

Quarry Creek

Preserve Management Plan

June 16, 2011

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1.0 INTRODUCTION

1.1 PURPOSE FOR INCLUSION OF THE PRESERVE AREA IN THE HMP

The purpose of this Preserve Management Plan (PMP) is to provide long-term management, monitoring, and reporting guidelines that are consistent with the San Diego County's Multiple Habitat Conservation Program (MHCP), Carlsbad Open Space Management Plan (OSMP) (Technology Associates International Corporation [TAIC], 2004) and the City of Carlsbad Habitat Management Plan (HMP), for a biological open space parcel associated with the Former South Coast Materials Quarry Creek Reclamation Plan. This open space parcel is to be managed for the purpose of preserving sensitive resources and to meet the Hanson Aggregates' obligation under the Former South Coast Quarry Reclamation Plan Final Environmental Impact Report (HELIX 2010a and b) and the Biological Opinion for the Former South Coast Reclamation Plan (USFWS 2011), as well as to be consistent with the MHCP, OSMP, and HMP.

1.2 PURPOSE OF THE PRESERVE MANAGEMENT PLAN

The purpose of this PMP is to:

- Meet the requirements for environmental documentation to comply with state and federal statutes and regulations;
- Identify required personnel qualifications for implementing management goals and objectives;
- Serve as a budget planning aid for annual budget preparation;
- Provide an overview of the preserve's management goals and objectives as well as specific directives for the protection and management of native habitats and wildlife;
- Summarize existing data on the native habitats, plants, and wildlife which occur on or use this property; and
- Outline appropriate public uses of the preserve and its resources.

The applicant is proposing that San Diego Habitat Conservancy (SDHC) be the Preserve Manager for the preserve. Jim Rocks, who will be SDHC's manager for this site, meets all of the requirements of a Preserve Manager noted above. The contact information for SDHC is:

8130 La Mesa Blvd., #705
La Mesa, CA 91941
619-668-7474
www.sdhabitat.org

2.0 PRESERVE AREA DESCRIPTION

2.1 GEOGRAPHICAL AND REGIONAL SETTING

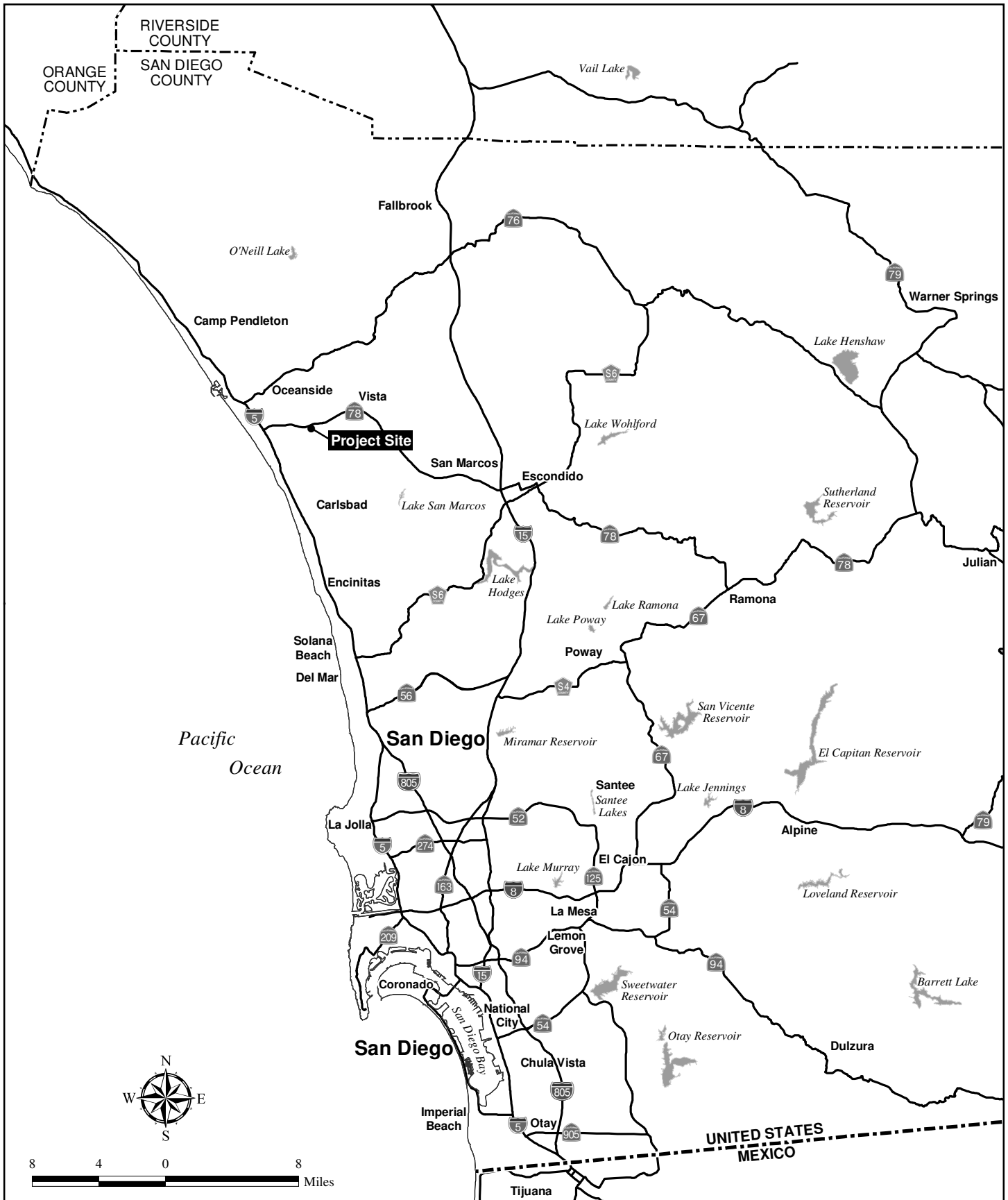
The Project Site is located within the boundaries of the former South Coast Materials quarry, in the cities of Oceanside and Carlsbad in northwestern San Diego County, California (Figure 1). Specifically, the site is located along Buena Vista Creek, south of State Route (SR) 78, approximately 3.5 miles east of Interstate 5. The site lies within unsectioned lands in Township 11 South, Range 4 West of the 7.5-minute U.S. Geological Survey San Luis Rey quadrangle (Figure 2). The preserve portion of the Project Site includes Buena Vista Creek and adjacent slopes from the eastern property boundary to where the creek widens and extends to the western property boundary.

The preserve is within Local Facilities Management Zone 25 of the Carlsbad HMP, which includes a large portion of Core Area 2 of the HMP. The overall goals of LFM 25 are conservation of riparian, wetland, grassland, and coastal sage scrub habitats. The Carlsbad HMP defines Proposed Hardline Preserve Areas intended to conserve sensitive habitats within an open space system. As noted above, the project has modified the existing Proposed Hardline Preserve Areas in order to retain the Buena Vista Creek channel in its existing location.

2.2 PRESERVE BOUNDARIES AND HISTORIC/CURRENT LAND USE

The 168-acre South Coast Materials Company hard rock mining facility was an active rock quarry from 1961 to 1995 that provided rock and gravel for construction and roads. Approximately 64 acres of the original 168-acre mining facility have already been reclaimed and developed into a shopping center accessed from College Boulevard; this reclaimed area occupies the eastern portion of the mining facility. The western 104.5-acres of the facility comprise the Former South Coast Materials Quarry Creek Reclamation Plan project site (Project Site), which has extensive impacts from mining. All but approximately 4 acres are within the City of Carlsbad. The remaining 4 acres are located in the City of Oceanside.

On-site uses previously consisted of a rock plant, concrete batch plant, and asphalt products facility, along with concrete recycling, shop building, scale house, and associated office areas, all of which occurred outside of the preserve area. The rock plant and asphalt plant have been dismantled and removed from the site. The concrete batch plant was closed in March 2005 and dismantled in December 2005, with all plant remnants completely removed from the site by September 2006. The office building was demolished and removed from the site in June 2006. The recycling operation is continuing on site and is anticipated to remain in operation through completion of the reclamation grading. The termination of these uses and removal of plant facilities and structures are included as part of the final phase of the amended reclamation plan. On-site remediation has been ongoing since the mid-1980s, including both soil and groundwater remediation. Approximately 25,000 cubic yards (cy) of fuel-contaminated soil has been excavated and is being remediated on site; virtually all of this remediation is occurring outside of the preserve. The on-going remediation effort is assumed to be completed and approved prior to acceptance of the preserve by the Preserve Manager.



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Regional Location Map

FORMER SOUTH COAST QUARRY AMENDED RECLAMATION PLAN
LONG-TERM MANAGEMENT PLAN

Figure 1

This area contains a substantial amount of native wetland and upland habitat, particularly in the western and southern portions, patches of non-native and disturbed habitats, and developed areas (Figure 3). Currently, the site is zoned for a variety of land uses, including industrial, residential, and open space, and is being used for recycling of concrete and asphalt materials. Surrounding land uses include residential development to the south, SR 78 to the north, commercial development to the east, and the Buena Vista Creek Ecological Reserve (BVCER) and vacant land to the west. Future uses adjacent to the preserve within the 104-acre Project Site have yet to be determined.

Approximately 28.22 acres of the site are designated for preservation in open space as part of the Reclamation Plan approval and are the subject of this PMP. The original preserve was approximately 23.2 acres, but an additional 4.9 acres is being conserved at the request of the U.S. Army Corps of Engineers (Corps) on the western half of the property. The Corps understands that management of these areas will be limited to trash removal, removal of perennial invasive species (i.e. limited to pampas grass, tamarisk, arundo, castor bean, tobacco tree), and restricting access. These areas will be available for future wetland and upland mitigation credit for any future development of the site at the discretion of the Corps and USFWS. Any inclusion of these areas for future mitigation will require full compliance with this PMP, and will require a revision to the cost analysis at that time. The preserve will include the reconstructed, widened creek channel and adjacent side slopes, and a 100-foot biological buffer, measured from the bottom edge of the reconstructed channel (i.e. from toe of slope on both sides of the 150-foot wide channel bottom). Additional areas included in the preserve are the existing riparian habitat in the far western portion of the Project Site and a 100-foot wide biological buffer from the edge of existing riparian habitat in the western portion of the property, as well as the area upstream of and including El Salto Falls within the Project Site (Figure 3).

The purpose of the preserve is to conserve the on-site existing and restored Buena Vista Creek and adjacent buffer areas. The preserve originally was shown as a Carlsbad HMP Proposed Hardline Preserve Area (HPA) with Buena Vista Creek being realigned to the north; however, based on input from the resource agencies and the public, the HPA has been amended to retain Buena Vista Creek in its existing location. This revision was approved by the City of Carlsbad, USFWS, and California Department of Fish and Game (CDFG) through an equivalency Finding in 2010.

2.3 GEOLOGY, SOILS, AND HYDROLOGY

Overall, the portions of Buena Vista Creek and adjacent uplands that are located within the mined portion of the site have been extensively impacted by mining activities. The downstream portion of the creek channel within the mining area and the far western portion of the creek contain native wetland habitat. Upland habitat only occurs along the far western portion of Buena Vista Creek.

According to the San Diego Basin Plan (Basin Plan), the Project Site is located in the Carlsbad Hydrologic Unit (HU 904.00) within the Buena Vista Creek Hydrologic Area (HA 904.20) and the El Salto Hydrologic Subarea (HSA 904.21). The Carlsbad HU is a roughly triangular shaped area of approximately 210 square miles, and extends from east of Lake Wohlford to Solana

Beach-Carlsbad along the coast. Drainage within the Carlsbad HU is provided by a number of small to moderate size streams, including Buena Vista, Agua Hedionda, San Marcos, and Escondido creeks. Surface drainage in the El Salto HSA occurs primarily through Buena Vista Creek, which includes a watershed area of approximately 14,500 acres (22.7 square miles). Buena Vista Creek extends generally east-west through the project site and continues west before ultimately entering Buena Vista Lagoon in the City of Carlsbad, approximately 2 miles downstream of the western site boundary. Annual precipitation in the Carlsbad HU ranges from approximately 11 inches along the coast to over 25 inches in the Laguna Mountains. Rainfall within the vicinity of the Project Site (City of Carlsbad) averages approximately 11.1 inches per year, with January (2.42 inches), February (2.23 inches), and March (2.11 inches) comprising the wettest months, and June (0.09 inch), July (0.02 inch), and August (0.13 inch) representing the driest months (weather.com 2007).

Prior to the preserve being turned over to the Preserve Manager, the portion of Buena Vista Creek and the adjacent slopes located in the impacted area of the site will be restored. The restored channel would include a 150-foot-wide bottom and 2.5:1 (horizontal to vertical) side slopes. In addition, overbank terraces would be added to both sides of the channel, resulting in a maximum channel width of approximately 194 feet (Figure 4). The final channel will be designed at less than a 0.2 percent longitudinal gradient. Seven natural rock drop structures ranging from 3 to 7 feet in height will be constructed at irregular intervals along the channel. Each structure will extend across the channel bottom and up the adjacent banks to at least one foot above the elevation of a projected 100-year flood event. The structures would behave as rock riffles that form a stepped channel bed profile. The stepped profile would allow the 100-year flow velocities to be maintained below an erosive threshold throughout much of the creek. The locations and heights of each structure vary and were selected to allow portions of the existing creek bed to remain undisturbed.

2.4 OWNERSHIP AND LEGAL DESCRIPTION

The owner of the Carlsbad portion of the property (Figure 2; APN 167-040-21) is:

Hanson Aggregates Pacific Southwest, Inc.
Contact: Marvin Howell
P.O. Box 639069
San Diego, CA 92163-9069
(858) 577-2770

The owner of the Oceanside portion of the property (APN 168-011-20) is:

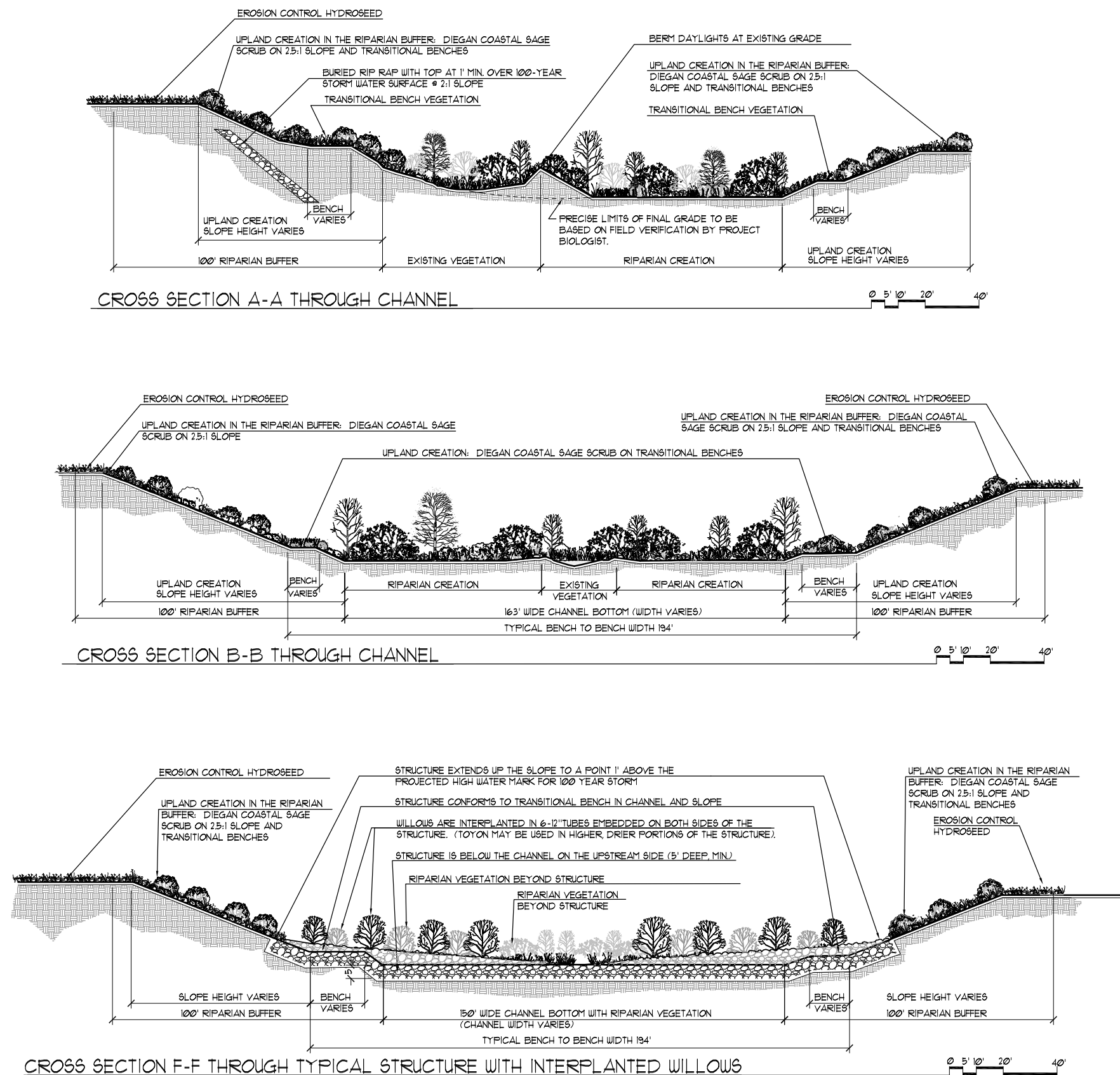
Quarry Creek Investors, LLC
P.O. Box 85104
San Diego, CA 92086



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Site Plan with Limits of Open Space

FORMER SOUTH COAST QUARRY AMENDED RECLAMATION PLAN LONG-TERM MANAGEMENT PLAN



Note: Cross-section locations are shown on Figure 3.

Source: The Lightfoot Planning Group
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3 Conceptual Cross-sections of Creek (A-A, B-B and F-F)

FORMER SOUTH COAST QUARRY AMENDED RECLAMATION PLAN LONG-TERM MANAGEMENT PLAN

2.5 CONSERVATION EASEMENT COMPLIANCE

The Conservation Easement (CE) provides a list of permitted and prohibited uses in the preserve. The Preserve Manager will be responsible for monitoring the preserve to ensure that adjacent landowners and the public are not violating the conditions of the CE. Additionally, limited access is being provided to Native Americans for cultural and religious purposes, which are spelled out in the CE. To this end, the Preserve Manager will conduct at least quarterly site visits to insure that the CE boundaries are being respected by the public. The CE is provided in Appendix A-1.

3.0 HABITAT AND SPECIES DESCRIPTION

The site has been surveyed multiple times over the past 13 years. Vegetation was mapped by HELIX biologists in 1997 and updated in 1999 and 2006. A small area in the southeast portion of the site was remapped in 2008 because nuisance flows from adjacent development have created riparian vegetation in an area formerly mapped as disturbed. Focused surveys for sensitive plants within the study area were performed during spring and summer 1997, and data was revised following each subsequent site visit. Focused surveys were conducted again on April 25 and June 6, 2008. Focused surveys for the least Bell's vireo (*Vireo bellii pusillus*) were originally performed in 1997 and then again in 1999 (HELIX 2000), 2002, 2003, 2005 and 2008. Each year, generally 8 site visits (only 3 in 1997) were conducted per established protocol (USFWS 2001). Protocol surveys for the southwestern willow flycatcher (*Empidonax traillii extimus*) were conducted during the 1999, 2002, 2003, and 2008 breeding seasons, following the protocol of Sogge et al. (1997 and 2000). Protocol surveys for the coastal California gnatcatcher (*Poliophtila californica californica*) were conducted on the study area in 1999, 2002, 2003, and 2008. Each survey consisted of 3 breeding season site visits according to USFWS presence/absence survey protocol (USFWS 1997). A focused burrowing owl (*Athene cunicularia*) presence/absence survey was performed by HELIX in 1999 and 2005 in accordance with recommended survey protocol (CDFG 1995). Focused surveys for the arroyo toad (*Bufo californicus*) were performed by HELIX biologists in 1999 and 2002. HELIX conducted a focused survey for the southwestern pond turtle (*Actinemys marmorata pallida*) in 2000.

3.1 VEGETATION COMMUNITIES

The following habitat descriptions are based on the anticipated successful implementation of the restoration of Buena Vista Creek and adjacent uplands (HELIX 2011a and b). It is expected that the preserve will support 9 vegetation communities: riparian forest, southern willow scrub, freshwater marsh, riparian woodland, open water, non-vegetated channel/streambed, Diegan coastal sage scrub, non-native grassland, and disturbed habitat (Figure 5; Table 1).

Table 1 POST-RESTORATION VEGETATION COMMUNITIES		
Vegetation Community	Habitat Group	Acres
Riparian forest ¹	A	11.52
Southern willow scrub ¹	A	0.93
Freshwater marsh	A	0.46
Riparian woodland	A	0.57
Non-vegetated channel/streambed	A	0.08
Open water	A	0.38
Diegan coastal sage scrub ²	C	11.05
Non-native grassland	E	0.06
Disturbed habitat ³	F	3.17
TOTAL		28.22

¹ Created riparian habitat may include a combination of southern cottonwood-willow riparian, riparian woodland, and southern willow scrub habitats

² Considered non-occupied because site will consist of restored habitat

³ Includes drop structures

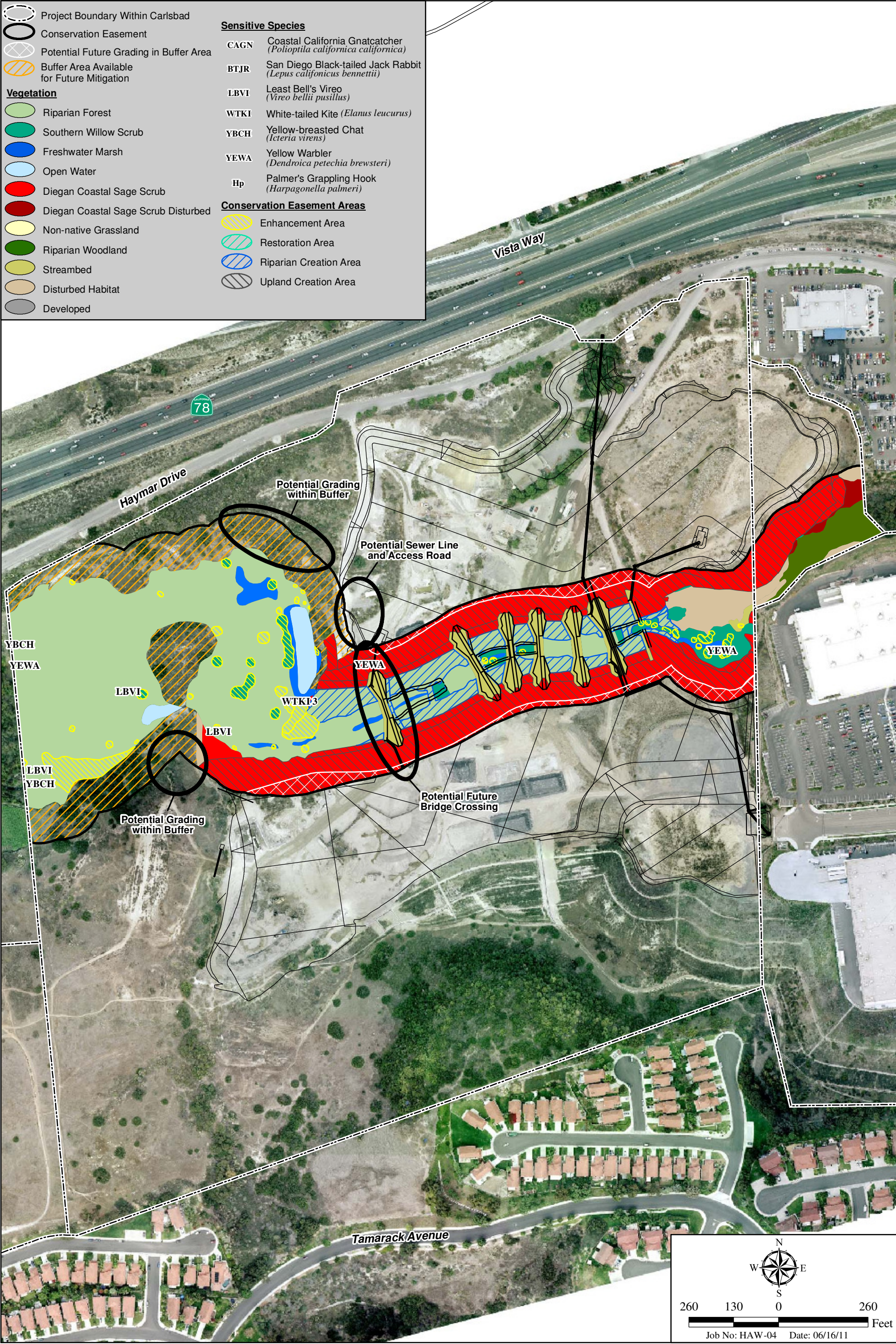
3.1.1 Riparian Forest

Riparian forest (identified as southern cottonwood-willow riparian forest in the project Environmental Impact Report) consists of tall, open, broad-leaved, winter-deciduous riparian species and is dominated by cottonwood species (e.g., *Populus* spp.) with willow species (*Salix* spp.) comprising the main understory. This vegetation community is dense, structurally diverse, and similar to southern arroyo willow riparian forest, although it contains a greater amount of cottonwoods and western sycamores (*Platanus racemosa*; Holland 1986). The study area currently contains 9.45 acres of riparian forest along Buena Vista Creek, largely in the northwestern portion of the preserve. Furthermore, additional riparian forest (or some combination of riparian forest and southern willow scrub) is proposed to be created as part of the restoration effort (HELIX 2011a) for a total of 11.52 acres within the preserve.

3.1.2 Southern Willow Scrub

Southern willow scrub (riparian scrub in the Carlsbad HMP) consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat (*Baccharis salicifolia*). This habitat typically occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows.

Approximately 0.58 acres of southern willow scrub currently occurs along Buena Vista Creek in the eastern and southwestern portions of the preserve. Dominant willow species in the study area include arroyo willow (*Salix lasiolepis*) and red willow (*S. laevigata*). In addition, on-site southern willow scrub supports black willow (*S. gooddingii*), mule fat, Fremont cottonwood



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Vegetation and Sensitive Resources

FORMER SOUTH COAST QUARRY AMENDED RECLAMATION PLAN

(*Populus fremontii*), and western ragweed (*Ambrosia psilostachya*). The on-site southern willow scrub currently has a large component of non-native plant species, including castor bean (*Ricinus communis*), giant reed (*Arundo donax*), bristly ox-tongue (*Picris echioides*), and California fan palm (*Washingtonia filifera*) that will be removed as part of the restoration effort. Additionally, approximately 0.35 acres will be enhanced as part of the restoration effort (HELIX 2011a) for a total of 0.93 acres within the preserve.

3.1.3 Freshwater Marsh

Freshwater marsh is characterized by perennial monocots, such as cattail (*Typha latifolia*) or bulrush (*Scirpus* sp.). It occurs in low, regularly flooded areas typically with little current and typically forms dense, monotypic stands.

Approximately 0.46 acres of freshwater marsh, almost entirely dominated by cattails, occurs in patches along the Buena Vista Creek channel as well as in the northwestern portion of the preserve. Additionally, approximately 0.02 acre of additional freshwater marsh is proposed to be enhanced for a total of 0.48 acre. Additional freshwater marsh may be created as part of the restoration effort (HELIX 2011a).

3.1.4 Riparian Woodland

Riparian woodlands are tall, open, streamside communities dominated by facultative riparian trees that typically require water near the soil surface. Approximately 0.57 acre of riparian woodland occurs in the extreme eastern portion of the site along Buena Vista Creek.

3.1.5 Non-vegetated Channel/Streambed

Approximately 0.08 acre of Buena Vista Creek in the eastern portion of the site is not vegetated; this area includes El Salto Falls. It also includes 1.29 acre of drop structures constructed as part of the restoration effort for a total of 1.32 acres of non-vegetated channel/streambed.

3.1.6 Open Water

Two open water ponds are located in the northwestern portion of the preserve and total approximately 0.38 acre. No open water habitat is proposed as part of the restoration effort.

3.1.7 Diegan Coastal Sage Scrub

Diegan coastal sage scrub supports a diverse suite of sensitive animal and plant species, including several that are listed by federal and/or state agencies. It is one of the major shrub communities in California, where it occupies dry areas, typically with shallow soils. Shrubs within this community are generally drought-deciduous species with relatively shallow root systems and open canopies.

Diegan coastal sage scrub occurs on the slopes in the southern preserve, and on either side of the riparian corridor associated with Buena Vista Creek. This community is dominated by shrubs

such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and monkey flower (*Mimulus aurantiacus*), with scattered evergreen shrubs such as laurel sumac (*Malosma laurina*). Approximately 3.91 acres of Diegan coastal sage scrub currently exists within the preserve. Additionally, approximately 7.14 acres of additional Diegan coastal sage scrub are proposed to be created as part of the restoration effort (HELIX 2011b).

3.1.8 Non-native Grassland

Non-native grassland is a mixture of annual grasses and broad-leaved, herbaceous species. It is generally characterized by exotic grasses and numerous annual forbs such as mustard. Non-native grasslands are common throughout California and provide habitat for native rodents as well as the raptors that prey upon them.

Within the preserve, the non-native grassland is dominated by wild oat (*Avena* sp.) and bromes (*Bromus* sp.), with lesser amounts of fennel (*Foeniculum vulgare*) and coyote brush (*Baccharis pilularis*). Approximately 0.06 acres of non-native grassland exists within the preserve.

3.1.9 Disturbed Habitat

Disturbed habitat consists of land that has experienced prior grading as part of previous quarry activities. It supports limited vegetation, generally only non-native annual forbs and some grasses. The rock drop structures were also included in this category. Following the completion of restoration activities, the preserve is anticipated to reduce disturbed habitat to approximately 3.17 acres.

3.2 PLANT SPECIES

Plant species observed during biological investigations of the Project Site were recorded and are included in Appendix A-2. The majority of observed plants were non-native.

3.3 WILDLIFE SPECIES

Animal species detected during biological surveys of the Project Site are included in Appendix A-3.

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow animals the access to resources such as food, water, and shelter within the framework of their daily routine. For example, animals can use these corridors to travel between their riparian breeding habitats and their upland burrowing habitats. Regional corridors provide these functions over a larger scale and link 2 or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations.

Buena Vista Creek within the preserve has been heavily degraded by the quarry operation over the years, and currently has very limited value as a local wildlife corridor. Buena Vista Creek upstream of the preserve supports riparian habitat before hitting College Boulevard, where a

section of the channel is concrete-lined before becoming an earthen channel again. Wildlife movement is most likely to occur to and from the western portion of the site along Buena Vista Creek; the restoration of the creek will facilitate this local wildlife corridor.

The MHCP (AMEC et al. 2003) places portions of the area westerly of the site within the Biological Core and Linkage Area, which contains “all large contiguous areas of habitat, all areas supporting major and critical species populations or habitat areas, and all important functional linkages and movement corridors between them” within the MHCP (p. 2-21). The generalized boundaries of this regional corridor are shown to connect with open space through the western portion of the preserve between land to the south, and ultimately with the stepping stone linkage through Oceanside north of SR 78. The areas further to the west are identified in the Carlsbad HMP (City of Carlsbad 2004) as a core habitat area and are connected with Buena Vista Lagoon to the west, although this connection is heavily constrained by SR 78 and existing shopping centers. Buena Vista Creek continues off site to the east through a constrained corridor. The area to the east is not considered a regional wildlife corridor.

3.4 HMP COVERED SPECIES AND OTHER SENSITIVE SPECIES

No sensitive plant species were observed within the preserve.

Five animal species previously observed within the preserve are considered sensitive: least Bell’s vireo, coastal California gnatcatcher, white-tailed kite (*Elanus leucurus*), yellow warbler (*Dendroica petechia brewsteri*), and yellow-breasted chat (*Icteria virens*). Additionally, Cooper’s hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), and grasshopper sparrow (*Ammodramus savannarum*) were observed off-site to the west (HELIX 2008a, 2008b, and 2008c). The results of focused surveys for the southwestern willow flycatcher, burrowing owl, and arroyo toad were negative. Additionally, focused-species surveys for southwestern pond turtle were negative.

Least Bell’s vireo (*Vireo bellii pusillus*)

Listing: FE/SE; MHCP Covered

Habitat: Occurs in riparian areas and is most frequent in areas that combine an understory of dense, young willows, or mule fat with a canopy of tall willows.

Status on site: Two vireos were detected within southern willow scrub in the western portion of preserve in 2002, none were detected during 2003 focused surveys, and a single vireo was detected in southern willow scrub near the western boundary of the preserve during 2005 focused surveys (HELIX 2005). No vireos were detected on site during 2008 focused surveys (HELIX 2008b). This species also occurs in the BVCER to the west.

Threats/Management: The most significant threat is from the re-invasion of non-native species, especially California fan palm, giant reed, and tamarisk (*Tamarix* sp.), following completion of the restoration efforts along the creek. Long-term management will include invasive control specifically for these species.

Coastal California gnatcatcher (*Poliptila californica californica*)

Listing: FT/SSC; MHCP Covered

Habitat: Coastal sage scrub, particularly with abundant California sage brush.

Status on site: Observed at the eastern end of the preserve and in 5 locations outside of the preserve over the course of 10 years of surveys. This species also occurs in the BVCER to the west.

Threats/Management: The most significant threat is from the invasion of non-native species, especially fennel (*Foeniculum vulgare*), following completion of the restoration efforts in the upland areas. Long-term management will include invasive control, including specific measures targeting this species.

White-tailed kite (*Elanus leucurus*)

Listing: --/--; State Fully Protected

Habitat: Nesting typically occurs in riparian or oak woodlands adjacent to grasslands where small mammals are hunted.

Status on site: Three individuals were observed once near the pond in the north-central portion of the preserve in 2003; one individual was observed in southern willow scrub near the western boundary of the preserve in 1999.

Threats/Management: The most significant threat is from the re-invasion of non-native species, especially California fan palm, giant reed, and tamarisk, following completion of the restoration efforts along the creek. Long-term management will include invasive control specifically for these species.

Yellow warbler (*Dendroica petechia brewsteri*)

Listing: --/SSC

Habitat: Riparian areas throughout California. Primarily restricted to riparian woodland and riparian scrub habitats in southern California.

Status on site: In 1999, one individual was detected near the western preserve boundary in southern cottonwood-willow riparian forest. In 2003, 2 individuals were detected along Buena Vista Creek: one near the pond in the north-central portion of the preserve, and one near freshwater marsh in the eastern portion of the preserve. One individual was observed in 2008.

Threats/Management: The most significant threat is from the re-invasion of non-native species, especially California fan palm, giant reed, and tamarisk, following completion of the restoration efforts along the creek. Long-term management will include invasive control specifically for these species.

Yellow-breasted chat (*Icteria virens*)

Listing: --/SSC; MHCP Covered

Habitat: Brushy tangles, briars, stream thickets, riparian scrub, and riparian woodland; breeds in riparian forest.

Status on site: Detected during 2005 surveys within southern willow scrub near the western preserve boundary. One individual was observed in 2008.

Threats/Management: The most significant threat is from the re-invasion of non-native species, especially California fan palm, giant reed, and tamarisk, following completion of the restoration efforts along the creek. Long-term management will include invasive control specifically targeting these species.

3.5 FIRE HISTORY

There are no recent records of fire within the preserve, as much of the site was actively mined.

3.6 THREATS

Buena Vista Creek bisects the preserve and currently supports a significant non-native component, especially California fan palm. The entire length of the creek will be restored and enhanced, including the killing and/or removal of invasive non-native species. Because California fan palm, giant reed, tamarisk, and other invasive species will remain upstream of the preserve, these species could pose problems for wetland areas in the future.

The upland areas adjacent to the preserve include non-native species such as mustard (*Brassica* sp.), star-thistle (*Centaurea melitensis*), and fennel. Of these, fennel poses the greatest risk for long-term management.

Fire is a natural part of southern California ecosystems, including within the preserve. Non-natural fire return intervals (increased fire frequency over historic levels) could affect the long-term viability of habitats through type conversion (e.g., Diegan coastal sage scrub to non-native grassland). Additionally, because of the small size of the preserve, a single fire event could burn the entire preserve, resulting in local extirpation of species. Adjacent preserve areas may provide sources of recolonization if they do not burn as well.

Periodic flood flows are necessary to maintain a healthy riparian ecosystem. Flood and altered flood flows from changes in upstream hydrological conditions have the potential to affect Buena Vista Creek. The channel proposed to be restored within the preserve has been designed to anticipate maximum build out of the upstream watershed to minimize this potential. Additionally, the design of the channel includes increasing the channel width by as much as 4 times the current width and installing a series of small drop structures. This design further minimizes the potential for catastrophic flood flows.

Increased human and pet access is often a concern in preserve areas and can result in increased edge effects such as trampling of vegetation, introduction of non-native species, unauthorized dumping, harassment of wildlife, and other impacts. The proposed preserve will be adjacent to undeveloped lands following project reclamation until a final land use is determined through the City of Carlsbad planning process. Land use adjacency issues should be considered as part of that planning process.

4.0 MANAGEMENT AND MONITORING

This section provides goals and tasks in the form of Area Specific Management Directives (ASMDs) to direct management of and monitoring within this preserve. The goals and ASMDs guide all management decisions until the plan is revised and updated. Because management and monitoring are interdependent, they are discussed together. The Preserve Manager should coordinate management activities with the Preserve Manager for the BVCER.

4.1 BIOLOGICAL GOALS AND TASKS

4.1.1 General Habitat Monitoring

Goal: Implement a vegetation monitoring program. Determine baseline vegetation structure and composition. Use baseline condition and long-term monitoring results to determine changes in vegetation communities over time and develop management policies.

ASMD

- A vegetation monitoring protocol will be conducted during the first year of long-term management, and within the preserve every 5 years using the following methodology or other suitable method acceptable to the City:
 1. Vegetation will be mapped on a high quality 1" = 400' scale aerial image and will be updated using the most current vegetation classification system for San Diego County. At this time it is anticipated that the classification system prepared by Todd Keeler-Wolf will be used in the future. This mapping will be verified by ground-truthing. A minimum mapping unit of 0.25 acre will be used. The final mapping will be digitized and uploaded into a GIS database.
 2. At least 5 photo-documentation stations will be mapped on an aerial photo using Global Positioning Satellite (GPS) equipment. These locations will be selected to capture large areas of contiguous habitat to allow for monitoring of visual changes in habitat quality and quantity.
 3. Three permanent 10 meter (m) x 10 m sample locations will be established (i.e., permanently mapped using GPS equipment) within wetland and upland habitat (6 total sites). At each location, the 5 dominant shrub and 5 dominant herbaceous species will be identified, and the percent cover of each species and its relative abundance based on a visual estimate will be recorded.
 4. A California Rapid Assessment Method (CRAM) Analysis will be performed of the riparian area.
- The preserve will be visually inspected for changes in non-native cover, pest infestations, and overall vigor of the habitat communities during regular maintenance and surveying activities. If substantial changes that could result in degradation of the habitat values are noted, the area will be monitored more closely until it has stabilized naturally or as a result of implemented management measures.

4.1.2 Wetlands and Non-wetland Waters and Upland Habitats

Goal: Preserve and manage wetlands and uplands to provide for the continued health and persistence of these vegetation communities and to provide habitat for species that use these areas.

Threat – Infestation by Invasive Non-native Plants

Non-native invasive weed species are a particularly significant threat to riparian and wetland communities throughout southern California. Giant reed, California fan palm, pampas grass (*Cortaderia* spp.), tamarisk, tree tobacco (*Nicotiana glauca*), and castor bean are species of particular concern in the Buena Vista Creek drainage. Non-native invasive plants are a ubiquitous threat to coastal sage scrub communities throughout southern California. Fennel is a common component of currently vacant lands to the west of the preserve. Mustard and star thistle are also prevalent in adjacent natural lands.

ASMD

- Non-native species considered to be highly invasive by the California Invasive Plant Council (Cal-IPC High and Moderate category species; Appendix A-4) shall be targeted for eradication within preserve boundaries. Eradication may include removal by hand, weed whip, mowing or, if necessary, herbicides. The least toxic method that effectively removes the weeds should be used. Eradication of established invasives may require several herbicide applications per year for several years, and shall be conducted at the appropriate time of year for the targeted species based on that species' biology. Herbicides may only be applied by a licensed pesticide applicator under the supervision of a qualified biologist. Appendix A-4 will be superseded by an HMP list currently being developed.
- New infestations by invasive non-native plants shall be monitored for and treated at least annually.

Threat – Unauthorized Access

Currently, the site has controlled access because of its existing use as a recycling facility. Additionally, the only residential uses adjacent to the project occur along the southern boundary of the Project Site at the edge of a very steep slope. Depending on the future uses of the parcels adjacent to the preserve, there is the potential for an increase in foot traffic. This increase in foot traffic can result in direct impacts to native habitat from unauthorized trails, trash, and unauthorized dumping.

ASMD

- Until the final end use of adjacent areas is determined, access to the preserve will be controlled by limiting access to the larger Project Site by fencing of the larger Project Site and signage of the preserve (See also Section 4.4).

- Conduct regular (at least quarterly) patrols to protect sensitive species habitat from human impacts. Frequency of monitoring may need to be adjusted based on the end use of the adjacent development.
- The Preserve Manager shall coordinate with the end user to ensure that adjacency issues are addressed by the end use.

Threat – Changes in Fire Frequency

Diegan coastal sage scrub is a fire adapted vegetation community. Fires in southern California historically occur most frequently in late summer and fall when Santa Ana winds result in very complete burns of Diegan coastal sage scrub. Because of the preserve's proximity to existing residences, and the City of Carlsbad's policy of extinguishing all fires as quickly as possible, fires are less likely to result in complete burns. Additionally, however, the frequency of fires may increase because of the potential for increased human access to areas adjacent to the preserve, resulting in increased fire return interval. Increases in fire return interval have the potential to convert sage scrub to non-native grassland vegetation communities.

ASMD

- Because of the need to protect property, management strategies will not include letting fires burn to allow for complete burns. The focus instead will be to minimize or eliminate any increase in fire frequency within the preserve by controlling human access and working with adjacent development areas to maintain fuel management zones. No fuel modification practices will be allowed in the preserve, including adjacent 100-foot wide biological buffers.

Threat – Erosion and Sedimentation

Unchecked erosion can result in degradation of upland and wetland habitats through elimination of topsoil and sedimentation. Erosion is often the result of uncontrolled access that results in unauthorized trails. Excessive erosion can also occur following fire events that eliminate vegetative cover.

ASMD

- Excessive erosion within the preserve will be addressed through Best Management Practices (BMP) such as use of straw wattles, rock water diversion structures in upland areas, reseeding bare areas, and other measures as appropriate. BMPs that maximize the use of native material should be selected whenever feasible.
- Controlling access to the preserve as outlined in the Unauthorized Access section above, and through public education as outlined in Section 4.4 will help to minimize erosion from unauthorized foot trails.

Threat – Drop Structure Failure

The potential for failure of one of the drop structures on the project is considered highly unlikely based on the extensive review and approval of multiple reviewing agencies, and the review and monitoring of the actual construction of the drop structures. In the unlikely event of a drop structure failure, the most likely scenario would be partial failure in the central section of the drop structure.

ASMD

- Repair of a drop structure, should it fail, would be the responsibility of the underlying landowner (or the public agency that assumes responsibility for the drop-structures). As a further safeguard, funding to repair one of the drop structures has been included in the PAR for the project, with these funds to be held in a separate account by the Preserve Manager which may only be used for repair of the drop structures. The Preserve Manager shall not be responsible for repair of the drop structure, but shall have the ability to access and disperse these funds should it be necessary to insure that the drop structure is repaired.
- The Preserve Manager will be available to coordinate with the underlying landowner on any necessary maintenance, modification, or replacement of the any of the drop structures such that access to the site is controlled and impacts to adjacent wetlands and riparian areas within the Preserve are limited and properly managed and restored immediately following activities.

4.1.3 Sensitive Species

Goal: Protect and maintain habitat that supports sensitive plants and animals, and reduce or eliminate threats to species on site.

Threat – Unauthorized Access

ASMD

- Conduct regular (at least quarterly) patrols to protect sensitive species habitat from human impacts. Frequency of monitoring may need to be adjusted based on the end use of the adjacent development.
- Conduct vegetation monitoring pursuant to section 4.1.1.
- Remove non-native plant species that degrade sensitive species habitat consistent with Section 4.1.2. This habitat management will benefit sensitive species occurring on site.
- Avoid activities that may disturb sensitive species during breeding season, e.g., non-native plant removal, during the sensitive species' breeding season.

- Conduct surveys and generate GIS data for the location and distribution of the least Bell's vireo, yellow-breasted chat, yellow warbler, white-tailed kite, and coastal California gnatcatcher within the preserve. Brown-headed cowbirds (*Molothrus ater*) should also be noted during the surveys. Surveys shall meet current protocol (3 surveys for the coastal California gnatcatcher and 8 surveys for the least Bell's vireo) and be conducted every 3 years.

Threat – Human encampments

Itinerant encampments can be a problem in riparian areas. They can impact nesting birds, especially low to the ground nesting species such as the least Bell's vireo, directly by hitting a nest while walking through riparian areas, or indirectly by flushing nesting adults or nestlings as a result of activity near a nest.

ASMD

- The Preserve Manager will conduct regular patrols to ensure that itinerant encampments do not become established and to minimize human impacts.
- If encampments are observed, the Preserve Manager will work with authorities to have the camps and individual removed in a legal, safe, and humane manner.
- The Preserve Manager will be responsible for correcting any impacts to sensitive resources caused by the encampments including removing and properly disposing of trash and replanting if vegetation was removed.

4.2 CONSTRAINTS

Constraints to management include the size of the preserve, potential for ongoing re-introduction of non-native species, the presence of 2 listed species (least Bell's vireo and coastal California gnatcatcher), and Native American access.

Preserve Size

Because of the small size of the preserve (23.13 acres), the overall functioning of the ecosystem can be more easily compromised by factors such human access, fire frequency, and the inability for species to re-establish following fire and flood events.

Infestation by Invasive Non-native Plants

Currently, the area immediately upstream of the preserve is not being managed for conservation values, and, as a result, there is an ongoing potential for re-introduction of non-native species. Currently, there is no funding available for long-term management of this off-site parcel.

Presence of Listed Species

The presence of 2 listed species limits when habitat management activities, such as the removal of non-native vegetation, can take place and/or increases the cost of such activities because a biologist may need to be on site to monitor maintenance activities during the nesting season.

Native American Access/El Salto Falls Management Plan

El Salto Falls at the upstream end of the preserve is considered a sacred site by the San Luis Rey Band of Luiseño Mission Indians, and the conservation easement will allow for limited access by the Tribe. The Preserve Manager will need to coordinate with the Tribe to ensure conservation goals are being met while allowing for Tribal access to the falls. The Preserve Manager will coordinate with the Tribe to insure implementation of the El Salto Falls Management Plan boundaries that occur within the preserve.

4.3 POTENTIAL IMPACTS

There is the potential for temporary adverse impacts to habitats and species as part of the overall management of the preserve. Specific examples include incidental impacts to native plant species during non-native plant removal efforts, potential for harassment of nesting bird species during non-native plant removal and survey efforts, and potential impacts associated with access to El Salto Falls by the Tribe. These impacts will be avoided and/or minimized by the ASMD's noted above, and the activities associated with these impacts are anticipated to have a net long-term benefit to the habitat and sensitive species within the preserve.

4.4 PUBLIC USE GOALS

Given the small size of the preserve and the presence of 2 listed species, the Quarry Creek preserve is not intended to provide public use or access, with the exception of limited access by the Tribe to El Salto Falls. As a result of the lack of accessible or sufficient terrain, no trails are proposed for the preserve. Trails along the outer edge of the preserve may be proposed at some future point, but these would be entirely outside of the preserve.

Goal: Limit public access and use in order to be compatible with the conservation goals and obligations of the OSMF, HMP, and MHCP, while providing public outreach and education on the importance of the preserve. Public use will be limited to Tribal access to El Salto Falls.

ASMD

- The Preserve Manager will patrol and enforce access rules and regulations on a regular basis.
- Once an end use to the adjacent property is determined, the Preserve Manager will work with that end user to identify appropriate locations for fencing and signage to minimize or eliminate unwanted use and trespass. At a minimum, the fence will be located at the edge of the Preserve boundary unless the boundary abuts other biological open space. The fence will be at a minimum a split-rail fence to limit access by future residents. It

may be the discretion of the Preserve Manager and the regulatory agencies to require a fence that better limits access by domestic animals such as chain link fencing or block wall base bottom and Plexiglas top.

- The Preserve Manager will allow access to the preserve for science and research as appropriate.
- The Preserve Manager will allow controlled access to the Tribe consistent with the Conservation Easement for the preserve.
- The Preserve Manager will post appropriate signage. Each sign will identify that the property is protected habitat, provide contact information, a list of illegal activities, and other pertinent information (see also Section 4.1.2).
- The Preserve Manager will remove debris and trash within the preserve (see also Section 4.1.2).
- Once a final end use is determined, the Preserve Manager will work with the end user in developing a public outreach and education program for the adjacent use.

4.5 FIRE MANAGEMENT GOALS

Goal 1: Protect human life and safety as the first priority of every fire management activity. This is the responsibility of the City's fire department.

Goal 2: Suppress 100% of all unplanned wildland fires, regardless of ignition source, to the smallest size possible, protecting all habitat values at risk in a prioritized manner. This is the responsibility of the City's fire department.

Non-natural fire return intervals resulting in increased fire frequency are the primary concern for the preserve. The open space preserves can be considered a wildland-urban interface. Under certain Santa Ana wind conditions, entire open space preserves, especially smaller preserves such as the Quarry Creek preserve, could be consumed by fire more quickly than a fire suppression unit could be on site. The Quarry Creek preserve is connected to other conservation areas to the west. Fire can either spread from the Quarry Creek preserve onto those lands, or reach the Quarry Creek preserve from them. Because the preserve is adjacent to urban lands, fire risk is greater. The fire threat comes largely from human-caused ignitions.

The plant and wildlife communities of the preserve have adapted to a natural fire regime as a key natural ecological disturbance process, primarily driven by weather and the low moisture content of vegetation in late summer and fall. These natural fire regimes are altered by habitat fragmentation that does not allow natural fire regimes to continue without placing adjacent homes and businesses at risk, thereby increasing pressure on fire protection agencies and land managers to suppress wildfires. Additionally, the abundance of exotic annual grasses and forbs has changed fuel load characteristics such that fires can ignite and carry through into shrub lands more easily.

Based on these considerations, the risk of extreme fire scenarios to species that are the focus of management should be evaluated in the context of the managed preserve. Fire management

goals should focus on (1) achievement of biological goals, and (2) hazard reduction for humans and their property.

ASMD

- Develop a site-specific fire management plan in coordination with the City of Carlsbad and City of Oceanside fire marshals, which will include a resource-specific management strategy to coordinate and protect sensitive resources (e.g., narrow endemic plant species) during and after a burn event. The plan should discuss locations for staging firefighting equipment and access routes that will avoid sensitive biological resources, identify safety hazard areas for firefighting personnel, and discuss fire prevention methods and post-fire activities such as restoration. In addition, a statement should be included to address the City's vegetation clearance ordinances and appropriate clearing methods. A map should be created to show the location of fuel modification zones adjacent to the preserve.

5.0 ADAPTIVE MANAGEMENT

Goal: Ensure that, through the monitoring and reporting process, results of management are evaluated and management is adjusted appropriately to meet the PMP goals and the City of Carlsbad's commitment to the conservation goals of the HMP/MHCP.

The term adaptive management was adopted by Holling (1978) for natural resource management, who described adaptive management as an interactive process that not only reduces but also benefits from uncertainty. Adaptive management includes steps that may be involved in a long-term adaptive implementation program, including opportunistic learning, management, monitoring, and directing the results of analysis and assessment back into the program through decision makers. It is important that the PMP incorporate the flexibility to change implementation strategies after initial start up. The PMP is intended to be flexible enough to develop adaptive management strategies that will facilitate and improve the decision making process for operating the conservation program of the PMP as well as provide for informative decision-making. The PMP is also intended to be flexible enough to incorporate management and monitoring methods provided by the Regional Management and Monitoring Group that would be appropriate for the preserve.

Adaptive management relies on monitoring efforts such as those outlined in Section 4 above to detect changes in species, habitats, and/or threats. Linking the monitoring program with adaptive management actions will inform preserve managers of the status of target species, natural communities, and essential ecological processes, as well as the effectiveness of management actions in a manner that provides data to allow informed management actions and decisions. When change is detected, the Preserve Manager assesses the information and responds by initiating, modifying, or even ending a particular management strategy, if necessary. An important component of implementing the management measures described above will include evaluating data from monitoring activities to determine whether trends in threats are part of a natural cycle of fluctuation or are anthropogenic. If there is a substantial decline in native species compared to the

baseline (e.g., greater presence of invasive non-native plants) or other apparent threats to habitat conditions are observed, remedial measures will be evaluated with the resource agencies and implemented on an as-needed basis. Adaptive management measures shall be limited to funds available for adaptive management as detailed in the Property Analysis Record.

ADMD

- Continue to learn and modify management approaches by testing assumptions through purposeful scientific monitoring.
- Annually assess the need for each management strategy, and update this PMP as appropriate to meet the commitment to Carlsbad HMP conservation goals.
- Coordinate with the Regional Management and Monitoring Group on monitoring methods.

6.0 ADMINISTRATION AND REPORTING

This section addresses the operation and maintenance of the PMP, including funding and staffing, and reporting.

6.1 ANNUAL REPORTS, WORK PLANS, AND PRESERVE MANAGEMENT PLAN

The PMP will be implemented upon completion of the habitat restoration efforts on site, which is anticipated to be 2016, although some management is anticipated starting in 2012. An annual report summarizing the status of the preserve, monitoring survey results, and all major management tasks will be prepared and provided to the City, CDFG, and USFWS following the first year of management and annually thereafter. These reports will be available to the Corps, Regional Water Quality Control Board (RWQCB), and Environmental Protection Agency (EPA) upon request. The report shall discuss the previous year's management and monitoring activities as well as management/monitoring anticipated in the upcoming year. It shall provide a concise and complete summary of management and monitoring methods, identify new management issues, address management issues raised in the previous year's report, and report on the success or failure of management approaches (based on monitoring). It shall outline appropriate remedial measures for those approaches not yielding satisfactory results. It shall include a summary of changes from baseline or previous year conditions, including an assessment of the overall health of vegetation communities in the preserve and any changes in health or distribution of sensitive plant or animal populations, and any areas of increased trespass or dumping. Any changes will be documented on a preserve map. The report shall also address the need for any adaptive management resulting from previous monitoring and provide a methodology for measuring the success of any new or modified maintenance and/or monitoring measures. The report will also provide a financial summary describing expenditures for the year, and the status of the endowment.

This PMP shall be updated every 3 years, if necessary, based on data collected during the annual reporting efforts, including photo documentation. The update should review any changes in site conditions, management priorities, and adaptive management strategies. Additionally,

management strategies may evolve, or the property could be reviewed within the context of ongoing regional planning efforts that may warrant revisions to the PMP. Implementation of adaptive management strategies will be limited to funds available in the PAR.

The annual report will summarize management of the annual budget and costs associated with one-time and ongoing management tasks, with the expectation that there will be year to year variability of management costs based on management needs for any given year. A discussion of projected versus actual costs, and an accounting of the endowment including the original endowment amount, current status of the endowment, interest earned, and projected and actual annual costs will also be provided.

6.2 DATA MANAGEMENT

Vegetation, sensitive resource data, and non-native species mapping will be maintained in a digital (GIS) format, and will be provided on disc to the City of Carlsbad annually unless there has been no change from the previous year. During years with no change, the City shall be notified of this and that no GIS will be provided for that year. Photo documentation of the site will be maintained digitally, and will also be provided to the City every 3 years.

6.3 COMMUNICATION AND COORDINATION

The Preserve Manager will coordinate with the City of Carlsbad, the City's Preserve Steward, other preserve managers, the resource agencies, the Tribe, and the general public. The Preserve Manager will participate in the annual public workshop for HMP implementation hosted by the City.

Once the end use of the adjacent parcels is determined, it will be important that the open space be accepted by the community as a valuable amenity and important resource. To that end, steps will be taken to encourage participation by local residents in the stewardship of the open space area. It is also a goal of this plan that local residents take pride in the maintenance and protection of the preserve. The community can help police the open space and assist the Preserve Manager, who cannot be present 24 hours a day, in preventing unauthorized activities from occurring.

ASMD

- The Preserve Manager will attend one meeting per year with the local community to inform them of the status of the habitat management program and to enlist their cooperation and support.
- The Preserve Manager will participate in the annual public workshop for HMP implementation hosted by the City.
- The Preserve Manager will coordinate with the City and the City's Preserve Steward.
- The Preserve Manager will attend quarterly preserve manager meetings with the City.

6.4 BUDGET/ENDOWMENT MANAGEMENT

Implementation of the PMP will be paid for by funds provided by an initial non-wasting cash endowment of \$508,985 based on the PAR prepared for the Preserve (Appendix A-5). A separate designated account will be maintained for all incomes and expenses for this project. There will be no comingling of funds within the account. The Preserve Manager shall have a duty of loyalty and shall not use the Endowment funds for its own personal benefit. The Preserve Manager or its designee shall act as a prudent investor of the Endowment funds. These safeguards will insure that the funds will be available for long-term management in perpetuity.

6.5 OPERATIONS AND STAFFING

Jim Rocks will be SDHC's manager for this site, and will be responsible for implementation of in the field management and monitoring efforts. Weeding and specific management efforts requiring significant labor will be conducted by landscape maintenance crews overseen by Mr. Rocks. Don Scoles is the executive director for SDHC and will oversee implementation of the PMP, as well as provide budget oversight.

7.0 REFERENCES

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A-1

CONSERVATION EASEMENT



APPENDIX TO BE PROVIDED



A-2

PLANT SPECIES OBSERVED



Appendix A-2
PLANT SPECIES OBSERVED

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
MONOCOTS		
Arecaceae	<i>Washingtonia filifera</i>	California fan palm
Cyperaceae	<i>Cyperus</i> sp.	umbrella sedge
Iridaceae	<i>Sisyrinchium bellum</i>	blue-eyed grass
Juncaceae	<i>Juncus rugulosus</i>	wrinkled rush
	<i>Juncus</i> sp.	rush
Liliaceae	<i>Bloomeria crocea</i> var. <i>crocea</i>	golden star
	<i>Chlorogalum</i> sp.	soap plant
	<i>Dichelostemma capitatum</i>	blue dicks
Poaceae	<i>Avena barbata</i> *	slender wild oat
	<i>Avena</i> sp.*	oats
	<i>Bromus diandrus</i> *	common ripgut grass
	<i>Bromus hordeaceus</i> *	soft chess
	<i>Bromus madritensis</i> ssp. <i>rubens</i> *	foxtail chess
	<i>Cynodon dactylon</i> *	Bermuda grass
	<i>Distichlis spicata</i>	saltgrass
	<i>Gastridium ventricosum</i>	nit grass
	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i> *	barley
	<i>Lolium multiflorum</i> *	Italian ryegrass
	<i>Lolium perenne</i> *	English ryegrass
	<i>Nassella lepida</i>	foothill needlegrass
	<i>Nassella pulchra</i>	purple needlegrass
	<i>Pennisetum</i> sp.*	fountain grass
	<i>Polypogon monspeliensis</i> *	annual beard grass
	<i>Schismus barbatus</i> *	Mediterranean grass
	<i>Vulpia myuros</i> ssp. <i>myuros</i> *	rattail fescue
Typhaceae	<i>Typha</i> sp.	cattail
	<i>Typha latifolia</i>	broad-leaved cattail
DICOTS		
Asclepiadaceae	<i>Asclepias fascicularis</i>	narrow-leaf milkweed
Anacardiaceae	<i>Malosma laurina</i>	laurel sumac
	<i>Rhus integrifolia</i>	lemonadeberry
	<i>Schinus molle</i> *	Peruvian pepper tree
Apiaceae	<i>Apiastrum angustifolium</i>	mock parsley
	<i>Foeniculum vulgare</i> *	fennel
Asteraceae	<i>Amblyopappus pusillus</i>	coast weed
	<i>Ambrosia psilostachya</i>	western ragweed
	<i>Artemisia californica</i>	California sagebrush
	<i>Baccharis pilularis</i>	coyote brush
	<i>Baccharis salicifolia</i>	mule fat
	<i>Centaurea melitensis</i> *	star thistle
	<i>Chrysanthemum coronarium</i> *	garland daisy

Appendix A-2 (cont.)
PLANT SPECIES OBSERVED

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
DICOTS (cont.)		
	<i>Conyza canadensis</i>	Canada horseweed
	<i>Encelia californica</i>	California encelia
	<i>Eriophyllum confertiflorum</i>	golden-yarrow
	<i>Gazania</i> sp.*	gazania
	<i>Gnaphalium bicolor</i>	bicolor cudweed
	<i>Hazardia squarrosa</i> var. <i>grindelioides</i>	saw-toothed goldenbush
	<i>Hedypnois cretica</i> *	Crete hedypnois
	<i>Heterotheca grandiflora</i>	telegraph weed
	<i>Hypochaeris glabra</i> *	smooth cat's-ear
	<i>Isocoma menziesii</i>	goldenbush
	<i>Lactuca serriola</i> *	wild lettuce
	<i>Corethrygyne filaginifolia</i> var. <i>filaginifolia</i>	Del Mar Mesa sand-aster
	<i>Picris echinoides</i> *	bristly ox-tongue
	<i>Sonchus asper</i> *	prickly sow thistle
	<i>Sonchus oleraceus</i> *	common sow thistle
	<i>Stephanomeria virgata</i>	virgate wreath plant
Boraginaceae	<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rancher's fiddleneck
	<i>Cryptantha</i> sp.	cryptantha
	<i>Harpagonella palmeri</i> †	Palmer's grapplinghook
	<i>Plagiobothrys fulvus</i>	tawny popcorn flower
	<i>Plagiobothrys</i> sp.	popcorn flower
Brassicaceae	<i>Hirschfeldia incana</i> *	perennial mustard
	<i>Lepidium</i> sp.*	peppergrass
	<i>Raphanus sativus</i> *	wild radish
Cactaceae	<i>Opuntia littoralis</i>	coastal prickly pear
Capparaceae	<i>Isomeris arborea</i>	bladderpod
Caprifoliaceae	<i>Sambucus mexicana</i>	blue elderberry
Caryophyllaceae	<i>Polycarpon tetraphyllum</i>	four-leaved allseed
	<i>Silene gallica</i> *	common catchfly
	<i>Spergularia villosa</i>	villous sand-spurrey
Chenopodiaceae	<i>Atriplex semibaccata</i> *	Australian saltbush
	<i>Chenopodium album</i>	pigweed
	<i>Salsola tragus</i> *	Russian thistle
Convolvulaceae	<i>Calystegia macrostegia</i>	morning-glory
Cuscutaceae	<i>Cuscuta californica</i>	dodder
Ericaceae	<i>Xylococcus bicolor</i>	mission manzanita
Euphorbiaceae	<i>Chamaesyce polycarpa</i>	desert sand mat
	<i>Croton setigerus</i>	dove weed
	<i>Ricinus communis</i> *	castor-bean

Appendix A-2 (cont.)
PLANT SPECIES OBSERVED

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
DICOTS (cont.)		
Fabaceae	<i>Acacia</i> sp.*	acacia
	<i>Astragalus</i> sp.	vetch
	<i>Lotus hamatus</i>	grab lotus
	<i>Lotus purshianus</i>	Spanish-clover
	<i>Lotus scoparius</i> var. <i>scoparius</i>	coastal deerweed
	<i>Lupinus</i> sp.	lupine
	<i>Medicago polymorpha</i> *	bur-clover
	<i>Trifolium fragiferum</i> *	strawberry clover
	<i>Erodium botrys</i> *	long-stem filaree
Geraniaceae	<i>Erodium moschatum</i> *	green-stem filaree
	<i>Erodium</i> sp.*	filaree
Hydrophyllaceae	<i>Pholistoma</i> sp.	fiesta flower
Lamiaceae	<i>Marrubium vulgare</i> *	horehound
	<i>Salvia mellifera</i>	black sage
Malvaceae	<i>Malva parviflora</i> *	cheeseweed
Myrtaceae	<i>Eucalyptus</i> sp.*	eucalyptus
Papaveraceae	<i>Eschscholzia californica</i>	California poppy
Polemoniaceae	<i>Navarretia hamata</i>	skunkweed
Polygonaceae	<i>Eriogonum fasciculatum</i> ssp.	
	<i>fasciculatum</i>	California buckwheat
	<i>Rumex crispus</i>	curly dock
Primulaceae	<i>Anagallis arvensis</i> *	scarlet pimpernel
Rhamnaceae	<i>Rhamnus ilicifolia</i>	holly-leaf redberry
Rosaceae	<i>Adenostoma fasciculatum</i>	chamise
	<i>Heteromeles arbutifolia</i>	toyon
Salicaceae	<i>Salix laevigata</i>	red willow
	<i>Salix lasiolepis</i>	arroyo willow
Scrophulariaceae	<i>Mimulus aurantiacus</i>	monkey-flower
Solanaceae	<i>Datura wrightii</i>	jimson weed, thorn-apple
	<i>Nicotiana glauca</i> *	tree tobacco
	<i>Solanum</i> sp.	Nightshade
	<i>Tamarix</i> sp.*	tamarisk
Verbenaceae	<i>Verbena lasiostachys</i>	verbena
	<i>Verbena</i> sp.	verbena

*Non-native species

†Sensitive species

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A-3

ANIMAL SPECIES OBSERVED



Appendix A-3
ANIMAL SPECIES OBSERVED – FORMER SOUTH COAST QUARRY

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
INVERTEBRATES	
Crustaceans	
<i>Oronectes</i> sp.*	crayfish
Beetles	
<i>Eleodes armada</i>	darkling beetle
Bees, Wasps	
<i>Bombus sonorous</i>	bumblebee
Butterflies	
<i>Apodemia mormo virgulti</i>	Behr's metalmark
<i>Erynnis funeralis</i>	funereal duskywing
<i>Hylephila phyleus</i>	fiery skipper
<i>Papilio rutulus</i>	western tiger swallowtail
<i>Papilio zelicaon</i>	Anise swallowtail
<i>Pieris rapae</i> *	cabbage white
<i>Vanessa cardui</i>	painted lady
VERTEBRATES	
<u>Amphibian</u>	
<i>Pseudacris regilla</i>	Pacific treefrog
<u>Reptiles</u>	
<i>Cnemidophorus thryperthrus beldingi</i>	orange-throated whiptail
<i>Elgaria multicarinata</i>	southern alligator lizard
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Uta stansburiana</i>	side-blotched lizard
<u>Birds</u>	
<i>Aeronautes saxatalis</i>	white-throated swift
<i>Agelaius phoeniceus</i>	red-winged blackbird
<i>Anas platyrhynchos</i>	mallard
<i>Aphelocoma coerulescens</i>	scrub jay
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Buteo lineatus</i> †	red-shouldered hawk
<i>Calypte anna</i>	Anna's hummingbird
<i>Calypte costae</i>	Costa's hummingbird
<i>Carpodacus mexicanus</i>	house finch
<i>Chamaea fasciata</i>	wrentit
<i>Charadrius vociferus</i>	killdeer
<i>Colaptes auratus</i>	northern flicker
<i>Columba livia</i>	rock dove

Appendix A-3 (cont.)
ANIMAL SPECIES OBSERVED – FORMER SOUTH COAST QUARRY

SCIENTIFIC NAME

COMMON NAME

VERTEBRATES (cont.)

Birds (cont.)

<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	common raven
<i>Dendroica petechia</i> †	yellow warbler
<i>Elanus caeruleus</i> †	white-tailed kite
<i>Empidonax difficilis</i>	Pacific slope flycatcher
<i>Falco sparverius</i>	American kestrel
<i>Geothlypis trichas</i>	common yellow throat
<i>Hirundo pyrrhonota</i>	cliff swallow
<i>Icteria virens</i> †	yellow-breasted chat
<i>Melospiza melodia</i>	song sparrow
<i>Mimus polyglottos</i>	northern mockingbird
<i>Molothrus ater</i> *	brown-headed cowbird
<i>Myiarchus cinerascens</i>	ash-throated flycatcher
<i>Picoides nuttallii</i>	Nuttall's woodpecker
<i>Pipilo crissalis</i>	California towhee
<i>Pipilo maculatus</i>	spotted towhee
<i>Polioptila californica californica</i> †	coastal California gnatcatcher
<i>Psaltiriparus minimus</i>	bushtit
<i>Sayornis nigricans</i>	black phoebe
<i>Sayornis saya</i>	Say's phoebe
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow
<i>Sturnella neglecta</i>	western meadowlark
<i>Sturnus vulgaris</i>	European starling
<i>Tachycineta thalassina</i>	violet-green swallow
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Troglodytes aedon</i>	house wren
<i>Tryannus vertacalis</i>	western kingbird
<i>Tyrannus vociferans</i>	Cassin's kingbird
<i>Vermivora celata</i>	orange-crowned warbler
<i>Vireo bellii pusillus</i> †	least Bell's vireo
<i>Wilsonia pusilla</i>	Wilson's warbler
<i>Zenaida macroura</i>	mourning dove

Mammals

<i>Canis familiaris</i>	domestic dog
<i>Didelphis virginiana</i>	Virginia opossum
<i>Neotoma</i> sp.	wood rat
<i>Spermophilus beecheyi nudipes</i>	California ground squirrel
<i>Sylvilagus audubonii</i>	desert cottontail
<i>Thomomys bottae</i>	Botta's pocket gopher

*Non-native species

†Sensitive species

HIGH AND MODERATE CATEGORY INVASIVE PLANTS



Appendix A-4
CAL-IPC: THE INVENTORY
HIGH AND MODERATE CATEGORY INVASIVE PLANTS

SCIENTIFIC NAME

COMMON NAME

High Category Species

<i>Alternanthera philoxeroides</i>	alligator weed
<i>Ammophila arenaria</i>	European beachgrass
<i>Arundo donax</i>	giant reed
<i>Brassica tournefortii</i>	Saharan mustard, African mustard
<i>Bromus madritensis ssp. rubens</i>	red brome
<i>Bromus tectorum</i>	downy brome, cheatgrass
<i>Carpobrotus edulis</i>	Hottentot-fig, iceplant
<i>Centaurea maculosa</i>	spotted knapweed
<i>Centaurea solstitialis</i>	yellow starthistle
<i>Cortaderia jubata</i>	jubatagrass
<i>Cortaderia selloana</i>	pampasgrass
<i>Cytisus scoparius</i>	Scotch broom
<i>Delairea odorata</i>	Cape-ivy, German-ivy
<i>Egeria densa</i>	Brazilian egeria
<i>Eichhornia crassipes</i>	water hyacinth
<i>Euphorbia esula</i>	leafy spurge
<i>Foeniculum vulgare</i>	fennel
<i>Genista monspessulana</i>	French broom
<i>Hedera helix, H. canariensis</i>	English ivy, Algerian ivy
<i>Hydrilla verticillata</i>	hydrilla
<i>Lepidium latifolium</i>	perennial pepperweed, tall whitetop
<i>Ludwigia hexapetala</i>	Uruguay water-primrose
<i>Ludwigia peploides ssp. montevidensis</i>	creeping water-primrose
<i>Lythrum salicaria</i>	purple loosestrife
<i>Myriophyllum aquaticum</i>	parrotfeather
<i>Onopordum acanthium</i>	Scotch thistle
<i>Rubus armeniacus</i>	Himalaya blackberry
<i>Sesbania punicea</i>	red sesbania, scarlet wisteria
<i>Spartium junceum</i>	Spanish broom
<i>Taeniatherum caput-medusae</i>	medusahead
<i>Tamarix parviflora</i>	smallflower tamarisk
<i>Tamarix ramosissima</i>	saltcedar, tamarisk

Appendix A-4 (continued)
CAL-IPC: THE INVENTORY
HIGH AND MODERATE CATEGORY INVASIVE PLANTS

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Moderate Category Species	
<i>Acacia dealbata</i>	silver wattle
<i>Acroptilon repens</i>	Russian knapweed
<i>Ageratina adenophora</i>	croftonweed, eupatorium
<i>Ailanthus altissima</i>	tree-of-heaven
<i>Alhagi maurorum</i>	camelthorn
<i>Arctotheca calendula (sterile)</i>	sterile capeweed
<i>Asparagus asparagoides</i>	bridal creeper
<i>Asphodelus fistulosus</i>	onionweed
<i>Atriplex semibaccata</i>	Australian saltbush
<i>Brassica nigra</i>	black mustard
<i>Bromus diandrus</i>	ripgut brome
<i>Cardaria chalepensis</i>	lens-podded white-top
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carpobrotus chilensis</i>	sea-fig, iceplant
<i>Centaurea calcitrapa</i>	purple starthistle
<i>Centaurea diffusa</i>	diffuse knapweed
<i>Chrysanthemum coronarium</i>	crown daisy
<i>Cirsium arvense</i>	Canada thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Conium maculatum</i>	poison-hemlock
<i>Cotoneaster lacteus</i>	Parney's cotoneaster
<i>Cotoneaster pannosus</i>	silverleaf cotoneaster
<i>Cynara cardunculus</i>	artichoke thistle
<i>Cynodon dactylon</i>	bermudagrass
<i>Cynosurus echinatus</i>	hedgehog dogtailgrass
<i>Cytisus striatus</i>	Portuguese broom
<i>Dipsacus fullonum</i>	common teasel
<i>Dipsacus sativus</i>	fuller's teasel
<i>Dittrichia graveolens</i>	stinkwort
<i>Ehrharta erecta</i>	erect veldtgrass
<i>Ehrharta longiflora</i>	long-flowered veldtgrass
<i>Elaeagnus angustifolia</i>	Russian-olive
<i>Emex spinosa</i>	spiny emex, devil's-thorn
<i>Erechtites glomerata, E. minima</i>	Australian fireweed
<i>Eucalyptus globulus</i>	Tasmanian blue gum

Appendix A-4 (continued)
CAL-IPC: THE INVENTORY
HIGH AND MODERATE CATEGORY INVASIVE PLANTS

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Moderate Category Species (continued)	
<i>Euphorbia terracina</i>	carnation spurge
<i>Festuca arundinacea</i>	tall fescue
<i>Ficus carica</i>	edible fig
<i>Geranium dissectum</i>	cutleaf geranium
<i>Glyceria declinata</i>	waxy mannagrass
<i>Halogeton glomeratus</i>	halogeton
<i>Hirschfeldia incana</i>	shortpod mustard
<i>Holcus lanatus</i>	common velvet grass
<i>Hordeum marinum, H. murinum</i>	Mediterranean barley
<i>Hypericum canariense</i>	Canary Island hypericum
<i>Hypericum perforatum</i>	common St. John's wort
<i>Hypochaeris radicata</i>	rough catsear, hairy dandelion
<i>Kochia scoparia</i>	kochia
<i>Leucanthemum vulgare</i>	ox-eye daisy
<i>Linaria genistifolia ssp. dalmatica</i>	Dalmation toadflax
<i>Linaria vulgaris</i>	yellow toadflax
<i>Lolium multiflorum</i>	Italian ryegrass
<i>Mentha pulegium</i>	pennyroyal
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant
<i>Myoporum laetum</i>	myoporum
<i>Nicotiana glauca</i>	tree tobacco
<i>Oxalis pes-caprae</i>	yellow oxalis
<i>Pennisetum setaceum</i>	crimson fountaingrass
<i>Phalaris aquatica</i>	hardinggrass
<i>Potamogeton crispus</i>	curlyleaf pondweed
<i>Retama monosperma</i>	bridal broom
<i>Rumex acetosella</i>	red sorrel, sheep sorrel
<i>Sisymbrium irio</i>	London rocket
<i>Torilis arvensis</i>	hedgearsley
<i>Trifolium hirtum</i>	rose clover
<i>Vinca major</i>	big periwinkle
<i>Vulpia myuros</i>	rattail fescue
<i>Washingtonia robusta</i>	Mexican fan palm

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A-5

PROPERTY ANALYSIS RECORD



**PROPERTY ANALYSIS RECORD (PAR) for
QUARRY CREEK OPEN SPACE EASEMENTS
CITY of CARLSBAD
June 17, 2011**

A Property Analysis Record (PAR) was prepared for the Quarry Creek Open Space Easement property in accordance with the provisions in the November 15, 2010 PAR contract between San Diego Habitat Conservancy (SDHC) and Hanson Aggregate (Project Proponent). The purpose of the PAR is to identify the tasks and costs associated with the long-term management and maintenance of the Quarry Creek conservation easement parcel, totaling approximately 28.22 acres, of which 23.13 acres will be actively managed for the benefit of the biological resources present. The remaining 5.09 acres of the easement will be included in management at the request of the U.S. Army Corps of Engineers and only managed to control unauthorized access, trash removal, and weeding of perennial non-native species (to include arundo, pampas grass, castor bean, tamarisk, and tree tobacco). This easement is located along Buena Vista Creek, south of State Route (SR) 78 approximately 3.5 miles east of Interstate 5 in the City of Carlsbad. The site lies within unsectioned lands within Township 11 South, Range 4 West of 7.5-minute U.S. Geological Survey San Luis Rey Quadrangle. Refer to Attachment A for a map of the open space easement.

This PAR includes Initial & Capital Tasks and Costs, as well as long-term Ongoing Tasks and Costs associated with managing the Open Space Easement (hereinafter referred to as "Preserve") in perpetuity. The costs were estimated utilizing the Center for Natural Lands Management PAR software, PAR System Version 2.0. The complete PAR data and cost sheets are provided in Attachment B. SDHC staff conducted site visit of Quarry Creek on 11 November 2010. The Habitat Manager assigned to this open space is Jim Rocks. Mr. Rocks meets the Carlsbad City's requirements as a Habitat Manager.

This updated PAR and the long-term management tasks included herein are based on the May 2010 Preserve Management Plan for Quarry Creek. The following documents were reviewed for this PAR:

- Preserve Management Plan for Quarry Creek, prepared by HELIX Environmental Planning, Inc., June 17, 2011,
- Quarry Creek Reclamation Project, Upland Mitigation Plan, prepared by HELIX Environmental Planning, Inc., June 17, 2011,
- Quarry Creek Reclamation Project, Wetland Mitigation Plan, prepared by HELIX Environmental Planning, Inc., June 17, 2011,
- Final Subsequent Environmental Impact Report, Vols. I-IV, prepared by HELIX Environmental Planning, Inc., February 24, 2010.

PAR has been organized into the following categories:

- Initial & Capital Tasks and Costs
- Ongoing Tasks and Costs
- Financial Summary
- Additional Assumptions

This PAR assumes the endowment will be funded in January 2012.

INITIAL & CAPITAL TASKS AND COSTS

\$23,840.70

The task and cost breakdown is provided in Attachment B, Section 8.

Assumptions for Initial & Capital Tasks and Costs

1. The Initial and Capital Costs above is for the first year of land stewardship activities as outlined in the PMP and includes regular annual tasks noted below and under Annual On-Going Tasks.
2. Property Inspection. Property inspection will occur after the Management Agreement is executed, the endowment is funded, and all other obligations by the Project Proponent are met pursuant to the Management Agreement. The inspection is anticipated to occur in early 2017. The condition of the property will meet the requirements described in the PMP. The SDHC Executive Director and the Preserve Manager (PM) shall inspect the property to ensure the condition of the property meets the PMP requirements, with particular attention paid to the status of the site relative to trash and debris, quality of habitat, trail condition and pre-existing split rail fencing. SDHC will meet on-site with the Project Proponent to verify the status of the site and each will sign an aerial photograph confirming the condition of the easements. The Project Proponent shall provide a current aerial photo (scale of 1"=400') of the site for this meeting.
3. Baseline documentation. The PM shall map the habitat types and quantities within the Preserve when SDHC commences stewardship, pursuant to Task # 1 above. Mapping will be done in digital format (GIS) and habitat types will be documented in tabular format as well. Mapping will include locations of any sensitive plant or animal species. Existing vegetation mapping and sensitive species locations provided by the Project Proponent will be used as a guide to focus the survey and species identification. An aerial photograph will be used for ground-truthing the vegetation and resources present. A total of five photo points will be established based on topography, access, and visibility from the location and selected to capture large areas of contiguous habitat to allow for monitoring of visual changes in habitat quality and quantity. Each photo site will be located via GPS and mapped on the aerial photo. No protocol surveys will be conducted for the baseline analysis. Depending upon the time of year long-term stewardship commences, baseline documentation may need to be delayed to April, May and/or early June to conduct the survey at the most opportune time to observe sensitive plant species. Observed species within each habitat type shall be documented by producing a list of all species observed directly or indirectly. In addition, the baseline mapping and documentation will include identification of any items in conflict with the purpose and goals of the PMP (e.g., trash or debris, invasive plant and animal species, human intrusion, etc.). Three permanent 10-meter by 10-meter sample locations will also be established. Baseline vegetation documentation using the most up-to-date vegetation class system at the start of management and shall be updated every five (5) years. Assumes Project Proponent's consultant, HELIX Environmental Planning, Inc., will provide all digital map files and previous biological reports for the parcel.
4. Sign Installation. SDHC shall install appropriate signage around the perimeter of the Preserve, identifying the property is protected habitat, contact information, illegal activities within the Preserve and other pertinent information. Up to 20 signs will be installed and maintained and located at the most likely places of human intrusion. Signs are projected to be replaced every 5 years. Fencing has yet to be designed and will be the responsibility of Project Proponent. However, coordination by the PM will be performed with the Project Proponent for location and type of fencing.
5. Database Management. File set up in SDHC file management system, including hard file, electronic files and GIS mapping.
6. Start-Up Costs. Operations costs associated with start-up, endowment processing, and accounting file setup.

7. Contingency of 12%.
8. Administrative cost of 24%.

ANNUAL ON-GOING TASKS AND COSTS

\$24,219.43

The task and cost breakdown is provided in Attachment B, Section 9.

Assumptions for Ongoing Tasks and Costs

1. Community Outreach. Once a final end use is determined, the PM will work with the end user in developing a public outreach and education program for the adjacent use. The PM will attend one community meeting per year to educate the surrounding users on the Preserve resources and the need for community support to meet the Preserve goals for preservation. The property owner will provide the meeting venue. In addition, the PM will educate the community regarding the impacts of domestic pets, invasive species, and human intrusion on wildlife at these meetings and by submitting articles for inclusion in surrounding property newsletters. One article will be submitted once a year for inclusion in the newsletters.
2. General Communication and Coordination. The PM will coordinate with the City, the City's Preserve Steward, other preserve managers, the resource agencies, the Tribe, and the general public. This is expected to be accomplished primarily by phone calls, email, and fax. SDHC staff will attend the quarterly Carlsbad habitat preserve managers meetings. The PM will coordinate with the municipal or emergency services will be performed, if necessary. The PM will attend the annual Carlsbad Public Workshop for HMP implementation, hosted by the City.
3. Quarterly Monitoring Visits. The PM shall conduct quarterly site assessments to observe natural conditions and identify potential conflicts to the Preserve goals. Quarterly visits shall focus on illegal/unauthorized activities, dumping, human intrusion, formation of trails, and increase in invasive species. Trash will be picked-up and removed during the patrols. The PM shall inspect Preserve signs and replace as necessary. Illegal squatting within the Preserve shall be reported to the City Police Dept. and the City's HMP Administrator. Quarterly visits will be documented by keeping a log report and will include information relative to the Preserve. The quarterly log reports shall be appended to the annual report (Task # 15, below). Although the PMP states that more frequent monitoring visits may be warranted in the future based on site conditions, this PAR only assumes four site visits per year. If additional site visits are deemed necessary, additional funding of the endowment will be required to pay for the additional visits.
4. Baseline Mapping Updates and CRAM Analysis. Vegetation mapping shall be updated every five years, including data assessment for the baseline mapping and will be updated using the most current vegetation classification system for San Diego County. At this time it is anticipated that the classification system prepared by Todd Keeler-Wolf will be used in the future. Vegetation mapping and photo updates will be presented to the City in that year's (fifth year) annual report. A California Rapid Assessment Method (CRAM) Analysis will be performed of the riparian area every five years and updates will be included in that year's (fifth year) annual report.
5. Adaptive Management. While adaptive management will occur as necessary, the PM shall specifically examine the relationship between vegetation variables and habitat quality to determine if a change in management of the Preserve is warranted. As noted in the List of Assumptions, adaptive management will be achieved within the confines of the contingency/adaptive management funds' projected annual return as budgeted in the PAR.

6. Sensitive Species. Presence/absence surveys for the sensitive animal species listed below will be assessed by the PM as part of the baseline inventory and during regular quarterly monitoring visits. Protocol surveys during the appropriate time of year for California gnatcatcher (3 visits) and least Bell's vireo (8 visits) will be performed every three years.

Least Bell's Vireo
Yellow Warbler
Yellow-Breasted Chat

White-tailed kite
Coastal California gnatcatcher
San Diego Black-tailed Jackrabbit

Other species that have the potential to occur (Appendix A-7 to the PMP), if detected, shall be added to this monitoring program. The sensitive species surveys shall be documented and mapped in the annual report prepared by the PM. Brown-headed cowbirds will also be surveyed. No Brown-headed cowbird eradication activities are included in this PAR. Results of the surveys will be included in the annual report for that year.

7. Log Reports. The PM shall document all field visits. Field visit logs/reports shall be appended to the annual report.
8. Fire Fighting Strategy. Because of the need to protect property, management strategies will not include letting fires burn to allow for complete burns. No fuel modification practices will be allowed in the preserve.
9. Invasive Removal. Invasives will be removed from the Preserve and managed during restoration and SDHC expects to commence management of the Preserve relatively invasive-free. However, the area immediately upstream is not being managed for conservation values and the reintroduction of invasive species is expected to be an ongoing battle in the management of the Preserve in perpetuity. An hourly total for weeding and invasive removal events is provided and will likely be for more than two weeding events per year. The number of weeding events will be at the direction of the PM and conducted at the appropriate time of year, but within the total hours allotted for this task. The majority of the removal will be performed by a labor crew of two with coordination, oversight, and direction by a Superintendent and the PM.
10. Erosion Control. The Preserve is expected to be well vegetated at the end of the restoration period and when SDHC starts management. SDHC will implement best management practices (BMPs) where necessary to control erosion and sedimentation. A nominal amount of labor and equipment has been included for annual erosion control.
11. Drop Structure. The potential for failure of one of the drop structures on the project is considered highly unlikely based on the extensive review and approval of multiple reviewing agencies, and the review and monitoring of the actual construction of the drop structures. However, as a further safeguard, funding to repair one of the drop structures has been included in the PAR for the project, with these funds to be held in a separate account by the Preserve Manager which may only be used for repair of the drop structures. Repair of a drop structure, should it fail, would be the responsibility of the underlying landowner (or the public agency that assumes responsibility for the drop-structures). The Preserve Manager shall not be responsible for repair of the drop structure, but shall have the ability to access and disperse these funds should it be necessary to insure that the drop structure is repaired.
12. Native American Access. The San Luis Rey Band of Luiseño Mission Indians considers El Salto Falls at the upstream end of the Preserve a sacred site, and the conservation easement will allow for limited access by the tribe. The ED or HM will coordinate with the tribe to insure implementation

of the El Salto Falls Management Plan boundaries that occur within the preserve are being met while allowing the tribe access to the falls.

13. Annual Report. The PM shall prepare an annual letter report documenting the results of the annual log reports, surveys and communications. Reports shall include updated mapping and photographs, in accordance with the schedule in the PMP. The annual report will be submitted to the City's Habitat Manager, CDFG and USFWS and made available to the ACOE, RWQCB, and EPA upon request. Recommendations shall be made for PMP modifications or adaptive management.
14. Management Plan Updates. The PM shall update the PMP every three years to reflect site conditions and adaptive management techniques that have been implemented.
15. Contingency of 12%.
16. Administrative cost of 24%.

FINANCIAL SUMMARY (Refer also to Attachment B, Section 10)

Initial Financial Requirements*	\$ 72,279.56
Annual Ongoing Financial Requirements – \$24,219.43	
Endowment to Provide Income of \$24,219.43**	\$ 538,222.00
Drop Structure Repair Fund	\$ 92,000.00
Emergency and Legal Defense Fund (4% of Endowment)	\$ 21,528.88
Total Contribution	\$ 724,030.44

* Includes the first year Initial and Capital amount plus years two and three of management.

** Assumes a 4.5 % capitalization rate.

ADDITIONAL ASSUMPTIONS

1. The PAR cost estimate is good for a period of six months.
2. This PAR assumes SDHC will not take the property in fee title and will be the Grantee of the Conservation Easement. All costs associated with preparation of the Conservation Easement and Management Agreement shall be borne by the Project Proponent under separate contract.
3. The ongoing remediation effort for the fuel-contaminated soil is predominantly outside the preserve and assumed to be completed prior to the start of management of the Preserve by SDHC.
4. There will be one Endowment; funded at one time. This PAR assumes the endowment will be funded in January 2012. If the endowment is to be funded later than 2012, the PAR estimate will be revised to reflect appropriate billing rates and the amount of the endowment adjusted to include the revised rates.
5. All brush management zones are outside the limits of the Preserve. SDHC is not responsible for brush management or controlled burns within the Preserve.
6. Assumes natural recovery will be the primary source of revegetation in the event of a wildfire, flood event or natural earth movement. Contingency funds will be used for localized revegetation to the extent available. SDHC will not be responsible for maintenance or replacement of the drop structures and this will be the responsibility of the property owner. The PMP states that a site-specific fire management plan will be prepared for the development. This PAR assumes that SDHC

will not prepare the fire management plan, but will provide input for resource protection in conjunction with the plan.

7. Invasives will be removed within the confines of the projected budget in the PAR for this task. Contingency funds may be used as determined by the PM when additional weeding may be necessary.
8. No trails are proposed within the Preserve, nor would SDHC perform trail maintenance.
9. The Project Proponent shall guarantee physical and legal access to Quarry Creek Preserve. Access points shall be verified by SDHC prior to execution of the Management Agreement.
10. The perimeter of the Preserve shall be clearly marked, staked, or fenced by the Project Proponent prior to SDHC taking over the long-term habitat management. Perimeter GPS data points shall be provided to SDHC.
11. Fence installation around the perimeter of the preserve and maintenance of the fence shall be the responsibility of the Project Proponent or long-term owner.
12. This PAR estimate does not include the costs associated with SDHC and SDHC General Counsel review of legal documents, including but not limited to: Conservation Easements, Title Reports, Management Agreements, Real Property Transfer Agreements, Access Agreements, or Deeds. Review and comment on applicable documents will be performed under a separate contract prior to SDHC taking responsibility for long-term habitat management. SDHC will require a minimum of four weeks between finalization Management Agreement and Conservation Easement Deed(s) before execution to allow time for Board review and vote.
13. Minimal erosion control is anticipated. Natural recovery is assumed for impacts to habitat due to flooding. Localized revegetation will be implemented with contingency funds when necessary and to the extent they are available.
14. SDHC is not responsible for the condition of open space within the limits of future easements crossing the Preserve. Any impact to native habitat within the Preserve as a result of activities within existing utility or road easement is not the obligation of SDHC's to remedy.
15. All digital files of site surveys, reports (BTR, PMP) and mapping, including digitized topographic maps, digitized vegetation maps and aerial photographs (e.g. from the HELIX Environmental Planning, Inc. Biological Technical Reports) shall be provided to SDHC prior to the start of habitat management. Project Proponent shall supply two hard copies of the final PMP.
16. Project Proponent shall supply a current aerial photo covering the Preserve parcel prior to initial site inspection.
17. Adaptive Management is anticipated over the life of the stewardship and the PMP is expected to evolve and be updated as site conditions warrant. However, changes to the scope of annual stewardship as a result of adaptive management are limited to the projected annual returns of the endowment and adaptive management budget.
18. SDHC will document any newly identified species within the Preserve and will map and document any future-listed MSCP-covered species. However, focused or protocol surveys for as-yet unidentified listed species will be limited to the availability of contingency/adaptive management funds.

Section 8 - Initial & Capital Tasks and Costs

Property Title: Quarry Creek

Dataset: CA004

PAR ID: 1037

05/09/2011

Budget: PAR

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Times Years	Total Cost
ACQUISITION							
Inspection	Property inspection ED	L. Hours	4.00	103.00	412.00	1.0	412.00
Inspection	Property inspection PM	L. Hours	8.00	70.00	560.00	1.0	560.00
Other	Document Review/Start-up	L. Hours	8.00	103.00	824.00	1.0	824.00
Other	Doc. Rev/Start-up & Coord	L. hours	12.00	70.00	840.00	1.0	840.00
Sub-Total							2,636.00
BIOTIC SURVEYS							
Project Management	Supervise/coordinate ED	L. Hours	4.00	103.00	412.00	1.0	412.00
Project Management	Coordinate PM w/Res Ecol.	L. Hours	4.00	70.00	280.00	1.0	280.00
Project Management	PM quarterly visits	L. Hours	24.00	70.00	1,680.00	1.0	1,680.00
Other	Baseline Survey PM	L. Hours	4.00	70.00	280.00	1.0	280.00
Other	Baseline Mapping PM Veg	L. Hours	8.00	70.00	560.00	1.0	560.00
Other	Baseline Mapping GIS	L. Hours	6.00	73.00	438.00	1.0	438.00
Sub-Total							3,650.00
PUBLIC SERVICES							
Sign, Aluminum	Aluminum 20" X 24"	Item	20.00	38.00	760.00	1.0	760.00
Community Outreach	Meetings PM	L. Hours	8.00	70.00	560.00	1.0	560.00
Community Outreach	Meetings ED	L. Hours	2.00	103.00	206.00	1.0	206.00
CRMP Coordination	Coord, w.City, pres. mgrs.,etc	L. Hours	16.00	70.00	1,120.00	1.0	1,120.00
CRMP Coordination	Coord, w.City, pres. mgrs.,etc	L. Hours	4.00	103.00	412.00	1.0	412.00
Other	T-posts and hardware	Item	17.00	10.00	170.00	1.0	170.00
Other	Sign Installation	L Hours	12.00	30.00	360.00	1.0	360.00
Sub-Total							3,588.00
REPORTING							
Database Management	Data Input ED	L. Hours	4.00	103.00	412.00	1.0	412.00
Database Management	Data Input PM	L. Hours	6.00	70.00	420.00	1.0	420.00
GIS/CAD Management	Data Management	L. Hours	8.00	52.00	416.00	1.0	416.00
Annual Reports	PM report preparation	L. Hours	12.00	70.00	840.00	1.0	840.00
Annual Reports	ED report review and coord.	L. Hours	4.00	103.00	412.00	1.0	412.00
Annual Reports	GIS Mapping update	L. Hours	1.00	52.00	52.00	1.0	52.00
Monitoring Reports	PM Quarterly Report prep	L. Hours	12.00	70.00	840.00	1.0	840.00
Monitoring Reports	ED Quarterly Report review	L. Hours	4.00	103.00	412.00	1.0	412.00
Report Production	Repro and mail	Item	1.00	43.60	43.60	1.0	43.60
Other	Aerial Photo	Photo	1.00	36.00	36.00	1.0	36.00
Sub-Total							3,883.60

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Times Years	Total Cost
OFFICE MAINTENANCE							
Administrative	Operations	L. Hours	6.00	103.00	618.00	1.0	618.00
Taxes and Fees	Tax Bill, SFC	Year	1.00	120.00	120.00	1.0	120.00
Sub-Total							738.00
FIELD EQUIPMENT							
GPS, Rover & Base Unit	GPS/Camera/Laptop/Phone	Item	1.00	85.00	85.00	1.0	85.00
Vehicle	Mileage quarterly visits	Mile	320.00	0.59	188.80	1.0	188.80
Sub-Total							273.80
OPERATIONS							
Audit	CPA Audit	Per Site	1.00	800.00	800.00	1.0	800.00
Endowment	Process and Track	L. Hours	4.00	103.00	412.00	1.0	412.00
Insurance	Liability/Fee	Acres	23.00	17.00	391.00	1.0	391.00
Property Tax Exemption	File	L. Hours	2.00	65.00	130.00	1.0	130.00
Project Accounting	Setup and maintain	L. Hours	8.00	83.00	664.00	1.0	664.00
Sub-Total							2,397.00
CONTINGENCY & ADMINISTRATION							
Contingency							2,059.97
Administration							4,614.33
Sub-Total							6,674.30
Total							23,840.70

Section 9 - Ongoing Tasks and Costs

Property Title: Quarry Creek

Dataset: CA004

PAR ID: 1037

05/09/2011

Budget: PAR

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
BIOTIC SURVEYS							
Project Management	PM quarterly visits	L. Hours	24.00	70.00	1,680.00	1	1,680.00
Project Management	PM Sen Species Surveys	L. Hours	52.00	70.00	3,640.00	3	1,213.33
Project Management	GIS base map update	L. Hours	8.00	52.00	416.00	5	83.20
Project Management	PM base map update	L. Hours	16.00	70.00	1,120.00	5	224.00
Project Management	PM CRAM survey and prep	L. Hours	8.00	70.00	560.00	5	112.00
Project Management	Asst. CRAM survey	L. Hours	6.00	40.00	240.00	5	48.00
Sub-Total							3,360.53
HABITAT MAINTENANCE							
Erosion Control	Slope Stabilization	L. Hours	8.00	30.00	240.00	1	240.00
Erosion Control	BMP materials	Item	1.00	300.00	300.00	1	300.00
Exotic Plant Control	Hand Removal, Labor	L. Hours	80.00	30.00	2,400.00	1	2,400.00
Exotic Plant Control	Supervisor	L. Hours.	8.00	70.00	560.00	1	560.00
Exotic Plant Control	PM oversite and coord.	L. Hours	8.00	70.00	560.00	1	560.00
Exotic Plant Control	Herbicide	Gal.	3.00	281.00	843.00	1	843.00
Sub-Total							4,903.00
PUBLIC SERVICES							
Sign, Aluminum	Aluminum 20" X 24"	Item	20.00	38.00	760.00	5	152.00
Community Outreach	Meetings PM	L. Hours	8.00	70.00	560.00	1	560.00
Community Outreach	Meetings ED	L. Hours	2.00	103.00	206.00	1	206.00
CRMP Coordination	Coord, w.City, pres. mgrs.,etc	L. Hours	16.00	70.00	1,120.00	1	1,120.00
CRMP Coordination	Coord, w.City, pres. mgrs.,etc	L. Hours	4.00	103.00	412.00	1	412.00
Other	T-posts and hardware	Item	17.00	10.00	170.00	5	34.00
Other	Sign Installation	L Hours	12.00	30.00	360.00	5	72.00
Sub-Total							2,556.00
REPORTING							
Annual Reports	PM report preparation	L. Hours	12.00	70.00	840.00	1	840.00
Annual Reports	ED report review and coord.	L. Hours	4.00	103.00	412.00	1	412.00
Annual Reports	GIS Mapping update	L. Hours	1.00	52.00	52.00	1	52.00
Annual Reports	PM CRAM reporting	L. Hours	4.00	70.00	280.00	3	93.33
Management Plan	PMP update PM	L. Hours	12.00	70.00	840.00	3	280.00
Management Plan	PM Sen Species info to AP	L. Hours	8.00	70.00	560.00	3	186.67
Management Plan	PMP update ED review and	L. Hours	2.00	103.00	206.00	3	68.67
Monitoring Reports	PM Quarterly Report prep	L. Hours	12.00	70.00	840.00	1	840.00
Monitoring Reports	ED Quarterly Report review	L. Hours	4.00	103.00	412.00	1	412.00
Report Production	Repro and mail	Item	1.00	43.60	43.60	1	43.60
Other	Aerial Photo	Photo	1.00	36.00	36.00	1	36.00
Sub-Total							3,264.27

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
OFFICE MAINTENANCE							
Administrative	Operations	L. Hours	6.00	103.00	618.00	1	618.00
Taxes and Fees	Tax Bill, SFC	Year	1.00	120.00	120.00	1	120.00
Sub-Total							738.00
FIELD EQUIPMENT							
GPS, Rover & Base Unit	GPS/Camera/Laptop/Phone	Item	1.00	85.00	85.00	1	85.00
Vehicle	Mileage Sen Species Sur	Mile	640.00	0.59	377.60	3	125.87
Vehicle	Mileage CRAM Survey	Mile	80.00	0.59	47.20	5	9.44
Sub-Total							220.31
OPERATIONS							
Audit	CPA Audit	Per Site	1.00	800.00	800.00	1	800.00
Endowment	Process and Track	L. Hours	4.00	103.00	412.00	1	412.00
Insurance	Liability/Fee	Acres	23.00	17.00	391.00	1	391.00
Property Tax Exemption	File	L. Hours	2.00	65.00	130.00	1	130.00
Project Accounting	Setup and maintain	L. Hours	8.00	83.00	664.00	1	664.00
Sub-Total							2,397.00
CONTINGENCY & ADMINISTRATION							
Contingency							2,092.69
Administration							4,687.63
Sub-Total							6,780.32
Total							24,219.43

Section 10 - Financial Summary

Property Title: Quarry Creek

Dataset: CA004

PAR ID: 1037

05/09/2011

PAR(23 ac.)

	Rate %	Total \$
INITIAL FINANCIAL REQUIREMENTS		
I & C Revenue		0
I & C Management Costs		17,166
I & C Contingency Expense	12.00	2,060
Total I & C Management Costs		19,226
I & C Administrative Costs of Total I & C Management Costs	24.00	4,614
Total I & C Costs		23,841
Net I & C Management and Administrative Costs		23,841
ANNUAL ONGOING FINANCIAL REQUIREMENTS		
Ongoing Costs		17,439
Ongoing Contingency Expense	12.00	2,093
Total Ongoing Management Costs		19,532
Ongoing Administrative Costs of Total Ongoing Management costs	24.00	4,688
Total Ongoing Costs		24,220
ENDOWMENT REQUIREMENTS FOR ONGOING STEWARDSHIP		
Endowment to Provide Income of \$ 24,220		538,222
Endowment per Acre is \$ 23,401.		
Ongoing Management Costs Based on 4.50% of Endowment per Year.		
Ongoing Management Funding is \$ 24,220 per Year Resulting in \$1,053 per Acre per Year.		
TOTAL CONTRIBUTION		562,063