After Boundary
Native Grasslands	I	4.27	7.72†	3.45†
Coastal Sage Scrub	II	57.25	53.80	-3.45
Non-native Grasslands	III B	29.46	29.25†	-0.21†
Eucalyptus Woodlands	IV	0.00	0.00	0.00
Wetlands	-	0.13	0.60	0.47
Disturbed/Developed	IV	3.38	3.36	-0.02
TOTAL		**94.49**	**94.73**	**0..24**

†Restoration mitigation includes restoring 2.83 acre of non-native grassland on-site within the proposed MHPA boundary to native grassland.

As with the Alternative Scenario, the adjustment would not result in a preserve that is functionally equivalent to the adopted MHPA, as there would be an overall decrease in habitat value. This significant impact to the MHPA would require mitigation. A summary of the MHPA equivalency for the Alternative Scenario, where it differs from the Annexation Scenario, is included below.

- Effects on significantly conserved habitat: Without the proposed native grassland restoration, the adjustment would result in changes to the conservation of Tier I, II, and III habitat noted in Table XVII. The overall size of the MHPA would remain about the same, however there would be a reduction of functionally equivalent habitat if no native grassland restoration occurred. Specifically, there would be a reduction of 3.45 acres of coastal sage scrub (Tier II) and an increase in the amount of native grassland (Tier I) by 0.62 acre and non-native grassland (Tier III) by 2.62 acres. Counting the 0.62 acre of Tier I surplus towards the loss of Tier II (uptiering), the Project would have a loss of 2.83 acres of Tier II habitat. A total of approximately 4.8 acres of non-native grassland (Tier III) is available for restoration and enhancement to native grassland (Tier I) within the lands to be added to the MHPA. To ensure no loss of functionally equivalent habitat, the Project would restore 2.83 acres of Tier IIIB habitat to Tier I habitat (uptiering). Therefore, the total native grassland (Tier I) would total 3.45 acres after restoration and would compensate for the deficit of coastal sage scrub (Tier II) habitat, resulting in the uptiering of 3.45 acres of habitat within the MHPA. In addition, a small area of wetland (0.47 acre) would be added to the MHPA.

  While the Project would result in the loss of 0.21 acre of non-native grassland, this loss is not significant with respect to the overall function of the MHPA. A primary biological function of non-native grassland in the MHPA is to provide foraging habitat for bird species. The proposed increase in native grassland (3.45 acre) in the MHPA would increase foraging area for raptors, grasshopper sparrows, and other grassland dependent species. It should also be noted that the MHPA in this area continues to recover from the 2003 Cedar fire. It is likely that the amount of coastal sage scrub in the MHPA would increase naturally over time.

  The Project would add a 1.92-acre vernal pool preserve area to the MHPA. Restoration and management of the vernal pools would be completed in compliance with a San Diego Fairy Shrimp/Vernal Pool Restoration and Enhancement Plan and a vernal pool management plan (RECON 2011). The conceptual VPMP is consistent with the City's draft Vernal Pool Management Plan. Overall, the proposed inclusion of restored vernal pools occupied by San Diego fairy shrimp would result in a positive change to the MHPA.

  To ensure habitat would remain functionally equivalent within the MHPA, implementation of a native grassland restoration plan would be required as mitigation.

- Effects on covered species: Twenty locations of San Diego barrel cactus (40 individuals) are within the MHPA area that would be impacted by the Alternative Scenario. These 40 barrel cacti would be relocated into appropriate areas within the MHPA as a part of Project mitigation. The proposed adjustment would preserve four additional locations.

  The adjustment would remove two locations of variegated dudleya and add one location. These affected variegated dudleya locations would be relocated into appropriate areas within the MHPA as part of Project mitigation.

  The MHPA adjustment would add 0.75 acre of San Diego goldenstar and remove 0.10 acre from within the existing MHPA. San Diego goldenstar within the 0.10 acre area would be transplanted in accordance with the San Diego goldenstar translocation plan. In addition to the 0.10 acre of goldenstar potentially impacted by Project development, unavoidable landslide remediation would potentially impact 1.5 to 5 acres of MHPA land occupied by San Diego goldenstar. Landslide testing has not been completed to determine the exact acreage of landslide remediation necessary since this area is currently located in the MHPA. While this area would be restored to pre-remediation habitat conditions or better (i.e., coastal sage scrub with scattered grassland species), mitigating 1.5 to 5 acres of San Diego goldenstar through transplantation is not feasible. Thus, proposed mitigation includes preservation of San Diego goldenstar on an off-site parcel (APN 336-040-39) through dedication to the City.

  As discussed above, the Project includes vernal pool restoration in an area to be added to the MHPA. As the restoration component is proposed to mitigate impacts to San Diego fairy shrimp (outside the MHPA), the restored pools would include San Diego fairy shrimp. Restoration and management of the vernal pools would be completed in compliance with a San Diego Fairy Shrimp/Vernal Pool Restoration and Enhancement Plan and a vernal pool management plan. The vernal pool management plan is consistent with the City's draft Vernal Pool Management Plan. Overall, the proposed inclusion of restored vernal pools occupied by San Diego fairy shrimp would result in a positive change to the MHPA.

  The reduction of 3.45 acres of coastal sage scrub habitat would not significantly affect the overall function of the MHPA for the California gnatcatcher and other species that utilize coastal sage scrub. The California gnatcatcher and other scrubland species will utilize other adjacent habitats, such as grasslands, that have overlapping values with coastal sage scrub and may be used for foraging, breeding, or cover. The uptiering of 3.45 acres native grassland in the MHPA would provide a benefit to scrubland species as well as grassland species. In addition, preservation of 53.80 acres of coastal sage scrub within the MHPA exceeds the required mitigation of 34.47 acres.

  With implementation of the proposed San Diego barrel cactus translocation plan, variegated dudleya translocation plan, San Diego goldenstar translocation plan, and the landslide remediation plan, the proposed BLA would have a less than significant effect on covered species.

- Effects on habitat linkages and function of preserve areas: The adjustment would not affect any known habitat linkages or movement corridors. The adjustments would occur on the edge of the existing MHPA boundary line.

- Effects on preserve configuration and management: The adjustment maintains the overall existing preserve configuration. The removal of small amounts of habitat in one area is offset by the addition of other areas along the MHPA boundary. The adjustment would not affect how the City manages the preserve.

- Effects on ecotones and other conditions affecting species diversity: The adjustment conserves habitat shown on the MHPA in the City's MSCP Subarea Plan in generally the same location and configuration as that approved in the original MSCP. The addition of the coastal valley and freshwater marsh to the MHPA would have a beneficial effect by ensuring that a rare wetland and

its surrounding upland vegetation are preserved. The Project would increase the amount of native grassland habitat in the MHPA, preserving and enhancing the ecotone and adding species diversity through restoration of non-native habitat to native habitat.

- Effect to species of concern not on the MSCP covered species list: The adjustment would have no increased effect on the other species of concern that are not on the MSCP Covered Species list. The adjustment would generally preserve the same amount of various vegetation types on site as currently exists, and in generally the same location and configuration.

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APPENDIX A
CASTLEROCK BIOLOGICAL SURVEYS

DATE	TIME, BIOLOGIST	SURVEY INFORMATION
08 December 2000	1200 to 1530 hours - CE, MK, DL	Vegetation Mapping
09 December 2000	1000 to 1600 hours CE	Vegetation Mapping
11 December 2000	0800 to 1600 hours CE	Vegetation Mapping
13 December 2000	0830 to 1100 hours CE	Vegetation Mapping
25 April 2001	0815 to 1215 hours CE, MK	California gnatcatcher survey 1 of 3
28 April 2001	1300 to 1730 hours CE, MK	Special status plant survey
29 April 2001	0830 to 1130 hours CE, MK	Special status plant survey
02 May 2001	0730 to 1230 hours CE, MK	California gnatcatcher survey 2 of 3
09 May 2001	0745 to 1230 hours CE, MK	California gnatcatcher survey 3 of 3
11 May 2001	1330 to 1600 hours CE	Post-disturbance impacts assessment.
16 May 2001	1315 to 1815 hours CE, MK	Post-disturbance impacts assessment.
17 May 2001	0900 to 1200 hours CE	Post-disturbance impacts assessment.
13 June 2001	1500 to 1615 hours CE	Special status plant survey
14 June 2001	1330 to 1600 hours CE	Special status plant survey
15 June 2001	1345 to 1600 hours CE, MK	Special status plant survey
12 July 2002	0740 to 1210 hours, CE, MK	California gnatcatcher survey 1 of 3
19 July 2002	0730 to 1145 hours, CE, MK	California gnatcatcher survey 2 of 3
26 July 2002	0630 to 1100 hours, CE, MK	California gnatcatcher survey 3 of 3
23 January 2003	0930 to 1645 hours, JL	Native grassland sampling, vegetation mapping
24 January 2003	0815 to 1615 hours, JL	Native grassland sampling, vegetation mapping
28 January 2003	0930 to 1700 hours, JL	Vegetation mapping, general wildlife survey
29 January 2003	0915 to 1345 hours, JL	Vegetation mapping, general wildlife survey
7 March 2003	0830 to 1645 hours, JL	Vegetation mapping, general wildlife survey
10 March 2003	1015 to 1730 hours, JL	Vegetation mapping, general wildlife survey
16 May, 2003	0830 to 1345 hours, JL	Focused special status species and general wildlife survey
20 May, 2003	0800 to 1400, JL	Focused special status species and general wildlife survey
21 May, 2003	0645 to 1215 hours, JL	Focused special status species and general wildlife survey
22 May, 2003	0700 to 1230 hours, JL	Focused special status species and general wildlife survey
27 May, 2003	0600 to 1200 hours, JL	Focused special status species and general wildlife survey
30 May, 2003	0545 to 1145 hours, JL	Focused special status species and general wildlife survey
3 June, 2003	0600 to 0800 hours, JL	Focused special status species and general wildlife survey
9 June, 2003	0830 to 1230 hours, JL	Focused special status species and general wildlife survey
15 June, 2003	0900 to 1300 hours, JL	Focused special status species and general wildlife survey
24 June, 2003	0730 to 1430 hours, JL	Focused special status species and general wildlife survey
22 January 2004	1130 to 1600 hours, CE	Post Cedar Fire site assessment and mapping
26 January 2004	0845 to 1315 hours CE	Post Cedar Fire site assessment and mapping
27 January 2004	0845 to 1315 hours CE	Post Cedar Fire site assessment and mapping
28 January 2004	1430 to 1615 hours CE	Post Cedar Fire site assessment and mapping
22 February 2004	1030 to 1400 hours CE	Vegetation mapping and special status plant survey
22 March 2005	0830 to 1345 hours MK	Quino checkerspot butterfly site assessment
26 March 2005	0930-1530 hours MK, EK	Quino checkerspot butterfly adult survey 1 of 5
30 March 2005	0930-1530 hours EK	Vegetation mapping and special status plant survey
2 April 2005	0930-1530 hours MK, EK	Quino checkerspot butterfly adult survey 2 of 5
6 April 2005	0930-1430 hours CE, EK	Vegetation mapping and special status plant survey
11 April 2005	0915-1430 hours MK	Quino checkerspot butterfly adult survey 3 of 5
12 April 2005	0930-1430 hours EK	Vegetation mapping and special status plant survey
18 April 2005	1000-1315 hours MK	Quino checkerspot butterfly adult survey 4 of 5
24 April 2005	1000-1330 hours MK	Quino checkerspot butterfly adult survey 5 of 5
26 March 2006	0900-1300 hours MK	Quino checkerspot butterfly site assessment
2 April 2006	1000-1430 hours MK	Quino checkerspot butterfly adult survey 1 of 5
8 April 2006	1200-1630 hours MK	Quino checkerspot butterfly adult survey 2 of 5
16 April 2006	1030-1430 hours MK	Quino checkerspot butterfly adult survey 3 of 5
28 April 2006	0930-1300 hours MK	Quino checkerspot butterfly adult survey 4 of 5
5 May 2006	1130-1500 hours MK	Quino checkerspot butterfly adult survey 5 of 5
12 May 2006	0845-1245 hours EK, CE	Native grassland assessment
15 May 2006	0830-1515 hours EK	Off-site vegetation mapping and grassland assessment
26 May 2006	1045-1415 hours EK	Off-site vegetation mapping and grassland assessment
14 June 2006	0800-1200 hours CE	Off-site vegetation mapping and grassland assessment

DATE	TIME, BIOLOGIST	SURVEY INFORMATION
16 June 2006	0915-1245 hours EK	Off-site vegetation mapping and sensitive species survey
20 June 2006	0915-1045 hours EK	Off-site vegetation mapping and sensitive species survey
21 June 2006	0800-1200 hours CE	Off-site vegetation mapping and grassland assessment
22 June 2006	0930-1700 hours EK	Off-site vegetation mapping and grassland assessment
23 June 2006	0800-1300 hours CE	Off-site vegetation mapping and grassland assessment
25 August 2006	1345-1545 hours EK, CE	Sensitive plant survey
15 March 2007	1115 –1315 hours MK, EK	Quino checkerspot butterfly site assessment
24 March 2007	0900 – 1530 hours MK, EK	Quino checkerspot butterfly adult survey 1 of 5
1 April 2007	0930 – 1500 hours MK	Quino checkerspot butterfly adult survey 2 of 5
21 April 2007	1315 – 1545 hours MK	Quino checkerspot butterfly adult survey 3 of 5
22 April 2007	1045 – 1415 hours MK, EK	Quino checkerspot butterfly adult survey continued
3 May 2007	1230 – 1500 hours MK	Quino checkerspot butterfly adult survey 4 of 5
6 May 2007	0845 – 1145 hours MK, EK	Quino checkerspot butterfly adult survey continued
9 May 2007	0815 – 1215 hours MK, EK	Quino checkerspot butterfly adult survey 5 of 5
7 June 2007	1215 – 1425 hours EK	Sensitive plant survey
15 February 2008	1200 – 1630 hours, EK	Quino checkerspot butterfly site assessment
22 February 2008	1430 – 1630 hours, EK	Quino checkerspot butterfly site assessment
10 March 2008	1100 – 1615 hours, EK	Quino checkerspot butterfly adult survey 1 of 5
19 March 2008	1045 – 1615 hours, EK	Quino checkerspot butterfly adult survey 2 of 5
27 March 2008	0915 – 1500 hours, MK	Quino checkerspot butterfly adult survey 3 of 5
5 April 2008	1330 – 1650 hours, EK	Quino checkerspot butterfly adult survey 4 of 5
6 April 2008	1330 – 1530 hours, EK	Quino checkerspot butterfly adult survey continued
12 April 2008	0915 – 1415 hours, EK	Quino checkerspot butterfly adult survey 5 of 5
23 April 2008	0715 – 0825 hours, RB, EK, ME	LBV survey #1
2 May 2008	1410 – 1825 hours TS, EK	Sensitive plant survey
5 May 2008	0700 – 0810 hours, EK	LBV survey #2
14 May 2008	0557 - 0700 hours, RB	LBV survey #3 / SWF survey #1
28 May 2008	0945 – 1100 hours, RB	LBV survey #4 / SWF survey #2
5 June 2008	0955 – 1100 hours, RB	LBV survey #5 / SWF survey #3
17 June 2008	0945 – 1100 hours, RB, EK	LBV survey #6 / SWF survey #4
26 June 2008	0945 – 1100 hours, RB	LBV survey #7 / SWF survey #5
9 July 2008	0945 – 1055 hours, RB	LBV survey #8 / SWF survey #6
26 February 2008	1100 - 1545 hours, EK	Quino checkerspot butterfly adult survey 1 of 6
4 March 2008	1230 - 1500 hours, EK	Quino checkerspot butterfly adult survey continued
11 March 2008	1500 - 1630 hours, EK	Quino checkerspot butterfly adult survey 2 of 6
13 March 2008	1115 - 1515 hours, EK	Quino checkerspot butterfly adult survey continued
19 March 2008	1130 - 1640 hours, EK	Quino checkerspot butterfly adult survey 3 of 6
25 March 2008	1030 - 1600 hours, EK	Quino checkerspot butterfly adult survey 4 of 6
2 April 2008	1300 - 1400 hours, EK	Quino checkerspot butterfly adult survey continued
5 April 2008	1030 – 1440 hours, EK	Quino checkerspot butterfly adult survey 5 of 6
12 April 2008	1020 – 1520 hours, EK	Quino checkerspot butterfly adult survey 6 of 6
14 April 2009	0930 - 1100 hours, RB	LBV survey #1
28 April 2009	0955 - 1105 hours, EK	LBV survey #2
30 April 2009	0900 – 1700 hours, EK	Sensitive plant survey
8 May 2009	1000 - 1100 hours, EK	LBV survey #3
18 May 2009	1000 - 1115 hours, RB	LBV survey #4 / SWF survey #1
29 May 2009	0850 - 1055 hours, RB	LBV survey #5 / SWF survey #2
12 June 2009	0910 - 1100 hours, RB	LBV survey #6 / SWF survey #3
22 June 2009	0930 - 1100 hours, RB	LBV survey #7 / SWF survey #4
29 June 2009	0900 - 1100 hours, RB	SWF survey #5
15 July 2009	0930 - 1100 hours, RB	LBV survey #8/SWF survey #6
4 March 2010	1230 - 1600 hours, EK	Quino checkerspot butterfly adult survey 1 of 6
5 March 2010	1015 - 1430 hours, EK	Quino checkerspot butterfly adult survey continued
12 March 2010	1000 - 1600 hours, EK	Quino checkerspot butterfly adult survey 2 of 6
19 March 2010	1030 - 1600 hours, EK	Quino checkerspot butterfly adult survey 3 of 6
29 March 2010	1030 - 1600 hours, EK	Quino checkerspot butterfly adult survey 4 of 6
8 April 2010	0950 - 1510 hours, EK	Quino checkerspot butterfly adult survey 5 of 6
12 April 2010	0930 – 1100 hours, RB	LBV survey #1
14 April 2010	1030 – 1530 hours, EK	Quino checkerspot butterfly adult survey 6 of 6
22 April 2010	0930 – 1100 hours, RB	LBV survey #2
24 June 2010	0800 – 1800 hours, MP	Sensitive plant survey

DATE	TIME, BIOLOGIST	SURVEY INFORMATION
26 June 2010	0900 – 1500 hours, MC	Hermes Copper Butterfly Survey 1 of 4
3 May 2010	0930 – 1100 hours, RB	LBV survey #3
16 May 2010	0930 – 1100 hours, RB	LBV survey #4 / SWF survey #1
29 May 2010	0930 – 1100 hours, RB	LBV survey #5 / SWF survey #2
11 June 2010	0930 – 1100 hours, RB	LBV survey #6 / SWF survey #3
30 June 2010	0930 – 1100 hours, RB	LBV survey #7 / SWF survey #4
1 July 2010	0815 - 1215 hours, EK	California gnatcatcher survey 1 of 3
1 July 2010	0800 – 1700 hours, MP	Sensitive plant survey
3 July 2010	0900 – 1500 hours, MC	Hermes Copper Butterfly Survey 2 of 4
9 July 2010	0740 - 1200 hours, EK	California gnatcatcher survey 2 of 3
9 July 2010	0700 – 1730 hours, MP	Sensitive plant survey
10 July 2010	0900 – 1500 hours, MC	Hermes Copper Butterfly Survey 3 of 4
12 July 2010	0930 – 1100 hours, RB	LBV survey #8 / SWF survey #5
12 July 2010	0800 – 1330 hours, MP	Sensitive plant survey and vegetation mapping
13 July 2010	0830 – 1730 hours, MP	Vegetation mapping off-site
14 July 2010	0830 – 1900 hours, MP	Sensitive plant survey and vegetation mapping on and off-site
16 July 2010	0830 – 1730 hours, MP	Sensitive plant survey and vegetation mapping on and off-site
17July 2010	0900 – 1500 hours, MC	Hermes Copper Butterfly Survey 4 of 4
27 July 2010	0800 - 1145 hours, EK	California gnatcatcher survey 3 of 3
14 February 2011	0915 – 1500 hours, MC	Quino checkerspot butterfly adult survey 1 of 6
4 March 2011	0900 – 1500 hours, MC	Quino checkerspot butterfly adult survey 2 of 6
11 March 2011	0900 – 1500 hours, MC	Quino checkerspot butterfly adult survey 3 of 6
17 March 2011	0900 – 1500 hours, MC	Quino checkerspot butterfly adult survey 4 of 6
31 March 2011	0900 – 1600 hours, JG	Quino checkerspot butterfly adult survey 5 of 6
12 April 2011	1030 – 1600 hours, EK	Quino checkerspot butterfly adult survey 6 of 6
13 April 2011	0645 – 0800 hours, EK	LBV survey #1
25 April 2011	0700 – 0800 hours, EK	LBV Survey #2
10 May 2011	0950 – 1100 hours, EK	LBV Survey #3
18 May 2011	0900 – 1700 hours, MP	Sensitive plant survey on and off-site
25 May 2011	0600 – 0815 hours, KG	LBV survey #4 / SWF survey #1
31 May 2011	0830 – 1530 hours, JG	Hermes Copper Butterfly Survey 1 of 4
6 June 2011	0700 – 0930 hours, KG	LBV survey #5 / SWF survey #2
7 June 2011	0945 – 1600 hours, JG	Hermes Copper Butterfly Survey 2 of 4
14 June 2011	1000 – 1200 hours, KG	LBV survey #6 / SWF survey #3
21 June 2011	0940 – 1600 hours, JG	Hermes Copper Butterfly Survey 3 of 4
28 June 2011	1030 – 1630 hours, JG	Hermes Copper Butterfly Survey 4 of 4
7 July 2011	1030 – 1300 hours, KG	LBV survey #7 / SWF survey #4
15 July 2011	0530 – 0800 hours, KG	LBV survey #8 / SWF survey #5
3 March 2012	1000 – 1530 hours, EK	Quino checkerspot butterfly adult survey 1 of 6
12 March 2012	0900 – 1600 hours, MP	Sensitive plant survey on and off-site
14 March 2012	1005 – 1530 hours, JG	Quino checkerspot butterfly adult survey 2 of 6
21 March 2012	1010 – 1400 hours, EK	Quino checkerspot butterfly adult survey 3 of 6
25 March 2012	1005 – 1120 hours, EK	Quino checkerspot butterfly adult survey 3 of 6 continued
30 March 2012	1020 – 1620 hours, JG	Quino checkerspot butterfly adult survey 4 of 6
10 April 2012	1010 – 1550 hours, JG	Quino checkerspot butterfly adult survey 5 of 6
16 April 2012	0945 – 1100 hours, EK	LBV survey #1
18 April 2012	1400 – 1615 hours, EK	Quino checkerspot butterfly adult survey 6 of 6
27 April 2012	1215 – 1440 hours, EK	Quino checkerspot butterfly adult survey 6 of 6 continued
4 May 2012	0930 – 1040 hours, EK	LBV Survey #2
14 May 2012	0945 – 1100 hours, EK	LBV Survey #3
21 May 2012	0920 – 1020 hours, LJ	LBV survey #4 / SWF survey #1
21 May 2012	0800 – 1130 hours, EK	California gnatcatcher survey 1 of 3
30 May 2012	0935 – 1545 hours, JG	Hermes Copper Butterfly Survey 1 of 4
3 June 2012	0910 – 1015 hours, LJ	LBV survey #5 / SWF survey #2
13 June 2012	0850 – 1000 hours, LJ	LBV survey #6 / SWF survey #3
15 June 2012	1025 – 1445 hours, JG	Hermes Copper Butterfly Survey 2 of 4
22 June 2012	1018 – 1535 hours, JG	Hermes Copper Butterfly Survey 3 of 4
22 June 2012	0745 - 1215 hours, EK	California gnatcatcher survey 2 of 3
3 July 2012	1015 – 1515 hours, JG	Hermes Copper Butterfly Survey 4 of 4
3 July 2012	0730 – 1130 hours, EK	California gnatcatcher survey 3 of 3
4 July 2012	0915 – 1020 hours, LJ	LBV survey #7 / SWF survey #4

DATE	TIME, BIOLOGIST	SURVEY INFORMATION
14 July 2012	0910 – 1020 hours, LJ	LBV survey #8 / SWF survey #5

DL − David Levine, CE – Claude Edwards (TE 814215-3), EK – Eric Kline (TE 110373-0), MK – Mike Klein (TE 039305-2), JL – John Lovio, ME – Marcus England, RB – Robert Bates (TE-154963-0), TS – Teresa Salvato, MP – Mitch Provance , MC – Michael Couffer (TE 110373-2), JG – Jeremiah George, KG – Kelly Goocher (TE 098994-3)

LBV – least Bell's vireo, SWF – southwestern willow flycatcher

APPENDIX B
CASTLEROCK FLORAL COMPENDIUM

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
FERNS AND FERN ALLIES	
PTERIDACEAE – BRAKE FERN FAMILY	
Pentagramma triangularis ssp. *maxonii*	Maxon's gold back fern
Pentagramma triangularis ssp. *viscose*	sticky gold back fern
Pellaea andromedifolia	coffee cliffbrake
SELAGINELLACEAE – SPIKE-MOSS FAMILY	
Selaginella bigelovii	Bigelow's spike-moss
Selaginella cinerascens	ashy spike-moss
GYMNOSPERMS	
PINACEAE – PINE FAMILY	
**Pinus canariensis*	Canary Island pine
ANGIOSPERMS: DICOTYLEDONS	
ADOXACEAE – ELDERBERRY FAMILY	
Sambucus mexicana	Mexican elderberry
AIZOACEAE – FIG-MARIGOLD FAMILY	
**Carpobrotus chilensis*	sea-fig
ANACARDIACEAE – SUMAC OR CASHEW FAMILY	
Malosma laurina	laurel sumac
Rhus integrifolia	lemonadeberry
**Schinus molle*	Peruvian peppertree
Toxicodendron diversilobum	poison oak
APIACEAE – CARROT FAMILY	
Apiastrum angustifolium	mock parsley
Daucus pusillus	American wild carrot
**Foeniculum vulgare*	fennel
Lomatium dasycarpum	woolly fruited lomatium
Sanicula bipinnatifida	purple sanicle
Yabea microcarpa	yabea
APOCYNACEAE – DOGBANE FAMILY	
**Nerium oleander*	oleander
ASCLEPIADACEAE – MILKWEED FAMILY	
Asclepias fascicularis	narrow-leaf milkweed

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
ASTERACEAE – SUNFLOWER FAMILY	
Acourtia microcephala	sacapellote
Ambrosia acanthicarpa	annual bur-sage
Ambrosia psilostachya	western ragweed
Artemisia californica	California sagebrush
Artemisia dracunculus	tarragon
Baccharis salicifolia	mule fat
Baccharis sarothroides	broom baccharis
Brickellia californica	California brickellbush
Calycadenia tenella	false rosinweed
**Carduus pycnocephala*	Italian thistle
**Centaurea melitensis*	tocalote
**Cotula coronopifolia*	common brassbuttons
**Cotula australis*	Australian cotula
**Cynara cardunculus*	cardoon
Encelia californica	California encelia
Erigeron foliosus var. *foliosus*	leafy daisy
Eriophyllum confertiflorum	golden yarrow
Filago californicum	California filago
**Filago gallica*	narrow-leaved cottonrose
**Gazania linearis*	Gazania
Pseudognaphalium bioletti	two-colored rabbit-tobacco
Pseudognaphalium californicum	ladies tobacco
Pseudognaphalium beneolens	everlasting cudweed
Gnaphalium palustre	western marsh cudweed
Pseudognaphalium stramineum	cottonbatting plant
Gutierrezia californica	California matchweed
**Hedypnois cretica*	Cretanweed
Helianthus annuus	common sunflower
Heterotheca grandiflora	telegraph weed
Deinandra fasciculata	fascicled tarplant
Holocarpha virgata ssp. *elongata*	graceful tarplant
Isocoma menziesii var. *decumbens*	decumbent goldenbush
Isocoma menziesii var. *vernonioides*	coastal goldenbush
**Lactuca serriola*	prickly lettuce
Lasthenia californica	coast goldfields
Corethrogyne filaginifolia	California aster
Pluchea sericea	arrowweed
Psilocarphus brevissimus var. *brevissimus*	woolly marbles
Psilocarphus tenellus	slender wooly heads
**Sonchus asper*	prickly sowthistle
**Sonchus oleraceus*	common sowthistle
Stephanomeria diegensis	San Diego wirelettuce
Stylocline gnaphaloides	everlasting neststraw
**Taraxacum officinale*	common dandelion
Viguiera laciniata	San Diego County viguiera
**Xanthium strumarium*	rough cockleburr

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
BORAGINACEAE – BORAGE FAMILY	
Amsinckia intermedia	common fiddleneck
Cryptantha cf. *intermedia*	common cryptantha
Harpagonella palmeri	Palmer's grapplinghook
Pectocarya penicillata	winged combseed
Plagiobothrys sp.	popcornflower
BRASSICACEAE – MUSTARD FAMILY	
Cardamine hirsuta	hairy bittercress
**Brassica nigra*	black mustard
**Hirshfeldia incana*	short-podded mustard
Lepidium strictum	upright pepperweed
Lepidium nitidum var. *nitidum*	shining pepperweed
Lepidium virginicum var. *robinsonii*	Robinson's pepperweed
CACTACEAE – CACTUS FAMILY	
Cylindropuntia prolifera	coastal cholla
Ferocactus viridescens	San Diego barrel cactus
Opuntia littoralis	coastal prickly pear
CALLITRICHACEAE –	
Callitriche heterophylla var. *bolanderi*	Bolander's water starwort
Callitriche marginata	winged water starwort
CAPRIFOLIACEAE – HONEYSUCKLE FAMILY	
Lonicera subspicata var. *denudata*	chaparral honeysuckle
CARYOPHYLACEAE – PINK FAMILY	
Lilaea scillioides	flowering quillwort
**Silene gallica*	small-flowered catchfly
**Spergularia villosa*	villous sand spurry
Spergularia marina	salt marsh sand spurry
**Stellaria media*	chickweed
CHENOPODIACEAE – GOOSEFOOT FAMILY	
**Atriplex semibaccata*	Australian saltbush
**Chenopodium murale*	nettle leaf goosefoot
**Salsola tragus*	Russian thistle
CONVOLVULACEAE – MORNING-GLORY FAMILY	
Calystegia macrostegia ssp. *macrostegia*	California morning glory
CRASSULACEAE – STONECROP FAMILY	
Crassula connata	sand pygmyweed
**Crassula tillaea*	Mediterranean pygmy weed
Dudleya pulverulenta	chalk dudleya
Dudleya edulis	lady fingers
Dudleya variegata	variegated dudleya

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
CUCURBITACEAE – GOURD FAMILY	
Marah macrocarpus var. *macrocarpus*	wild cucumber
CUSCUTACEAE – DODDER FAMILY	
Cuscuta californica	chaparral dodder
ERICACEAE – HEATH FAMILY	
Xylococcus bicolor	mission manzanita
EUPHORBIACEAE – SPURGE FAMILY	
Eremocarpus setigerus	dove weed
Euphorbia polycarpa var. *hirtella*	hairy small seeded spurge
FABACEAE – LEGUME FAMILY	
**Acacia* cf. *longifolia*	Sydney golden wattle
Astragalus gambelianus	Gambel's dwarf milkvetch
Astragalus trichopodus var. *lonchus*	Southern California milkvetch
Lathyrus vestitus var. *alefeldii*	San Diego Sweet Pea
Lotus hamatus	San Diego birdsfoot trefoil
Lotus purshianus	Pursh's lotus
Lotus scoparius	deerweed
Lotus strigosus	Bishop’s lotus
Lupinus hirsutissimus	stinging lupine
Lupinus sparsiflorus	Coulter’s lupine
**Melilotus alba*	white sweetclover
**Melilotus indicus*	annual yellow sweetclover
**Trifolium hirtum*	rose clover
FAGACEAE – OAK FAMILY	
Quercus berberidifolia	California scrub oak
GENTIANACEA – GENTIAN FAMILY	
Centaurium venustum	canchalagua
GERANIACEAE – GERANIUM FAMILY	
**Erodium cicutarium*	red-stemmed filaree
**Erodium botrys*	longbeak stork's bill
Geranium carolinianum	Carolina geranium
GROSSULARIACEAE – GOOSEBERRY FAMILY	
Ribes indecorum	white flowering currant
Ribes speciosum	fuchsia-flowered gooseberry
HYDROPHYLLACEAE – WATERLEAF FAMILY	
Heliotropium curassavicum	salt heliotrope
Nemophila menziesii	baby blue eyes
Phacelia cicutaria	caterpillar phacelia
Phacelia distans	distant phacelia

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
JUNCAGINACEAE – ARROWGRASS FAMILY	
Triglochin scilloides	flowering-quillwort
LAMIACEAE – MINT FAMILY	
**Marrubium vulgare*	horehound
Salvia apiana	white sage
Salvia columbariae	chia
Salvia mellifera	black sage
Trichostema lanceolatum	vinegarweed
LYTHRACEAE – LOOSESTRIFE FAMILY	
Lythrum californicum	California loosestrife
**Lythrum hyssopifolia*	hyssop loosestrife
MALVACAEAE – MALLOW FAMILY	
Malacothamnus densiflorus	yellowstem bushmallow
Sidalcea malvaeflora	checkerbloom
MYRTACEAE – MYRTLE FAMILY	
**Eucalyptus sideroxylon*	red ironbark
NYCTAGINACEAE – FOUR O'CLOCK FAMILY	
Mirabilis laevis var. *crassifolia*	California wishbone plant
ONAGRACEAE – EVENING PRIMROSE FAMILY	
Camissonia bistorta	California sun cup
Clarkia purpurea	winecup clarkia
Epilobium canum	California fuchsia
PAPAVERACEAE – POPPY FAMILY	
Eschscholzia californica	California poppy
PLANTAGINACEAE – PLANTAIN FAMILY	
Plantago erecta	dot-seed plantain
PLATANACEAE – SYCAMORE FAMILY	
Platanus racemosa	western sycamore
POLEMONIACEAE - PHLOX FAMILY	
Linanthus dianthiflorus	ground-pink
Eriastrum filifolium	lavender woollystar
Navarretia atractyloides	holly leaf navarretia
POLYGONACEAE – BUCKWHEAT FAMILY	
Chorizanthe fimbriata var. *fimbriata*	fringed spineflower
Eriogonum elongatum var. *elongatum*	wand buckwheat
Eriogonum fasciculatum var. *foliolosum*	California buckwheat
Eriogonum gracile	slender buckwheat
**Rumex crispus*	curly dock

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
Rumex salicifolius	willow dock
PORTULACACEAE – PURSLANE FAMILY	
Calandrinia ciliata	red maids
Claytonia perfoliata	miner's lettuce
PRIMULACEAE – PRIMROSE FAMILY	
**Anagallis arvensis*	scarlet pimpernel
Anagalis minima	chaffweed
Dodecatheon clevelandii ssp. *clevelandii*	Cleveland's shooting star
RANUNCULACEAE – CROWFOOT FAMILY	
Clematis pauciflora	ropevine
Delphinium sp.	larkspur
RHAMNACEAE – BUCKTHORN FAMILY	
Rhamnus crocea	spiny redberry
Rhamnus illicifolia	hollyleaf redberry
ROSACEAE – ROSE FAMILY	
Adenostoma fasciculatum	chamise
Heteromeles arbutifolia	toyon
Prunus illicifolia	holly-leaved cherry
RUBIACEAE – MADDER FAMILY	
Galium angustifolium	narrow-leaved bedstraw
SALICACEAE – WILLOW FAMILY	
Populus fremontii	Fremont cottonwood
Salix gooddingii	black willow
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
SAPINDACEAE – SOAPBERRY FAMILY	
Acer negundo	box elder
SCROPHULARIACEAE – FIGWORT FAMILY	
Antirrhinum nuttallianum	Nuttall's snapdragon
Castilleja exserta	purple owl's clover
Collinsia heterophylla	Chinese houses
Mimulus aurantiacus var. *puniceus*	bush monkeyflower
Mimulus guttatus	seep monkeyflower
Mimulus pilosus	downy monkeyflower
Scrophularia californica ssp. *floribunda*	California figwort
SOLANACEAE – NIGHTSHADE FAMILY	
Solanum americanum	American black nightshade
Solanum douglasii	Douglas' nightshade

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
TAMARICACEAE – TAMARISK FAMILY	
**Tamarix* cf. *ramosissima*	salt cedar
VIOLACEAE – VIOLET FAMILY	
Viola pedunculata	Johnny jump-up
ANGIOSPERMS: MONOCOTYLEDONS	
CYPERACEAE – SEDGE FAMILY	
Eleocharis macrostachya	pale spike-rush
IRIDACEAE – IRIS FAMILY	
Sisyrinchium bellum	western blue-eyed grass
JUNCACEAE – RUSH FAMILY	
Juncus balticus	Baltic rush
Juncus bufonius	toad rush
Juncus dubius	Mariposa rush
Juncus mexicanus	Mexican rush
LILIACEAE – LILY FAMILY	
**Agave americana*	century plant
Allium haematochiton	redskin onion
Bloomeria clevelandii	San Diego goldenstar
Bloomeria crocea	common goldenstar
Brodiaea cf. *jolonensis*	chaparral brodiaea
Calochortus splendens	splendid mariposa lily
Calochortus weedii var. *weedii*	Weed's mariposa lily
Chlorogalum parviflorum	small-flowered soap plant
Dichelostemma capitatum ssp. *capitatum*	blue dicks
Fritillaria biflora	chocolate lily
Toxicoscordion fremontii	Fremont's star lily
POACEAE – GRASS FAMILY	
**Avena fatua*	wild oat
**Avena barbata*	slender wild oats
**Brachypodium distachyon*	purple false brome
Bromus carinatus	California brome
**Bromus diandrus*	ripgut grass
**Bromus hordeaceus*	soft chess
**Bromus madritensis* ssp. *rubens*	foxtail chess
**Bromus sterilis*	poverty brome
**Cynodon dactylon*	Bermuda grass
Deschampsita danthonioides	annual hairgrass
Distichlis spicata	saltgrass
**Echinochloa* sp.	barnyard millet
**Gastridium ventricosum*	nit grass
**Hordeum marinum*	seaside barley
**Hordeum murinum*	mouse barley

SCIENTIFIC NAME (* introduced/nonnative species)	**COMMON NAME**
**Hordeum vulgare*	common barley
Koeleria macrantha	prarie junegrass
**Lamarckia aurea*	goldentops
**Lolium perenne* ssp. *multiflorum*	Italian ryegrass
Melica imperfecta	California melic
Muhlenbergia microsperma	littleseed muhly
Muhlenbergia rigens	deergrass
Stipa lepida	foothill needlegrass
Stipa pulchra	purple needlegrass
Phalaris sp.	canarygrass
**Piptatherum mileaceum*	rice grass
Poa secunda	Sandberg's bluegrass
**Polypogon monspeliensis*	rabbit-foot grass
**Vulpia myuros*	rattail fescue
TYPHACEAE – CATTAIL FAMILY	
Typha domingensis	southern cattail

APPENDIX C
CASTLEROCK FAUNAL COMPENDIUM

SCIENTIFIC NAME	COMMON NAME
ARANEAE – SPIDERS	
Agelenopsis operta.	funnel spider
Aphonopelma sp.	tarantula
Bothriocyrtum californicum	trapdoor spider
INSECTA	
ODONATA – DRAGONFLIES & DAMSELFLIES	
Erythemis collocata	western pondhawk
Enallagma sp.	bluet sp.
Ischnura barberi	desert forktail
Sympetrum illotum	cardinal meadowhawk
Sympetrum corruptum	variegated meadowhawk
DERMAPTERA – EARWIGS	
FORFICULIDAE – COMMON EARWIG	
Forficula auricularia	European earwig
ORTHOPTERA – GRASSHOPPERS, CRICKETS & KATYDIDS	
ACRIDIDAE – SHORT-HORNED GRASSHOPPER	
Trimerotropis pallidipennis	pallid band-winged grasshopper
Leprus intermedius	blue band-winged grasshopper
GRYLLIDAE – CRICKETS	
Gryllus sp.	field cricket
TETTIGONIIDAE – KATYDIDS	
Idiostatus aequalis	chaparral shield-backed katydid
MANTODEA – PRAYING MANTIDS	
MANTIDAE – MANTIDS	
Stagmomantis californica	California mantid
HEMIPTERA – TRUE BUGS	
REDUVIIDAE – ASSASSIN BUG	
Apiomerus crassipes	bee assassin bug
MIRIDAE – PLANT BUG	
Family *Miridae*	plant bug
HOMOPTERA – CICADAS, LEAFHOPPERS & ALLIES	
CICADIDAE	
Okanagana vanduzeei	Vanduzee's cicada
LEPIDOPTERA – BUTTERFLIES, SKIPPERS, & MOTHS	
GEOMETRIDAE – GEOMETER MOTH	
Subfamily *Oenochrominae*	cankerworm moth
Sabulodes aegrotata	omnivorous lopper

SCIENTIFIC NAME	COMMON NAME
PAPILIONINAE – SWALLOWTAILS	
Papilio eurymedon	pale swallowtail
Papilio polyxenes coloro	desert black swallowtail
Papilio rutulus	western tiger swallowtail
Papilio zelicaon	anise swallowtail
PIERIDAE – WHITES, MARBLES, ORANGE-TIPS, & SULPHURS	
Pontia protodice	checkered white
Pieris rapae	cabbage white
Anthocharis cethura	desert orangetip
Anthocharis sara	Sara orangetip
Colias eurytheme	orange sulphur
Colias harfordii	Harford's sulphur
Phoebis sennae	cloudless sulphur
Nathalis iole	dainty sulphur
LYCAENIDAE – COPPER, HAIRSTREAKS, & BLUES	
Strymon melinus	gray hairstreak
Callophrys augustinus iroides	western brown elfin
Callophrys perplexa	perplexing hairstreak
Brephidium exile	western pygmy-blue
Cupido amyntula	western tailed-blue
Leptotes marina	marine blue
Euphilotes battoides bernardino	Bernardino square-spotted blue
Glaucopsyche lygdamus	southern blue
Plebejus acmon	acmon blue
RIODINIDAE – METALMARKS	
Apodemia virgulti	Behr's metalmark
NYMPHALIDAE – BRUSH-FOOTED BUTTERFLIES	
Speyeria callippe comstocki	Comstock's fritillary
Chlosyne gabbii	Gabb's checkerspot
Vanessa virginiensis	American lady
Vanessa cardui	painted lady
Vanessa annabella	west coast lady
Vanessa atalanta	red admiral
Nymphalis antiopa	mourning cloak
Junonia coenia	common buckeye
Danaus gilippus	striated queen
Danaus plexippus	monarch
Coenonympha tullia	California ringlet
HESPERIDAE – SKIPPERS	
Heliopetes ericetorum	northern white skipper
Hylephila phyleus	fiery skipper
Ochlodes Agricola	rural skipper
Pyrgus albescens	white checkered skipper
Erynnis funeralis	funereal duskywing

SCIENTIFIC NAME	COMMON NAME
SATURNIIDAE – EMPEROR MOTH	
Hemileuca electra	electric buck moth
LYMANTRIIDAE – TUSSOCK MOTH	
Orgyia sp.	tussock moth
ARCTIIDAE – TIGER MOTH	
Arctiid sp.	tiger moth
NOCTUIDAE – OWLET MOTH	
Annaphila sp.	annaphila moth
Schinia sp.	schina moth
DIPTERA – GNATS, MIDGES & FLIES	
TIPULIDAE – CRANE FLY	
Tipula planicornis	common crane fly
BIBIONIDAE – MARCH FLY	
Bibio sp.	march fly
Dilophus orbatus	little black march fly
CECIDOMYIIDAE – GALL MIDGE	
Rhopalomyia solidaginis	goldenrod gall midge
ASILIDAE – ROBBER FLY	
Stenopogon sp.	robber fly
MUSCIDAE – HOUSE FLY	
Haematobia sp.	haematobia Fly
BOMBYLIIDAE – BEE FLY	
Bombus sp.	bee fly
Albicapillus sp.	bee fly
Conophorus fenestratus	bee fly
SARCOPHAGIDAE – FLESH FLY	
Sarcophaga sp.	flesh fly
TACHINIDAE – PARASITIC FLY	
Tachinid sp.	tachinid fly
COLEOPTERA – BEETLES	
CARABIDAE – GROUND BEETLES	
Calosoma semilaeve	common calosoma
Bembidion sp.	small ground bettle
CANTHARIDAE – SOLDIER BEETLES	
Subfamily *Cantharinae*	soldier beetle

SCIENTIFIC NAME	COMMON NAME
DERMESTIDAE – SKIN BEETLES	
Anthrenus sp.	carpet beetle
MELYRIDAE – SOFT-WINGED FLOWER BEETLES	
Tribe *Dasytini*	soft-winged flower beetle
COCCINELLIDAE – LADYBIRD BEETLES	
Hippodamia convergens	convergent ladybird beetle
Coccinella septempunctata	seven-spotted ladybird beetle
CHRYSOMELIDAE – LEAF BEETLES	
Saxinis knausi	Knaus' saxinis
HYMENOPTERA – ANTS, WASPS & BEES	
MULTILLIDAE –VELVET ANT	
Dasymutilla magnifca	red velvet ant
FORMICIDAE – ANTS	
Pogonomyrmex californicus	California harvester ant
VESPIDAE – TRUE WASP	
Polistes exclamans	paper wasp
Vespula pensylvanica	yellowjacket
Polistes fuscatus aurifer	golden polistes wasp
POMPILIDAE – SPIDER WASP	
Pepsis sp.	tarantula wasp
SPHECIDAE – DIGGER WASP	
Chalybion californicum	blue mud wasp
Ammophila sp.	threadwaisted wasp
COLLETIDAE – YELLOW-FACED & PLASTERER BEE	
Hylaeus sp.	hylaeus yellow-faced beed
ANDRENIDAE – ANDRENID BEE	
Andrena sp.	andrenid bee
MEGACHILIDAE – LEAF-CUTTING & MASON BEE	
Megachile sp.	leaf-cutting bee
APIDAE – BUMBLE & HONEY BEE	
Bombus edwardsi	Edward's bumble bee
Bombus californicus	California bumble bee
Bombus crotchii	Crotch's bumble bee
Apis mellifera	European honeybee
CRUSTACEANS	

SCIENTIFIC NAME	COMMON NAME
BRANCHINECTIDAE	
Branchinecta sandiegonensis	San Diego fairy shrimp
AMPHIBIANS	
BUFONIDAE – TRUE TOADS	
Anaxyrus boreas	western toad
HYLIDAE – TREEFROGS	
Pseudacris regilla	Pacific chorus frog
PELOBATIDAE – SPADEFOOT TOADS	
Spea hammondii	western spadefoot
REPTILES	
PHRYNOSOMATIDAE – ZEBRA-TAILED, EARLESS, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS	
Phrynosoma blainvillei	coast horned lizard
Uta stansburiana	side-blotched lizard
Sceloporus occidentalis	western fence lizard
SCINCIDAE – SKINKS	
Eumeces skiltonianus interparietallis	Coronado skink
TEIIDAE – WHIPTAILS AND RACERUNNERS	
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail
Apisdoscelis tigris stejnegeri	coastal western whiptail
ANGUIDAE – ALLIGATOR LIZARDS	
Elgaria multicarinata	southern alligator lizard
COLUBRIDAE – COLUBRID SNAKES	
Lampropeltis getula	common kingsnake
Pituophis melanoleucus	gopher snake
Thamnophis hammondii	two-striped garter snake
VIPERIDAE – VIPERS	
Crotalus oreganus helleri	southern Pacific rattlesnake
Crotalus ruber	red diamond rattlesnake
BIRDS	
ANATIDAE – WATERFOWL	
Anas platyrhynchos	mallard
ARDEIDAE – HERONS, BITTERNS, & ALLIES	
Ardea Herodias	great blue heron
Egretta thula	snowy egret

SCIENTIFIC NAME	COMMON NAME
CATHARTIDAE – NEW WORLD VULTURES	
Cathartes aura	turkey vulture
ACCIPITRIDAE – HAWKS	
Accipiter cooperii	Cooper's hawk
Accipiter striatus	sharp-shinned hawk
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Circus cyaneus	northern harrier
Elanus leucurus	white-tailed kite
FALCONIDAE – FALCONS	
Falco sparverius	American kestrel
Falco mexicanus	prairie falcon
CHARADRIIDAE – PLOVERS	
Charadrius vociferus	killdeer
ODONTOPHORIDAE – QUAILS	
Callipepla californica	California quail
COLUMBIDAE – PIGEONS & DOVES	
Columba livia	rock pigeon
Zenaida macroura	mourning dove
CUCULIDAE – CUCKOOS	
Geococcyx californianus	greater roadrunner
TYTONIDAE – BARN OWLS	
Tyto alba	barn owl
STRIGIDAE – TYPICAL OWLS	
Bubo virginianus	great horned owl
CAPRIMULGIDAE – NIGHTJARS	
Chordeiles acutipennis	lesser nighthawk
APODIDAE – SWIFTS	
Aeronautes saxatalis	white-throated swift
TROCHILIDAE – HUMMINGBIRDS	
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Selasphorus sp.	*Selasphorus* hummingbird
PICIDAE – WOODPECKERS	
Colaptes auratus	northern flicker
Picoides nuttallii	Nuttall's woodpecker

SCIENTIFIC NAME	COMMON NAME
TYRANNIDAE – TYRANT FLYCATCHERS	
Contopus sordidulus	western wood-pewee
Empidonax difficilis	Pacific slope flycatcher
Sayornis nigricans	black phoebe
Sayornis saya	Say's Phoebe
Myiarchus cinerascens	ash-throated flycatcher
Tyrannus vociferans	Cassin's kingbird
Tyrannus verticalis	western kingbird
CORVIDAE – JAYS & CROWS	
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
ALAUDIDAE – LARKS	
Eremophila alpestris actia	California horned lark
HIRUNDINIDAE – SWALLOWS	
Tachycineta bicolor	tree swallow
Tachycineta thalassina	violet-green swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Petrochelidon pyrrhonota	cliff swallow
AEGITHALIDAE – BUSHTITS	
Psaltriparus minimus	bushtit
TROGLODYTIDAE – WRENS	
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
REGULIDAE – KINGLETS	
Regulus calendula	ruby-crowned kinglet
SYLVIIDAE – OLD WORLD FLYCATCHERS	
Polioptila caerulea	blue-gray gnatcatcher
Polioptila californica	California gnatcatcher
TURDIDAE – THRUSHES	
Sialia currucoides	mountain bluebird
Catharus guttatus	hermit thrush
TIMALIIDAE – BABBLERS	
Chamaea fasciata	wrentit
MIMIDAE – MIMIC THRUSHES	
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
STURNIDAE – STARLINGS	
Sturnus vulgaris	European starling

SCIENTIFIC NAME	COMMON NAME
MOTACILLIDAE – PIPITS	
Anthus rubescens	American pipit
BOMBYCILLIDAE – WAXWINGS	
Bombycilla cedrorum	cedar waxwing
PTILOGONATIDAE – SILKY FLYCATCHERS	
Phainopepla nitens	phainopepla
PARULIDAE – WOOD WARBLERS	
Vermivora celata	orange-crowned warbler
Dendroica petechia	yellow warbler
Dendroica coronata	yellow-rumped warbler
Wilsonia pusilla	Wilson's warbler
Geothylpis trichas	common yellowthroat
THRAUPIDAE – TANAGERS	
Piranga ludoviciana	western tanager
EMBERIZIDAE – TOWHEES & AMERICAN SPARROWS	
Pipilo maculatus	spotted towhee
Pipilo chlorurus	green-tailed towhee
Pipilo crissalis	California towhee
Aimophila ruficeps ssp. *canescens*	rufous-crowned sparrow
Chondestes grammacus	lark sparrow
Passerculus sandwichensis	savannah sparrow
Ammodramus savannarum	grasshopper sparrow
Passerella iliaca	fox sparrow
Zonotrichia leucophrys	white-crowned sparrow
Zonotrichia atricapilla	golden-crowned sparrow
CARDINALIDAE – CARDINAL GROSBEAKS AND BUNTINGS	
Pheucticus melanocephalus	black-headed grosbeak
Guiraca caerulea	blue grosbeak
Passerina amoena	lazuli bunting
ICTERIDAE – BLACKBIRDS, ORIOLES & ALLIES	
Agelaius phoenicius	red-winged blackbird
Sturnella neglecta	western meadowlark
Molothrus ater	brown-headed cowbird
Icterus cucullatus	hooded oriole
Icterus galbula	Bullock’s oriole
FRINGILLIDAE – FINCHES	
Carpodacus mexicanus	house finch
Carduelis lawrencei	Lawrence’s goldfinch
Carduelis psaltria	lesser goldfinch
Carduelis tristis	American goldfinch

SCIENTIFIC NAME	COMMON NAME
PASSERIDAE – WEAVERS	
Passer domesticus	house sparrow
MAMMALS	
LEPORIDAE – HARES & RABBITS	
Sylvilagus audubonii	Audubon's cottontail
Lepus californicus ssp. *bennettii*	San Diego black-tailed jackrabbit
Sylvilagus bachmani	brush rabbit
SCIURIDAE – SQUIRRELS	
Spermophilus beecheyi	California ground squirrel
GEOMYIDAE – POCKET GOPHERS	
Thomomys bottae	Botta's pocket gopher
MURIDAE – MICE, RATS, AND VOLES	
Neotoma fuscipes	dusky-footed woodrat
CANIDAE – WOLVES & FOXES	
Canis latrans	coyote
CERVIDAE – DEER	
Odocoileus hemionus	southern mule deer