Vernal Pool Management Plan for the Castlerock Project City of San Diego Project No. 10046

Prepared for

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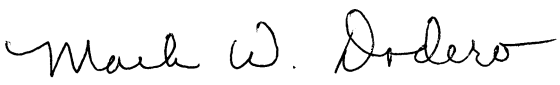
RECON Number 3536-2
February 10, 2012



Mark Dodero, Senior Biologist

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1.0 Introduction

This document presents a long-term maintenance plan for the preserved and restored vernal pools located within the Vernal Pool Preserve (Preserve; Figures 1 and 2). It provides a preliminary description of the preservation and goals associated with the vernal pools. The project preserves five vernal pools and their watersheds, which are located in the northeastern portion of the site. The Preserve is approximately 1.92 acres in total and consists of the 0.45-acre enhancement area where the five existing vernal pools would be preserved in addition to a 1.47-acre Vernal Pool Restoration Area. The Vernal Pool Restoration Area would consist of 0.03 acre (1,260 square feet) of restored vernal pools and 1.44 acres of native grassland upland habitat. The vernal pool restoration would be provided to mitigate for project impacts to 420 square feet of non-jurisdictional road ruts occupied by San Diego fairy shrimp. The restored vernal pool mitigation would be at a 3:1 ratio and would provide a minimum of 1,260 square feet of occupied San Diego fairy shrimp habitat (RECON 2012a). A 0.48-acre Extended Weed Control Area, consisting of native grassland located adjacent to the Preserve, would be targeted for weed control activities during the initial five-year maintenance period. The maintenance activities identified in this document are designed to ensure the continued existence of these existing and restored vernal pools on-site. Maintenance around the preserved vernal pools is intended to protect against indirect impacts. This Vernal Pool Management Plan (VPMP) is directed specifically at the preserved and restored pools. Five vernal pools, totaling less than 0.01 acre, were delineated by Glenn Lukos Associates (GLA; 2012). Nine other features were also delineated within the Castlerock project area; however, they were evaluated and determined to not be jurisdictional vernal pools. Four of these non-jurisdictional features were found to support San Diego fairy shrimp, and would be impacted by the proposed project (GLA 2012; RECON 2012b). To mitigate for this impact to 420 square feet of San Diego fairy shrimp habitat, restoration of a minimum of 1,260 square feet of surface area and the associated watershed is needed to support San Diego fairy shrimp (RECON 2012a). The entire 1.92-acre Preserve would be restored and/or enhanced in conjunction with the San Diego fairy shrimp mitigation program (RECON 2012a). The VPMP would be implemented for the life of the project by the Owner/Permittee or its qualified designated representative/entity. Any necessary notice would be given to appropriate entities as noted in the monitoring discussion of this document (Section 9.0).

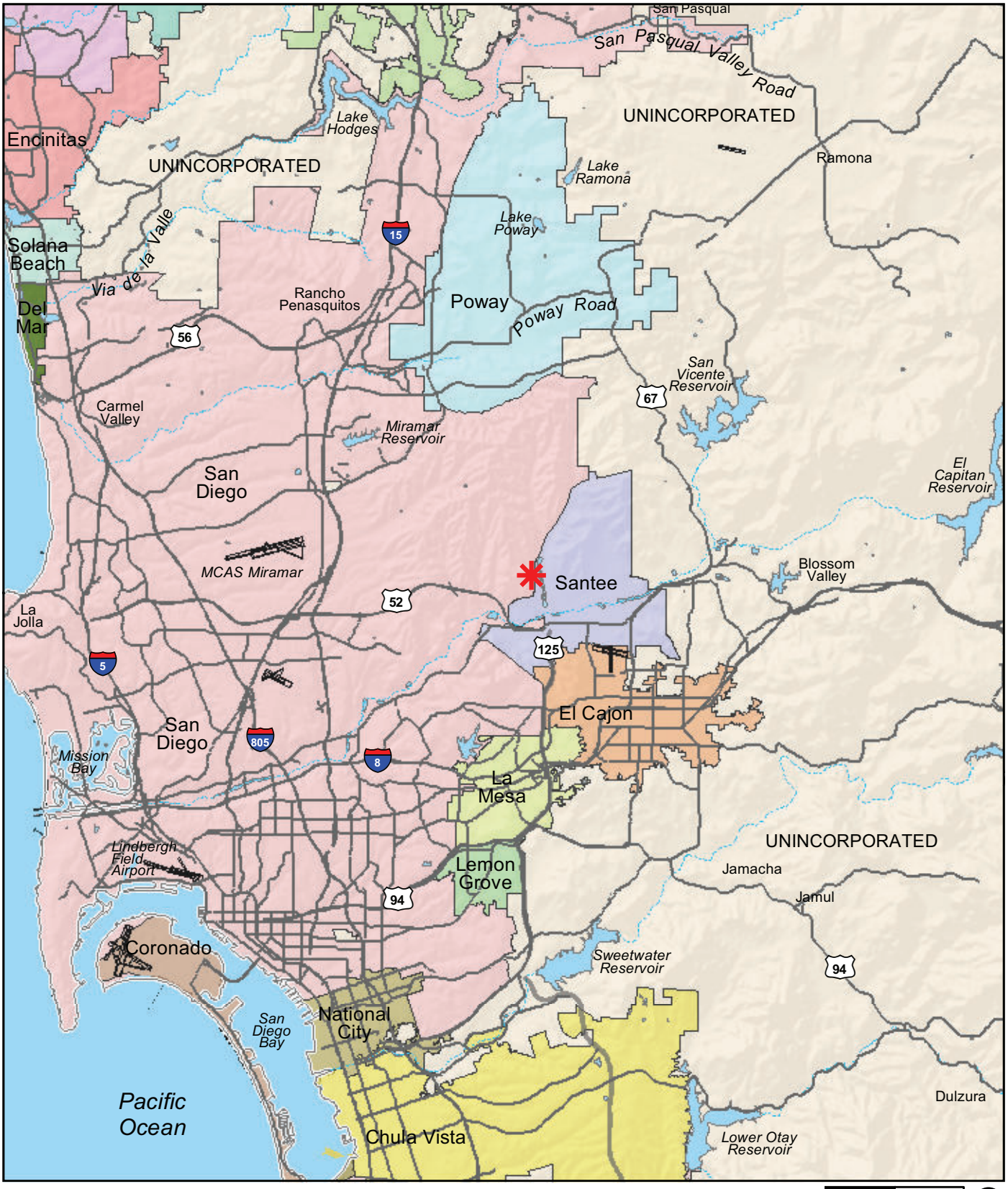

FIGURE 1

Regional Location

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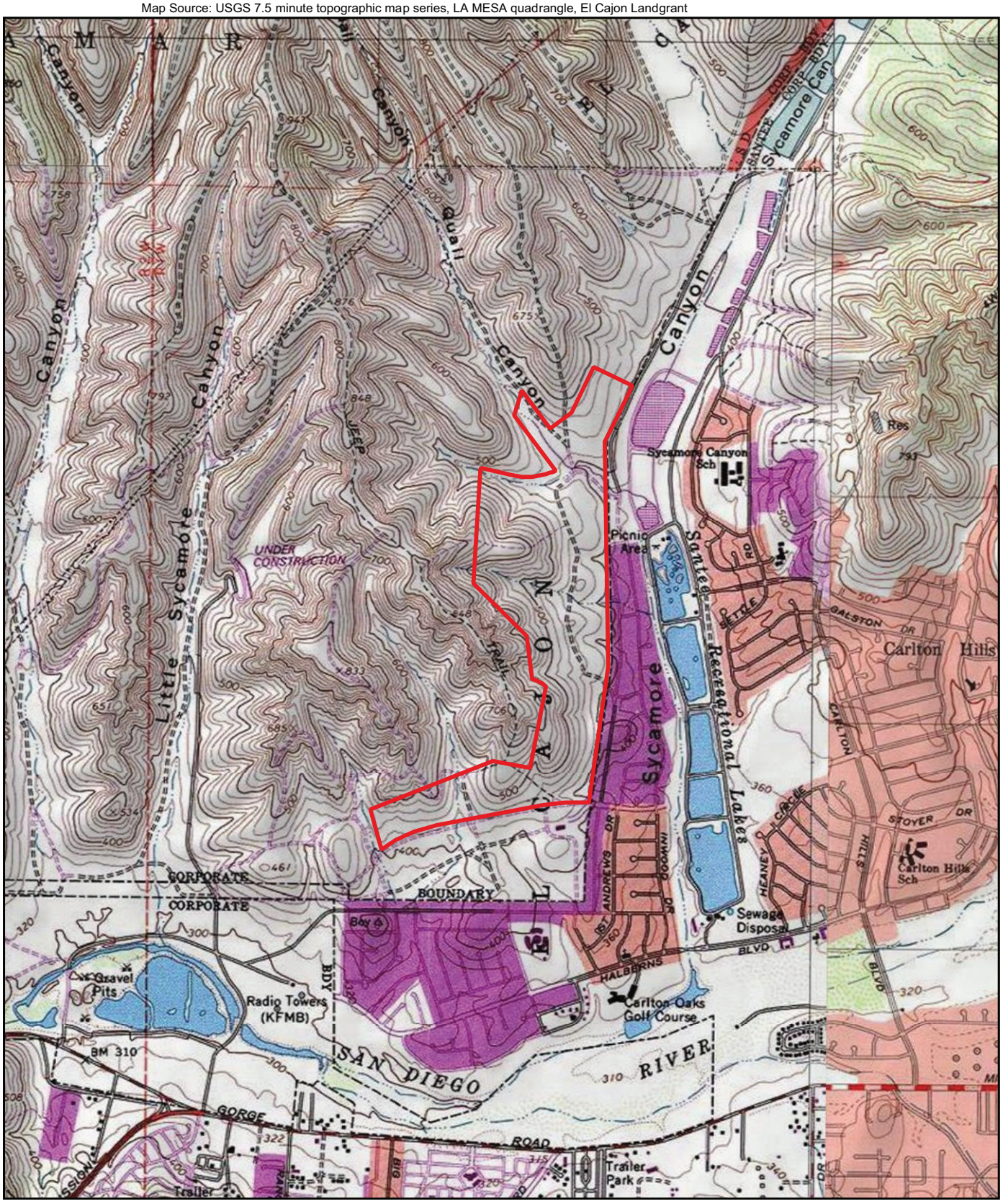
Map Source: USGS 7.5 minute topographic map series, LA MESA quadrangle, El Cajon Landgrant



Project Boundary

FIGURE 2

Project Location on USGS Map

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2.0 Project Location and Description

The 203.64-acre Castlerock site is located in the city of San Diego, in the East Elliott community planning area, on the north side of Mast Boulevard between Medina Drive and West Hills Parkway (see Figures 1 and 2). Pardee Homes is proposing a residential development at the Castlerock site in the City of San Diego, California (see Figures 1 and 2). This report evaluates two project development scenarios for this site; the Annexation Scenario and the No Annexation Scenario. The Annexation Scenario assumes that the project is annexed into the City of Santee.

For the Annexation Scenario, Pardee Homes proposes to develop approximately 108.72 out of a total of 203.64 acres of the Castlerock site for residential and recreational use (Natural Resource Consultants [NRC] 2012; Figure 3a). The Annexation Scenario would result in the construction of 283 detached single-family residences, 147 single-family detached units clustered on larger lots (referred to as green court units), approximately 4 acres of public parks, 0.65 acre (gross) of pocket parks, a pedestrian trail, and public streets and private driveways on an undeveloped 203.64-acre site within the East Elliott Community Plan. The remainder of the property (94.92 acres) would remain undisturbed as open space, except for small areas needed for brush management. Access to the Annexation Scenario would be provided from Mast Boulevard from the south.

The No Annexation Scenario assumes the project is not annexed into the City of Santee and remains within the City of San Diego. For the No Annexation Scenario, Pardee Homes proposes to develop approximately 108.91 out of a total of 203.64 acres of the Castlerock site for residential and recreational use (Figure 3b). Due to the additional infrastructure requirements, the No Annexation Scenario has one less detached single-family residence and seven less green court units. The No Annexation Scenario would involve minor changes in the land uses with 282 detached single-family residences, 140 single-family detached green court units, approximately 4 acres of public parks, 0.50 acre (gross) of pocket parks, a pedestrian trail, and public streets and private driveways, and 94.73 acres of open space.

Five vernal pools, totaling less than 0.01 acre, were delineated by Glenn Lukos Associates (2012). The proposed project preserves the five existing vernal pools and their watersheds as well as restores a minimum of 1,260 square feet of additional pool surface area to mitigate for impacts to San Diego fairy shrimp (Figures 4a, 4b, and 5). The Vernal Pool Preserve consists of 1.92 acres and would contain both the preserved and restored vernal pools. Weed control efforts in a 0.48-acre extended weeding area is included in the initial five-year maintenance and monitoring period (see Figure 5). This extended area is not part of the long-term management area covered by this VPMP.

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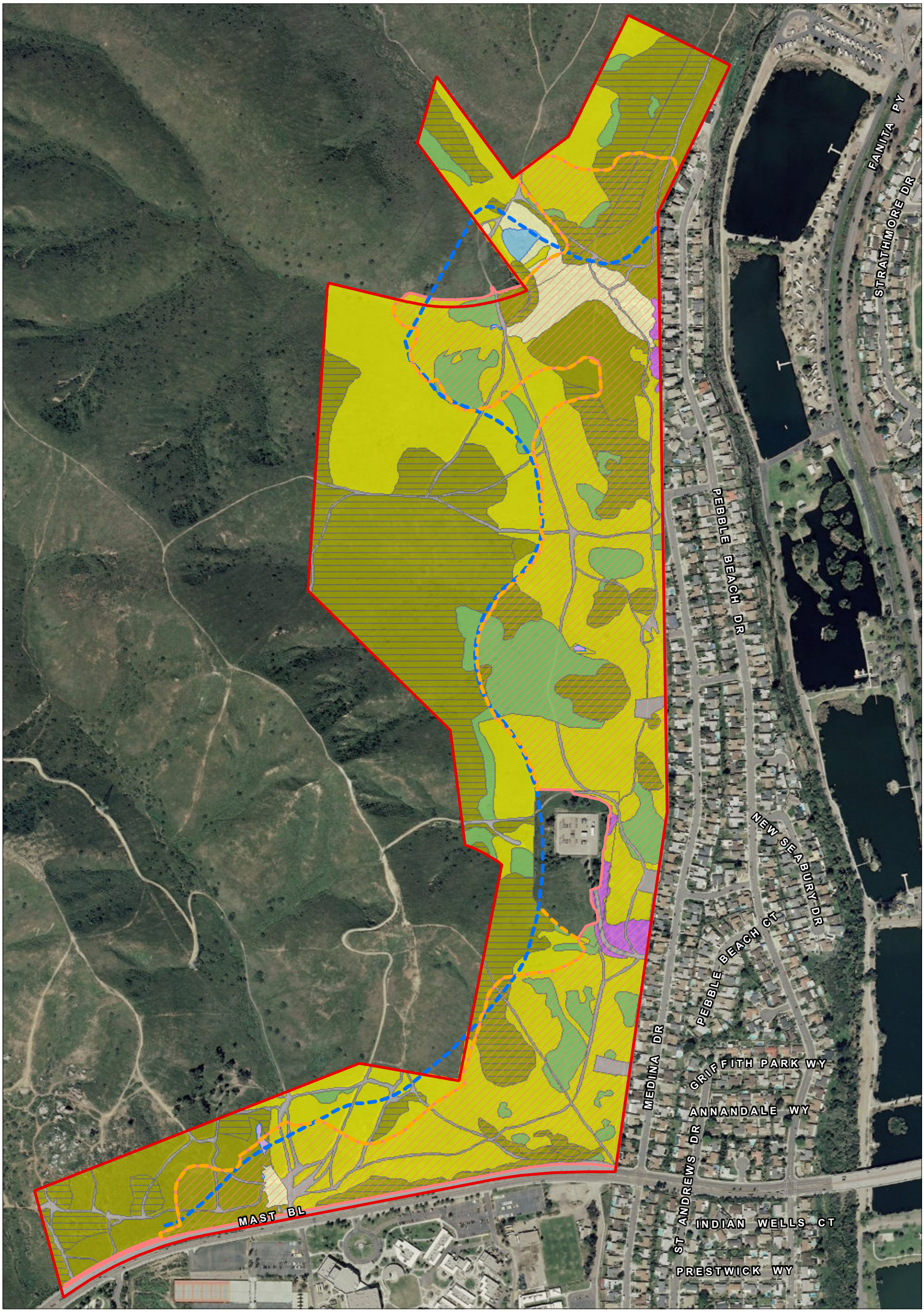

FIGURE 3a

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Annexation Scenario Impact Area

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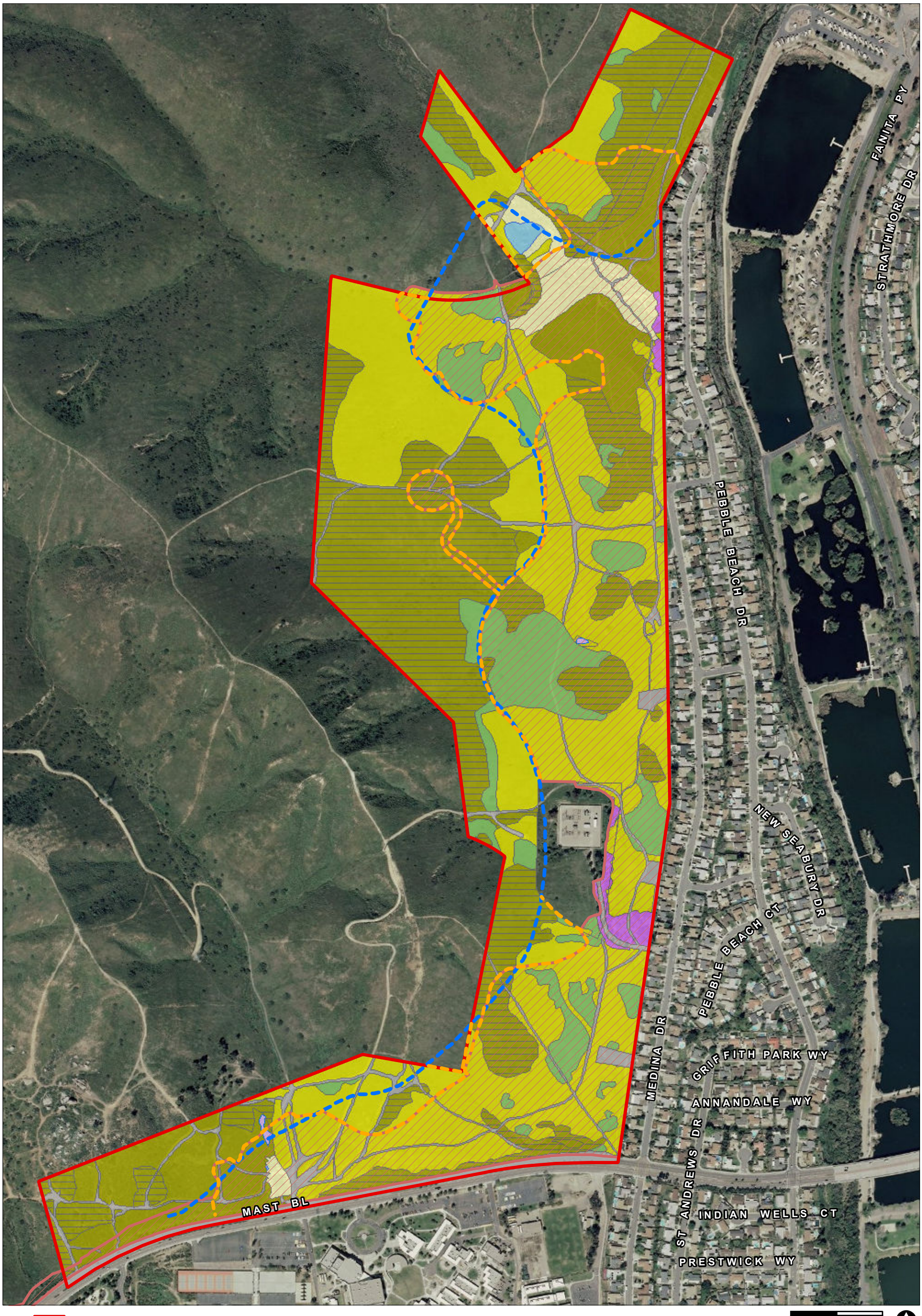

Project Boundary
No Annexation Scenario Impact Area
Proposed MHPA
Existing MHPA

Vegetation Communities
Coastal Sage Scrub
Disturbed Coastal Sage Scrub
Baccharis-dominated CSS
Annual Grassland
Native Grassland
Coastal and Valley Freshwater Marsh
Emergent Wetland
Eucalyptus Woodland
Disturbed

0 Feet 500

FIGURE 3b

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No Annexation Scenario Impact Area

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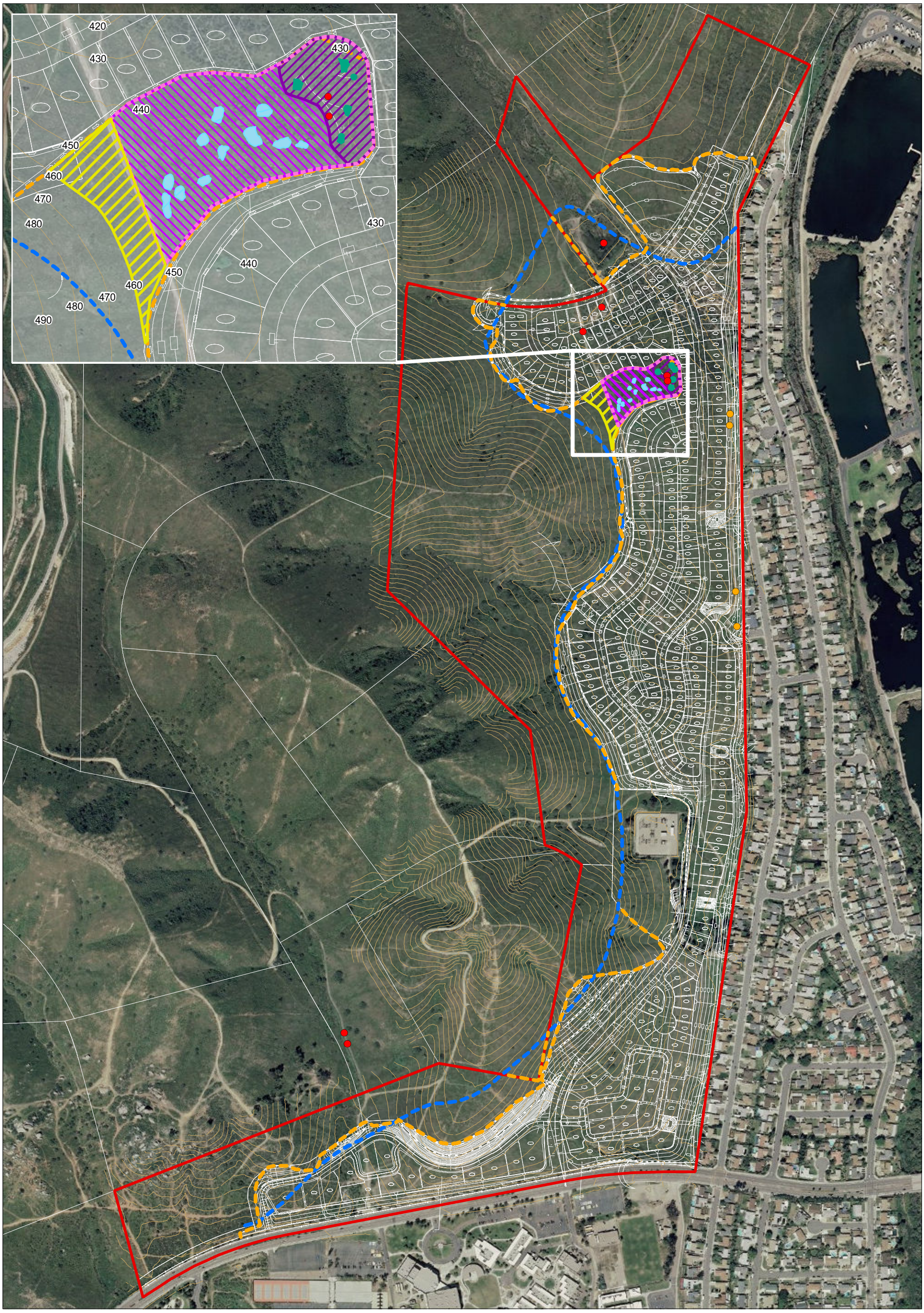

Project Boundary
Proposed MHPA
Existing MHPA
Vernal Pool Preserve Area
Existing Vernal Pool Area
Vernal Pool Restoration Area (San Diego Fairy Shrimp Mitigation Area)
Extended Weed Control Area (Five Year Maintenance and Monitoring Period Only)
Proposed Restoration Vernal Pools
Preserved Vernal Pools
Features
Features Containing San Diego Fairy Shrimp

0 Feet 500

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FIGURE 4a

Vernal Pool Preserve - Annexation Scenario

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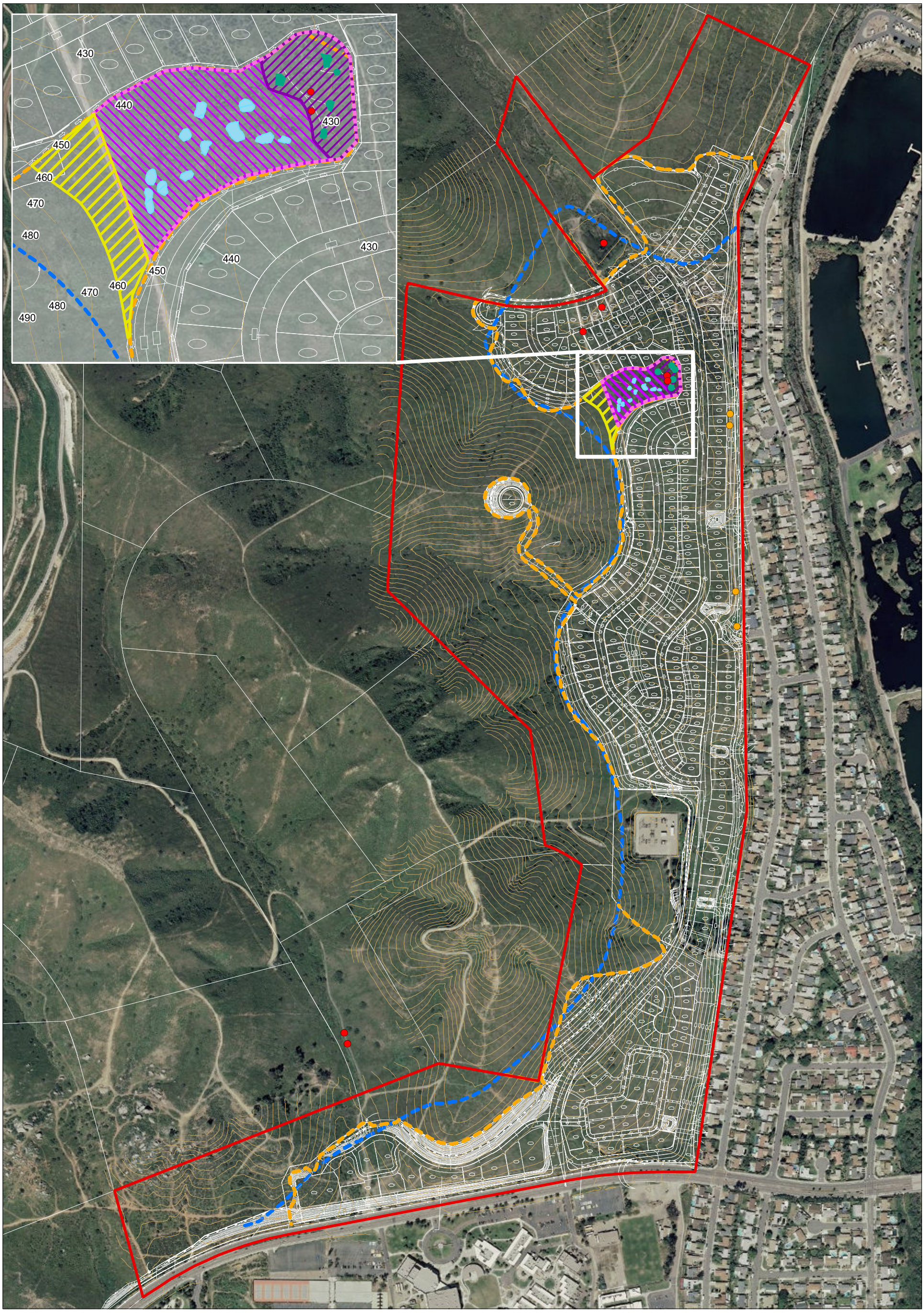

Project Boundary
Proposed MHPA
Existing MHPA
Vernal Pool Preserve Area
Existing Vernal Pool Area
Vernal Pool Restoration Area (San Diego Fairy Shrimp Mitigation Area)
Extended Weed Control Area (Five Year Maintenance and Monitoring Period Only)
Proposed Restoration Vernal Pools
Preserved Vernal Pools
Features
Features Containing San Diego Fairy Shrimp

0 Feet 500

FIGURE 4b

Vernal Pool Preserve - No Annexation Scenario

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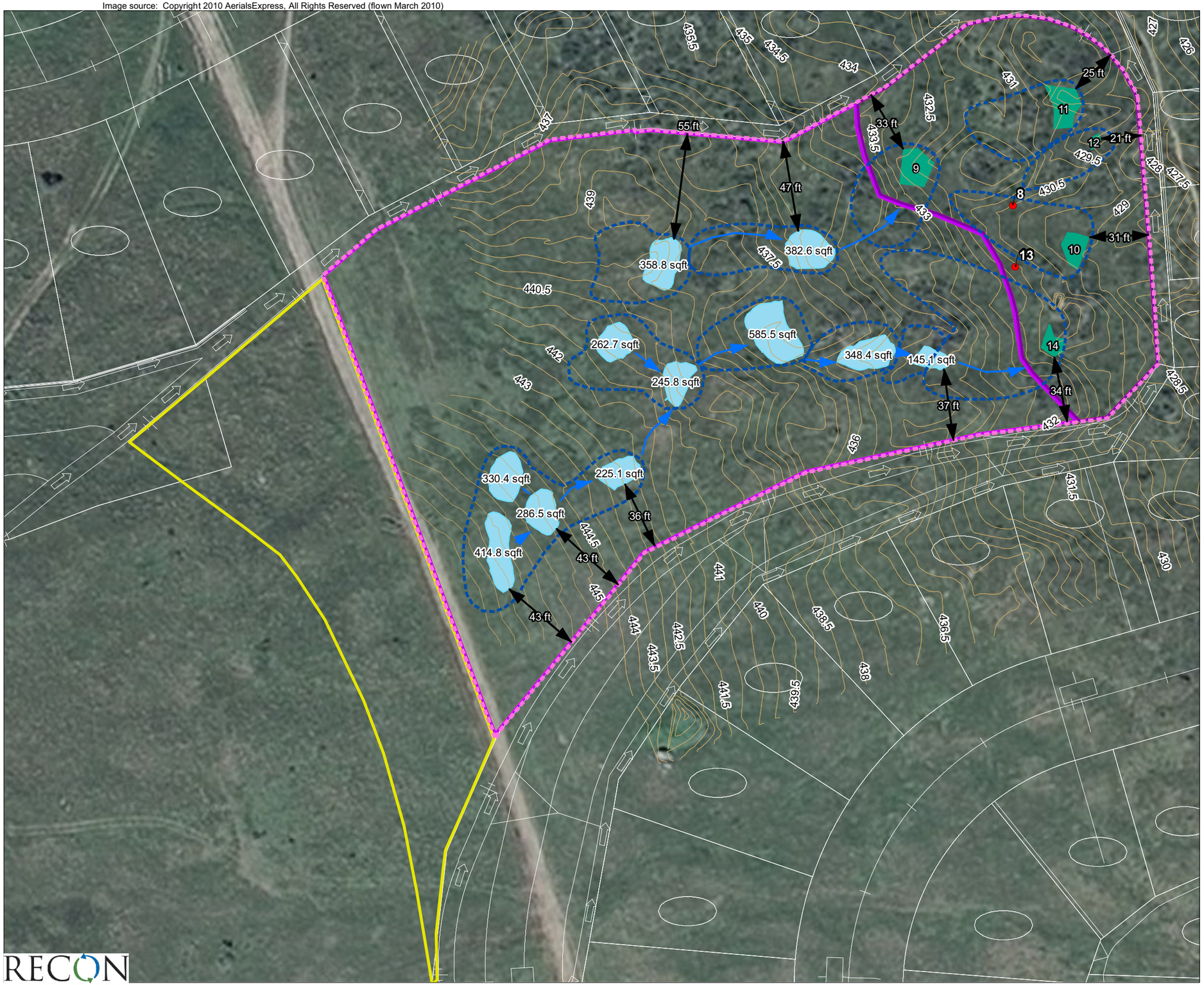

Vernal Pool Preserve Area
Existing Vernal Pool Area
Vernal Pool Restoration Area
Extended Weed Control Area (Five Year Maintenance and Monitoring Period Only)
Proposed Restoration Vernal Pools
Preserved Vernal Pools
Features
Vernal Pool Watershed Area
6" Contours
Flowlines

0 Feet 50

RECON

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FIGURE 5

Vernal Pool Preserve Detail

Both the Annexation Scenario and No Annexation Scenario designs provide avoidance measures to ensure that the existing hydrology (rain water runoff and subsurface flows) is maintained during grading, construction, and implementation of these scenarios (NRC 2012). These measures include: (1) avoidance of the vernal pools watersheds, (2) maintaining buffers between the project footprint and preserved and restored vernal pools, (3) drainage features to direct runoff away from the Preserve, and (4) a solid wall to deflect irrigation spray from lots located above the Preserve. A 21- to 48-foot buffer would be maintained at the preserved vernal pools and a 40- to 65-foot buffer would be maintained at the proposed restoration vernal pools (see Figure 5). The upland habitat enhancement and maintenance program around the preserved vernal pools is intended to protect against indirect impacts to the pools, as well.

3.0 Ownership

The land covered by this VPMP includes the 1.92-acre Preserve. This area would be owned and managed in accordance with this VPMP by Pardee, its successor in interest, or by the development's homeowners' association (HOA). The responsibilities of ownership are set forth throughout this VPMP. Should dedication of the land covered by this VPMP to the City of San Diego be proposed in the future, it would be done in accordance with the requirements of the MSCP.

4.0 Long-term Maintenance Requirements

4.1 Planting

The plant palette for the proposed slopes adjacent to the preserved vernal pools would include only native, non-invasive, low-fuel plant species (NRC 2012). Adjacent to the Preserve, landscaping and irrigation would be installed when grading is completed. Irrigation would be used, as needed, to ensure that plants become established. The irrigation system would be installed in a manner to ensure that the vernal pool features themselves would not receive any runoff water.

4.2 Brush Management

Some portions of the watershed for the vernal pools overlap with City of San Diego mandated Brush Management Areas. For locations where the vernal pool watershed falls within a City fuel management zone, the hydrological integrity of the watershed shall

be preserved and vegetation fuel loads shall be reduced to levels that are acceptable to the City of San Diego. Fuel would be reduced by thinning of native shrubs within coastal sage scrub areas, replanting these areas with low fuel native species (such as native grasses and native cactus) and, where necessary, maintaining the percent cover of plant species to below 50 absolute cover (i.e., 50 percent absolute cover of bare ground). The effects of vegetation management within these areas would be considered impact/mitigation neutral and would not affect the overall balance of MHPA mitigation acres. These maintenance details would be recognized on the grading plans for the site with specific reference to Zone 2 Brush Management Areas within the MHPA in the vicinity of the Preserve.

4.3 Weed Control

Weeding and other maintenance requirements would be done in accordance with the landscape plan and City of San Diego requirements. Weeding within the Preserve would be performed as recommended by the project biologist. All weeding shall be done by hand in the preserved and restored vernal pools. No herbicide use would be permitted within the vernal pools. Removal of non-native species in native grassland upland habitat would be accomplished by hand-held weed whips or herbicide. Prosecutor® and Roundup® (glyphosate) herbicide would be used with appropriate buffers to the vernal pools and never prior to a rain event. When herbicide would be used, there must be little to no wind present, as overspray may potentially harm native plants. Prosecutor® and Roundup® are approved for use in natural areas by the USFWS and CDFG, and must be applied by a licensed applicator.

Maintenance personnel must be trained to distinguish weed species from desirable native vegetation. Examples of weeds to be controlled include, but are not limited to, bent grass (*Agrostis* sp.), rabbit's foot grass (*Polypogon monspeliensis*), filaree (*Erodium* sp.), and Italian ryegrass (*Lolium multiflorum*). Of these, bent grass, filaree and Italian ryegrass are considered to be significant competitors to native vernal pool species. Control would concentrate on these species. Other non-native grass species, such as brome grass (*Bromus* sp.) and wild oats (*Avena* sp.), would be controlled to the extent feasible.

Weeding would be done twice a year, generally during the late winter and spring, to eliminate as many weeds as possible before seed is set. In order to protect the vernal pool resources over the long term, weed cover should not exceed 20 percent of the Preserve.

4.4 Barriers/Fencing

The project design includes a solid block wall surrounding the lots above the Preserve to prevent irrigation spray from falling on the preserved vernal pools (NRC 2012). Fencing would be maintained in good condition by the Owner. Any replacement or maintenance would be done in such a manner that the vernal pools or their watershed would not be disturbed. If necessary, the Preserve would be permanently fenced, at strategic locations, to prevent unauthorized entry and to minimize vandalism. Protection of the restoration site from human disturbance is essential for long-term sustainability of the restored and preserved vernal pools. Of particular importance is protection of the restoration site from pedestrians and off-road vehicles. Any permanent fencing would be installed in consultation with the project owner and the City of San Diego. Fencing would be designed to ensure that animal movement would still be possible.

4.5 Lighting

No lighting would be installed within the Preserve. Lighting on adjacent lots would be shielded and directed away from the Preserve.

4.6 Drainage

Grading of areas adjacent to the Preserve would be done in a manner to ensure that no runoff from the development enters the pools. According to NRC (2012), grading adjacent to the preserved vernal pools would be conducted such that most project runoff would drain away from the vernal pools and their associated watersheds. A portion of the grading along the perimeter of the preserved vernal pools would drain toward the Preserve (NRC 2012); however, the project design incorporates drainage swales at the base of these manufactured slopes that would catch any runoff from areas adjacent to the Preserve and direct the runoff away from the vernal pools and into the development area (NRC 2012). These adjacent areas would be landscaped with native, non-invasive species compatible with the vernal pool habitat. Each vernal pool and its watershed would be mapped and staked to ensure they are avoided during construction. The drainage swales should be checked and cleaned prior to the start of the rainy season (by October 15) and again during the winter (early January) to make sure no problems have arisen.

4.7 Signage/Public Information and Education

Pardee would prepare and hand out information to homebuyers describing the importance of the vernal pools and explaining how they should not be disturbed. This

brochure would direct who at Pardee should be contacted with questions or reports of disturbance during their time of management, and would note that the HOA should be notified of such once the HOA assumes ownership. The brochure would also include information for those whose lots are adjacent to the Preserve. Such information would direct homeowners to avoid non-native plants adjacent to the Preserve, avoid excessive irrigation that extends outside of their lots, and to shield lighting and direct it into their yards. These three requirements would also be included in the Covenant Condition Restrictions (CC&Rs) of lots adjacent to the Preserve.

4.8 Trash Removal

Trash would be removed from the area covered by this VPMP as needed. Care would be taken not to trample any plants or alter the microtopography of each feature.

5.0 Funding

Funding would be provided in perpetuity to pay for the required management and monitoring. Funding may consist of an endowment, Landscape and Lighting Maintenance District or other mechanism acceptable to the City of San Diego, U.S. Fish and Wildlife Service (USFWS) and U.S. Army Corps of Engineers (USACE). The amount of funding would be determined by a company with experience in the long-term management and monitoring of vernal pool preserves.

6.0 Prohibitions

The following activities are prohibited within the Preserve:

a) Unseasonal watering, use of herbicides, rodenticides, pesticides, incompatible fire protection activities and any and all other uses which may adversely effect conservation of watersheds;

b) Use of off-road vehicles;

c) Grazing or surface entry for exploration or extraction of minerals;

d) Erecting of any building, billboard, or sign (except informational signs associated with the Preserve);

e) Depositing of soil, trash, ashes, garbage, waste, bio-solids, or any other material; soil deposition in association with an approved restoration program is allowed;

f) Excavating, dredging or removing of loam, gravel, soil, rock, sand or other material; excavation or moving of soil, gravel, loam, rock, sand or other material in association with an approved restoration program is allowed.

g) Otherwise altering the general topography of the conserved vernal pool area, including the building of roads; and

h) Removing, destroying, or cutting of trees, shrubs or other vegetation other than the weeding or brush management activities discussed in Section 4.2 above. Alterations in association with an approved restoration program are allowed.

7.0 Corrective Measures for Unforeseen Circumstances

Corrective measures would only be needed if accidental damage occurs during construction, or due to vandalism. Examples of accidental events include grading outside of the limits shown on plans and incorrect placement of drainage facilities. These would be avoided through the use of biological monitors during grading. Incorrect location of drainage facilities would be fixed through the construction of proper facilities. Should grading occur outside of posted limits, the biological monitor would immediately notify Pardee or the party responsible for the grading. The biological monitor would identify and map the extent of the damage done and recommend remedial measures which would be implemented at the cost of the party causing the damage. The exact remedial measures that would be necessary cannot be foreseen. They would depend on the extent and type of damage, and the resource that was affected.

Vandalism that damages the ponding integrity of the depressions must be repaired by the party that owns the land at the time the damage occurs. The exact nature of the repair cannot be foreseen and, again, would depend on the type and extent of the damage, and the resource that was affected.

8.0 Monitoring

Monitoring requirements under the VPMP would occur during both construction and operation for the life of the project as noted below in Table 1.

TABLE 1
VPMP MONITORING PROGRAM

Reporting Item	Duration	Reporting Time	Reporting Method	Follow-Up Task
Vernal Pool Perimeter Planting	Per the City's Landscape Regulations	After installation and during establishment per City's Landscape Regulations	Summarize in report with photographs.	Recommended replanting, reseeding, weeding, and supplemental watering.
Weeding	Twice yearly in winter and spring, prior to seed set for life of project	After installation of fencing and completion of project grading	Summarize in report with photographs.	Recommended focused weeding
Vernal Pool Watersheds	Life of Project	Prior to and after construction installation. Prior to and after rainy season or major storm event.	Summarize in report with photographs.	Recommend corrective measure to address drainage into pools.
Barrier/Fencing	Life of Project	Prior to and after construction installation. Prior to building occupancy and yearly thereafter.	Summarize in report with photographs.	Immediate fence/barrier replacement as needed.
Vandalism	Life of Project	After construction and yearly update of on-site conditions near pools.	Monitoring or letter-report with photographs.	Corrective measures (e.g., additional fencing) to be determined in coordination with the City.

Monitoring during construction would be performed by a qualified biological monitor obtained by the owner of the Preserve, as set forth in the projects' MMRP. After construction, and prior to the establishment of the management entity, monitoring would be the responsibility of Pardee or the Developer/homebuilder who is Pardee's successor in interest. The management entity would assume monitoring responsibilities when they begin operation. A qualified biological monitor is a biologist/habitat management specialist with an appropriate degree who has a documented history of work on habitat maintenance projects, preferably in San Diego County.

The biological monitor would write an annual report addressing the various required monitoring activities noted above and required in Section 9.0 of this VPMP. This report would be provided to the owner of the VPMP lots and the City of San Diego. The City may forward this report to other agencies and interested parties.

9.0 Responsible Parties

Two different parties would be responsible for the maintenance of the vernal pools in their existing condition through implementation of this VPMP. These include Pardee Homes (or their successors in interest) and the management entity. The City of San

Diego is responsible for the review and approval of this VPMP and for reviewing the annual monitoring reports. The City is responsible for managing the remainder of the Multiple Habitat Preserve Area (MHPA) lands outside of the Preserve when they are conveyed to the City.

9.1 Pardee Homes

Pardee Homes would be responsible for construction avoidance, installation of fencing, and maintenance activities until the property is dedicated to the City of San Diego or turned over to the management entity. Construction avoidance would follow a standard protocol. A biologist would locate each vernal pool and associated watershed. A snow fence that follows the Preserve limits would be placed around the Preserve, with construction flagging around each feature. A silt fence would be installed where, in the judgment of the biologist, the possibility of runoff into the feature exists. The biologist would monitor grading to ensure that inadvertent damage does not occur. The protective flagging would remain in place until the block wall is installed.

9.2 Management Entity

A management entity would be responsible for the management and monitoring tasks described herein. This entity must be acceptable to the City, USFWS, USACE, and California Department of Fish and Game. It would be established prior to the City granting a building permit and would assume operation prior to or simultaneously with the Homeowner's Association.

9.3 City of San Diego

The City of San Diego would be responsible for review and approval of the final VPMP and any future proposed restoration/enhancement of the Preserve.

10.0 References Cited

Glenn Lukos Associates (GLA)

2012 Letter Report Summarizing Preliminary Findings of U.S. Army Corps of Engineers, California Department of Fish and Game, and City of San Diego Jurisdiction for the Castlerock Project, City of San Diego, San Diego County, California.

Natural Resource Consultants (NRC)

2012 A Biological Resource Assessment of the Approximately 203.6-Acre Castlerock Site, Located in the City of San Diego, San Diego County, California.

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2012a San Diego Fairy Shrimp/Vernal Pool Restoration and Enhancement Plan for the Castlerock Project City of San Diego Project No. 10046. .

2012b Draft Environmental Impact Report for the Castlerock Project, EIR No. 10046.