

**WETLAND MITIGATION PLAN FOR THE MEADOWOOD PROJECT,  
COUNTY OF SAN DIEGO, CALIFORNIA**

**Meadowood Project  
(GPA04-002, SPA04-001, R04-004, VTM 5354RPL<sup>2</sup>, S04-005, S04-006,  
S04-007 and ER No. 04-02-004)**

**Prepared for the County of San Diego  
Department of Planning and Land Use  
5201 Ruffin Road, Suite B  
San Diego, CA 92123**

**Preparer:**

**RECON Environmental, Inc.  
1927 Fifth Avenue  
San Diego, CA 92101-2358  
(619) 308-9333  
RECON NUMBER 3706B**

**Project Proponent:**

**Pardee Homes  
10880 Wilshire Boulevard, Suite 1900  
Los Angeles, CA 92101-2358**

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## **1.0 DESCRIPTION OF THE DEVELOPMENT PROJECT/IMPACTS FOR WHICH COMPENSATORY MITIGATION IS REQUIRED**

This mitigation plan addresses the compensatory mitigation requirements for the impacts to jurisdictional waters, including wetlands, by the proposed Meadowood project. This conceptual mitigation plan provides the guidelines for the revegetation of native southern willow riparian forest, willow/mule fat scrub, and coastal sage scrub habitat. The plan would be used in the preparation and implementation of landscape plans designed in accordance with this plan to meet mitigation requirements of the project. This conceptual mitigation plan was prepared in accordance with County of San Diego guidelines (2007).

### **1.1 Responsible Parties**

The owner/project proponent at the time the Meadowood project is developed would be responsible for the implementation of this mitigation plan.

### **1.2 Location of the Development Project**

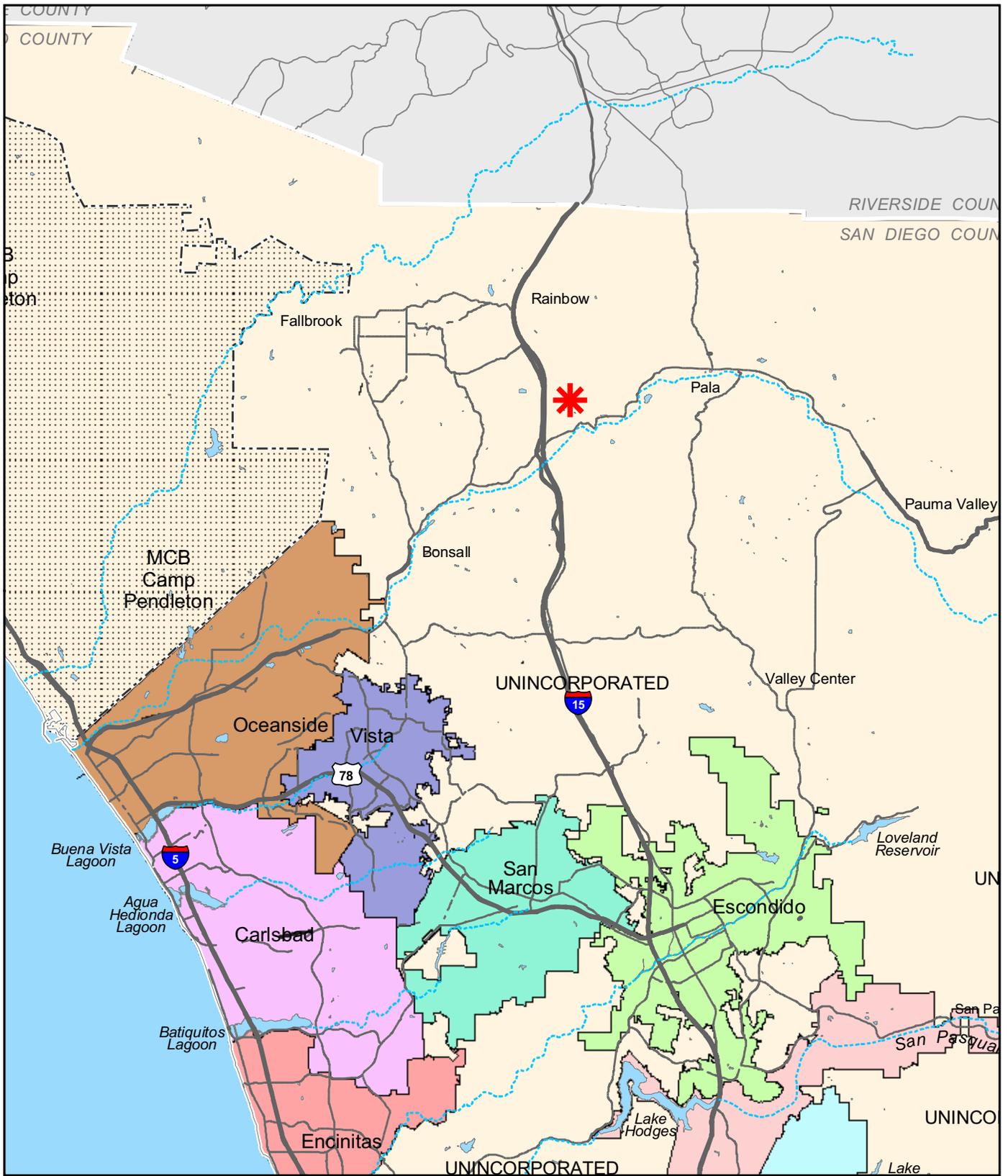
The Meadowood project is located in the county of San Diego, east of Interstate 15 (I-15) and north of State Route 76 (SR-76) and the San Luis Rey River (Figures 1 and 2). The land to the north and east is undeveloped and consists of citrus and avocado orchards and natural open space (Figure 3). South of SR-76 and the river is the Lake Rancho Viejo residential project. West of I-15 and south of the river are the Rancho Monserate Mobile Home Park and the Rainbow Municipal Water District offices and work yard. There is a gas station, a restaurant, and a park-and-ride facility in the northwest quadrant of the I-15/SR-76 intersection.

### **1.3 Summary of Overall Development Project with Proposed Mitigation**

The proposed project seeks a General Plan Amendment, Specific Plan, Rezone, Vesting Tentative Map, three Site Plans and a Major Use Permit for the Wastewater Treatment Plant for the development of a residential community with a mix of single-family detached, multi-family detached and multi-family attached units, an elementary school site, neighborhood park, pocket parks, multi-use trails, and supporting infrastructure on the 389.5-acre site. Open space is proposed to preserve some of the existing citrus and avocado groves along with sensitive biological habitat.

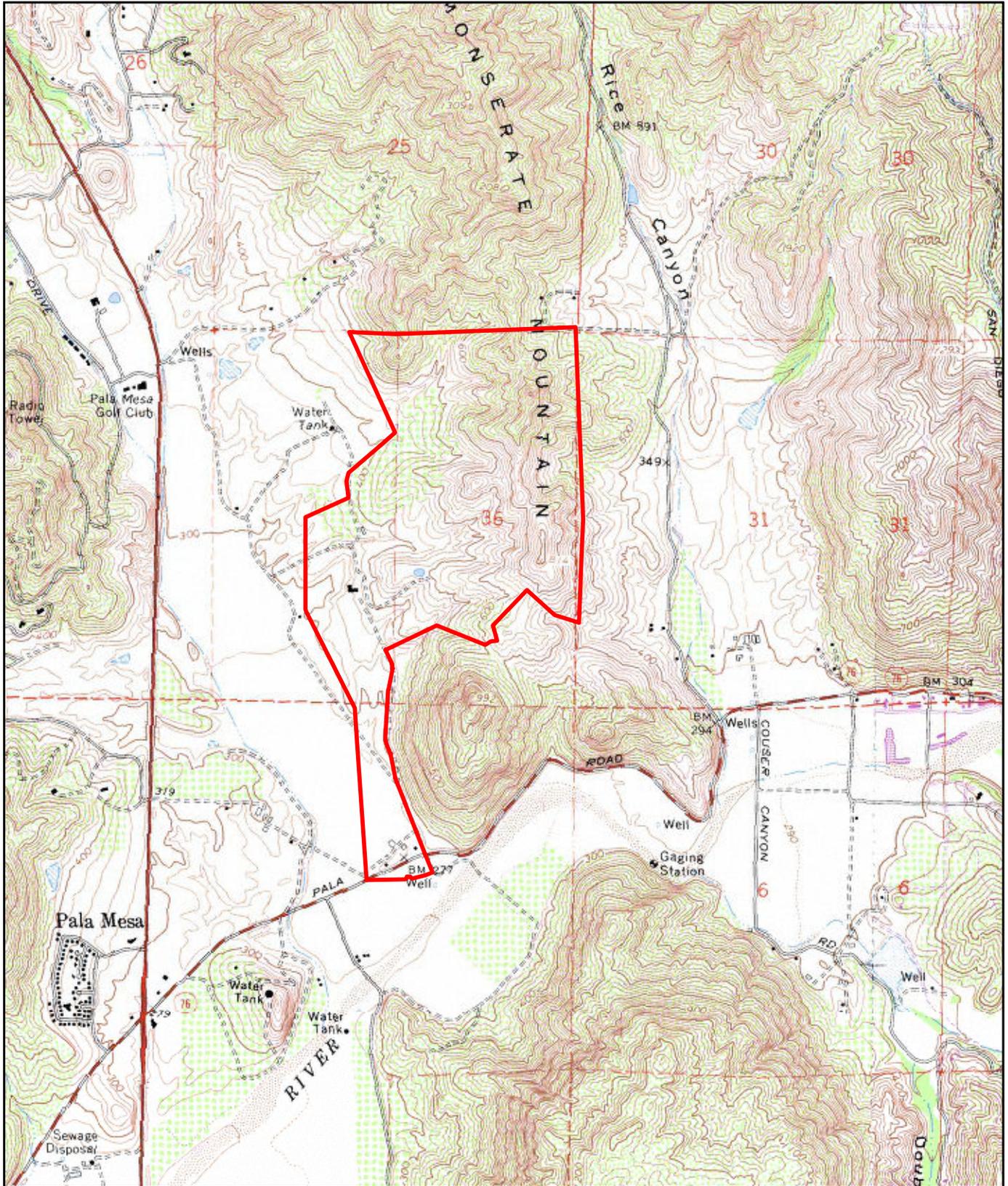
The 389.5-acre project site is characterized by diverse topography and a variety of vegetation types and habitats. It occupies the eastern portion of a well-defined valley surrounded by steep hills. The dominant feature is Monserate Mountain, the southern ridgeline of which occupies the eastern portion of the site. The topography of the project site ranges from gently sloping, sparsely vegetated terrain approximately 260 feet above mean sea level (MSL) at the southwestern end of the site, nearest to the San Luis Rey River, to the steeply sloping ridgeline along the northeastern portion of the site, which is the southern flank of Monserate Mountain with an elevation of approximately 840 feet above MSL. The eastern boundary descends into Rice Canyon, most of which is farther to the east. The site generally drains to the south and west and eventually into the San Luis Rey River.

Land uses on-site include agricultural activities, consisting mostly of citrus and avocado orchards and taking up most of the central and southern portions, or about 54 percent of



**\*** Project location

FIGURE 1  
Regional Location



 Project Boundary

FIGURE 2  
Project Location on U.S.G.S.



 Project Boundary

FIGURE 3

Project Location on an Aerial Photograph

the site. There are 13 homes, sheds, and agricultural buildings scattered throughout the site, none of which is historic.

### **1.3.1 Vegetation**

The rugged and undeveloped terrain in the northern and eastern portions supports disturbed and undisturbed southern mixed chaparral, coastal sage scrub vegetation, disturbed coastal sage scrub, and coast live oak woodland. Wetland areas of the site include mixed willow–mule fat riparian scrub at the western boundary and two isolated freshwater ponds supporting limited cattail marsh vegetation. These ponds are artificial and are used to irrigate the crops. In addition, the site includes non-native annual grassland and a network of graded dirt roads and other disturbed or developed areas.

Eleven plant communities, or habitats, were identified on the project site as shown on Figure 4: agricultural (209.9 acres); coastal sage scrub (56.5 acres); disturbed coastal sage scrub (30.6 acres); southern mixed chaparral (19.6 acres); coast live oak woodland (1.7 acres); willow/mule fat scrub (<0.1 acre); open water/pond (0.7 acre); non-native grassland (31.9 acres) non-native trees (8.3 acres); pastureland (1.5 acres); and developed or disturbed areas (28.7 acres).

### **1.3.2 Sensitive Species**

No special status plant species were detected on the project site. Several special status plant species have been recorded within the project area; however, none of these species were detected on the project site.

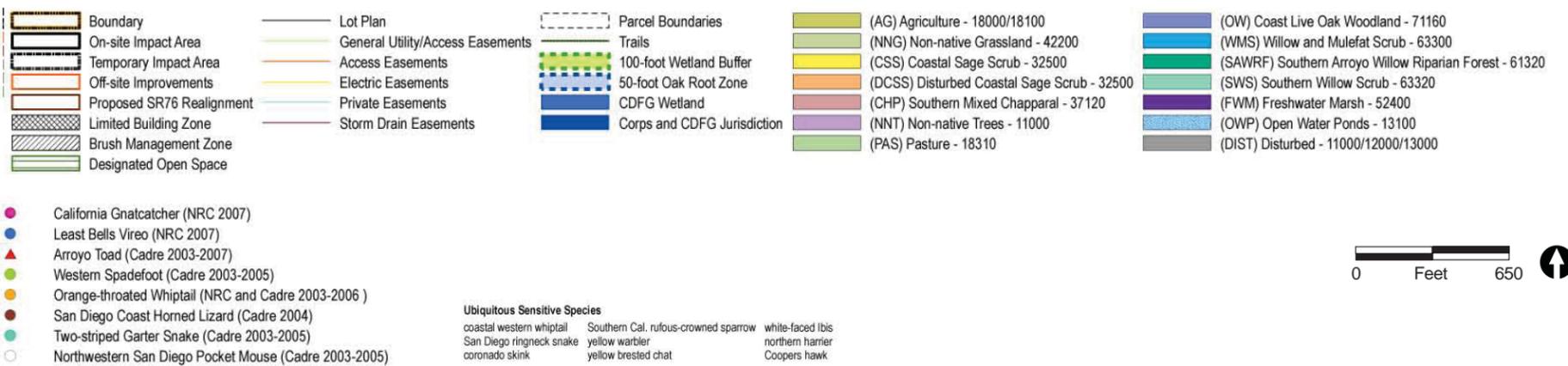
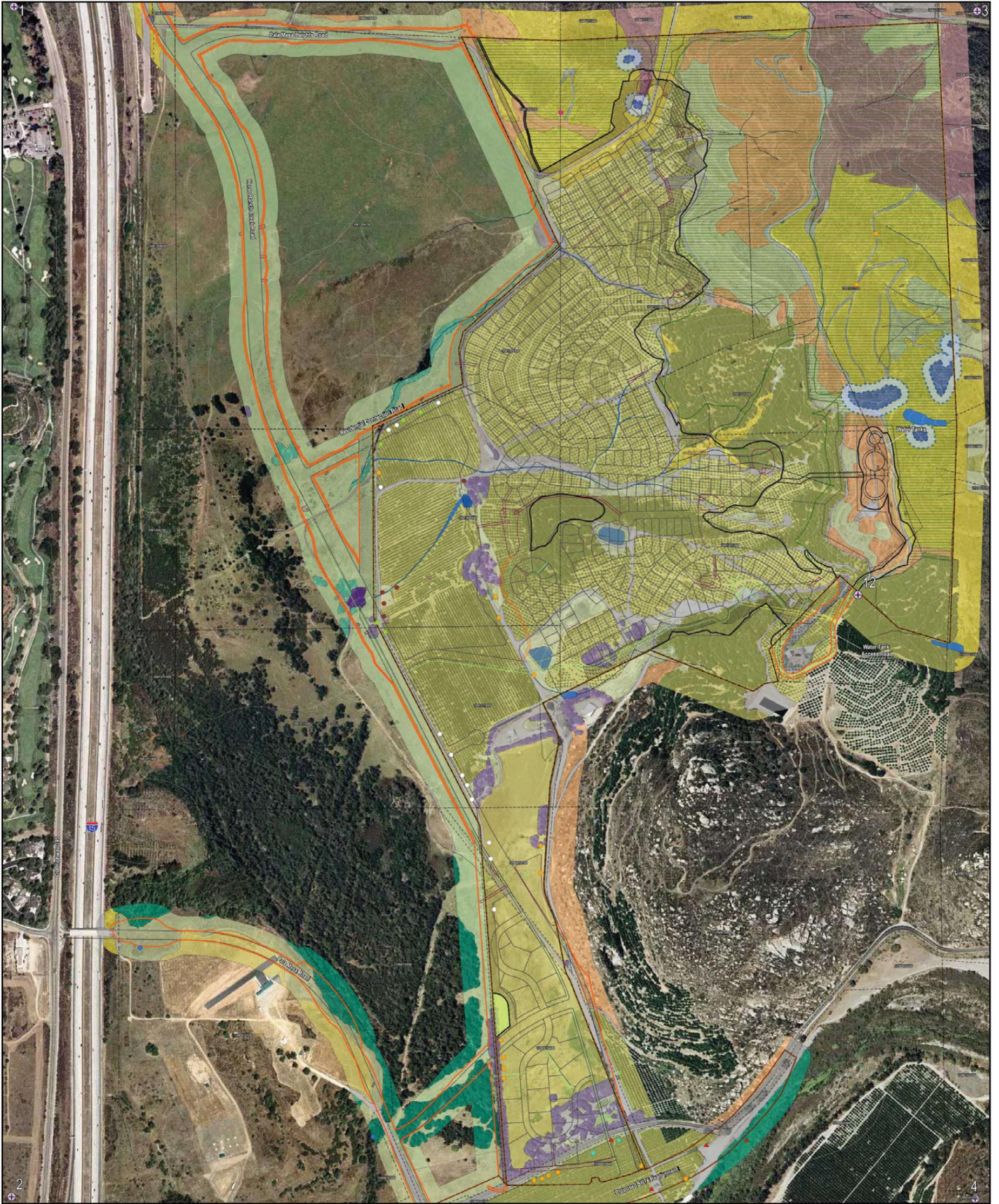
Two federally listed wildlife species, arroyo toad (*Bufo microscaphus californicus*) and California gnatcatcher (*Polioptila californica*), have been recorded within the boundaries of the Meadowood site. Four species of wildlife listed by either the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Game (CDFG) as threatened or endangered are known to occur in the immediate vicinity of the project site: arroyo toad, coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher.

### **1.3.3 Project Impacts**

Impacts to jurisdictional waters (e.g., wetlands, vegetated riparian, non-wetland waters, streambeds, and isolated waters) from on-site development and off-site improvements are summarized by type and jurisdiction in Figure 4 and Table 1. This report addresses the creation of riparian habitat as mitigation for these proposed impacts to jurisdictional waters.

## **2.0 GOALS OF THE COMPENSATORY MITIGATION PROJECT**

The goals of the mitigation project are to create and establish native southern willow riparian habitat at the mitigation site chosen. This habitat would ultimately satisfy the mitigation requirements of the project for impacts to jurisdictional waters, including wetlands.



**FIGURE 4**  
Biological Resources & Jurisdictional Waters

**TABLE 1  
SUMMARY OF IMPACTS TO JURISDICTIONAL WATERS**

Location/ Jurisdiction	Permanent Impacts to Wetlands or Vegetated Riparian		Permanent Impacts to Non-wetland Waters		Permanent Impacts to Isolated Waters		Temporary Impacts to Wetlands or Vegetated Riparian		Temporary Impacts to Non-wetland Waters		Total Impacts to Jurisdictional Waters
	Riparian	0.14 ac	0.69 ac	0.69 ac	0.59 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	
On-site											
ACOE	0.14 ac	0.69 ac	0.69 ac	0.59 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.83 ac
RWQCB	0.14 ac	0.69 ac	0.69 ac	0.59 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.89 ac
CDFG	0.34 ac	0.59 ac	0.59 ac	0.59 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.93 ac
County	0.14 ac	0.69 ac	0.69 ac	0.59 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.06 ac	0.14 ac
Off-site											
ACOE	2.29 ac	>0.01 ac	>0.01 ac	>0.01 ac	2.04 ac	2.04 ac	2.04 ac	2.04 ac	<0.01 ac	<0.01 ac	4.35 ac
CDFG	2.29 ac	>0.01 ac	>0.01 ac	>0.01 ac	2.04 ac	2.04 ac	2.04 ac	2.04 ac	<0.01 ac	<0.01 ac	4.35 ac
County	2.29 ac	>0.01 ac	>0.01 ac	>0.01 ac	2.04 ac	2.04 ac	2.04 ac	2.04 ac	<0.01 ac	<0.01 ac	4.33 ac

## **2.1 Responsibilities**

Pardee Homes, as the project applicant, would be responsible for funding the implementation of the mitigation plan. They would be required to hire a project team of specialists, including a landscape architect to draw up the mitigation construction documents and maps, a landscape contractor to implement the plan, a biologist to monitor the mitigation effort, and a landscape maintenance contractor.

The County of San Diego would be responsible for reviewing the annual reports for the mitigation site. They would evaluate the success of the mitigation effort against the goals and performance criteria and help determine what remedial or contingency measures are appropriate, if needed.

### **2.1.1 *Landscape Architect***

The landscape architect would be responsible for preparing the construction plans required to implement the mitigation. The firm chosen must have at least three years' experience in the design of native wetland habitat mitigation and should provide examples of past plans for reference. They would be responsible for construction plans that would include site preparation, installation of an irrigation system, and installation of the plant materials, along with all associated notes for these tasks.

### **2.1.2 *Landscape Contractor***

The landscape contractor would be responsible for the implementation of the landscape architects construction plans. The firm chosen must have at least five years' experience in the implementation of native habitat mitigation plans and should provide examples of past mitigation plan efforts for reference. The landscape contractor would conduct all the site preparation activities, install the irrigation system, order and install the native plant materials, and maintain the site during the 120-day plant establishment period. They would supply and plant any replacement materials needed at the end of the 120-day plant establishment period to establish the base line for the five-year maintenance and monitoring period.

### **2.1.3 *Biological Monitor***

The biological monitor must be a qualified biologist that has a minimum of five years' experience related to wetland mitigation efforts. He or she must be familiar with the ecology of the native plants being installed and a general knowledge of the biology of these species. The biologist must have experience in the monitoring of native habitat revegetation, including qualitative and quantitative assessments of the sites and writing annual monitoring reports.

The biologist would be responsible for ensuring that the mitigation plan is implemented as approved. He or she would monitor all stages of the implementation of the plan from site preparation to plant installation and conduct the qualitative and quantitative monitoring required during the five-year maintenance and monitoring period. The biologist would also be responsible for coordination with the landscape maintenance contractor regarding the on-site maintenance issues, including maintenance of the irrigation system, control of non-native species, replacement plantings, and general site maintenance (e.g., fixing acts of vandalism, removing trash, etc.).

#### **2.1.4 Maintenance Contractor**

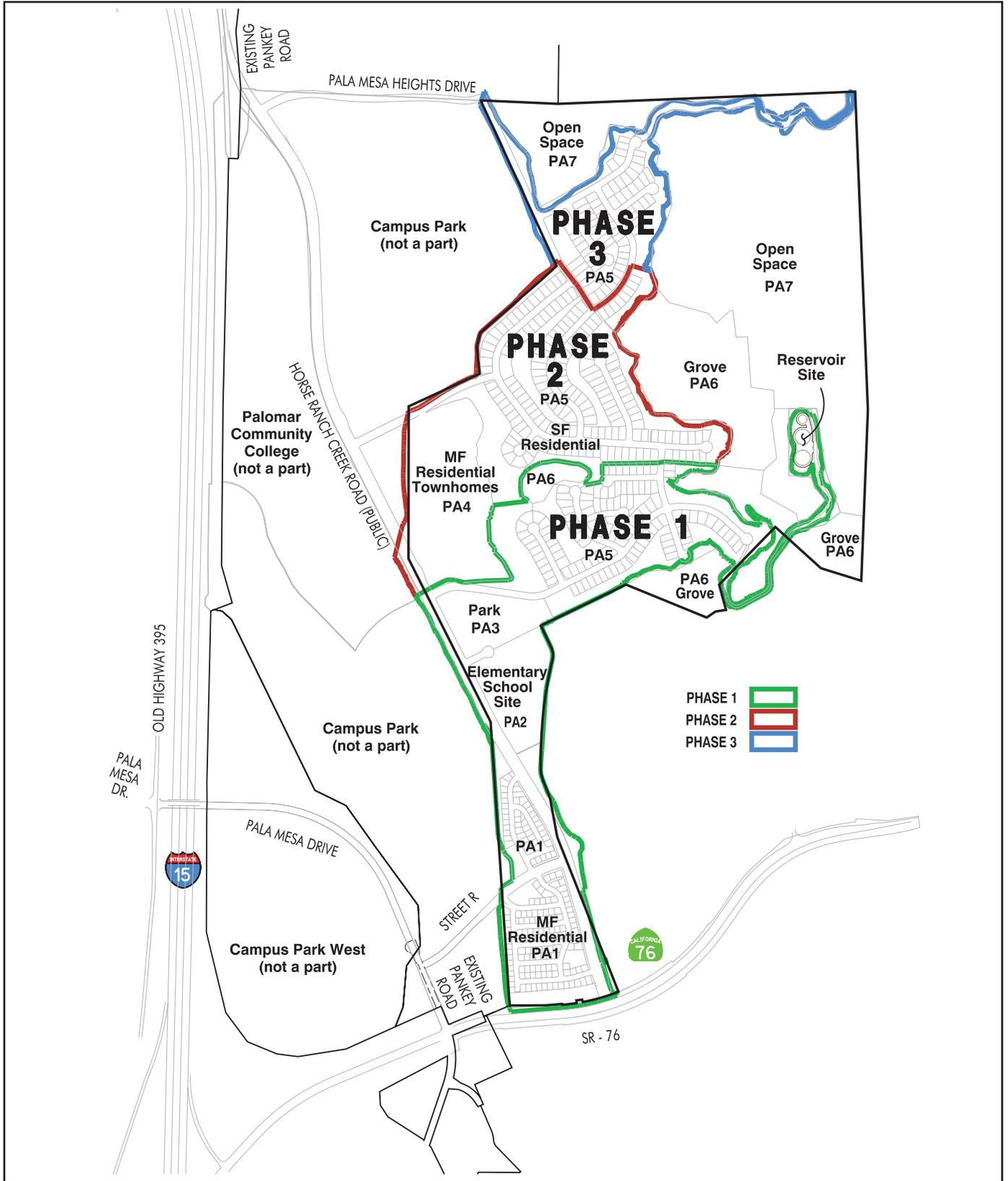
The maintenance contractor would be responsible to the maintenance activities associated with the five-year maintenance and monitoring period. The firm chosen must have a minimum of five years' experience in the maintenance of native habitat revegetation. Its duties would include the maintenance of the irrigation system, the application of supplemental water, the control of the non-native plant species, the repair of acts of vandalism, the removal of trash, and the installation of replacement plants, all under the direction of the project owner and the biological monitor.

#### **2.2 Type and Area of Habitat to be Established, Revegetated, Restored, Enhanced, and/or Preserved**

The type of habitat to be established at the mitigation site is southern willow riparian forest (Holland Code 61300). Resource agencies to be involved in the establishment of this habitat type as mitigation would include the County of San Diego, U.S. Army Corps of Engineers (ACOE), CDFG, USFWS, and the California Regional Water Quality Control Board.

Permanent impacts to jurisdictional waters, as shown in Figure 4, would require 9.66 acres of habitat to cover the mitigation requirements (Table 2). Impacts associated with loss of least Bell's vireo/southwestern willow flycatcher habitat would require 11.1 acres for mitigation. Impacts to riparian/wetland habitat (mixed willow/mule fat scrub, southern willow scrub, southern arroyo willow riparian forest, and freshwater marsh would require 12.3 acres for mitigation. Thus, this Wetland Management Plan is intended to cover the maximum requirement of 12.3 acres. Southern willow riparian woodland species would be installed over this acreage at the mitigation site chosen. Temporary impacts would require that the 2.2 acres of jurisdictional waters affected be restored in place with southern willow riparian species. This mitigation plan shows the total mitigation requirement required given the proposed level of impacts; however, certain project impacts to jurisdictional waters would be phased. Therefore, mitigation requirements would be determined based on the timing of the impacts. The Meadowood project would be constructed in three phases as shown on Figure 5. Associated permanent impacts to jurisdictional waters for each phase would be as follows:

- Phase 1: 0.01 acres (ACOE), 0.11 acres (CDFG)
- Phase 2: 0.69 acres (ACOE), 0.68 acres (CDFG)
- Phase 3: 0.13 acres (ACOE), 0.14 (CDFG)



**TABLE 2  
SUMMARY OF OVERALL MITIGATION REQUIREMENTS**

Type/Jurisdiction	Total Impacts (acres)	Mitigation Ratio	Mitigation Acreage Required
Permanent			
ACOE	3.12	3:1	9.36
CDFG	3.22	3:1	9.66
County	2.29	3:1	6.87
Vireo/flycatcher habitat	3.37	3:1	11.1
Temporary			
ACOE	<2.05	1:1	<2.05
CDFG	<2.05	1:1	<2.05
County	2.04	1:1	2.04

All of the temporary impacts would be associated with off-site improvements to Pala Mesa Drive/Street R. Mitigation would take place at the time of the road construction.

**2.3 Functions and Values**

The functions and values of the habitat type to be established on the mitigation site would be evaluated using habitat characteristics, hydrologic regime, topographic complexity, and biogeochemical processes. These functions and values are discussed in more detail later in this report.

**2.4 Time Lapse**

The time lapse would be calculated once the schedule for the project impacts and implementation of the mitigation effort are known.

**2.5 Cost**

The cost of the implementation of the mitigation plan would be calculated once the location of the mitigation site is known. Factors to be considered in preparing the cost would include purchase of the site, preparation of grading and landscape plans, site preparation, plant materials, plant installation, irrigation system, and five years of maintenance and monitoring.

**3.0 DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITE**

Currently, a specific mitigation site for the Meadowood project has not been identified. However, there are multiple ownerships within the San Luis Rey watershed that could fulfill the mitigation obligation for the project. Evaluation of these parcels and selection of an appropriate site would be required as a condition of project approval.

### **3.1 Site Selection**

A wetland mitigation site within the San Luis Rey watershed, which fulfills the mitigation requirements for the on- and off-site wetland impacts, would be selected as a condition of project approval.

### **3.2 Location and Size of Compensatory Mitigation Site**

The size of the mitigation site would be approximately 12.3 acres. The location of the site would most likely be within the San Luis Rey watershed. A specific mitigation site would be selected as a condition of project approval.

### **3.3 Functions and Values**

The functions and values of the mitigation site would be revealed once a site has been chosen.

### **3.4 Jurisdictional Delineation**

If a jurisdictional delineation is needed, it would be conducted at the proposed mitigation site upon selection.

### **3.5 Present and Proposed Uses**

The present and proposed uses of the mitigation site would be detailed once a specific site has been chosen.

### **3.6 Reference Sites**

The reference sites would be chosen and evaluated once a specific mitigation site is selected.

## **4.0 IMPLEMENTATION PLAN FOR THE COMPENSATORY MITIGATION SITE**

### **4.1 Rationale for Expecting Implementation Success**

The success of the mitigation plan is largely dependent on the proper site selection, site preparation, and site maintenance. The use of a qualified wetland habitat restoration firm that meets the criteria set forth in Section 2.1.3 would ensure that a proper mitigation site is selected, planted correctly, and is maintained and monitored.

### **4.2 Financial Assurances**

A revegetation agreement shall be signed and notarized by the property owner following approval of this Wetland Mitigation Plan and accompanied by the required security as agreed upon by the County of San Diego.

### **4.3 Schedule**

A detailed schedule would be prepared once the timing of the mitigation requirement is determined. Typically, implementation of the wetland restoration program would occur concurrently with the start of the project construction.

#### 4.4 Site Preparation

Details of the site preparation would be addressed once a mitigation site is selected.

#### 4.5 Planting Plan

Willow and mule fat cuttings will be taken from trees within a 10-mile radius of the mitigation site for use in the creation of the southern willow scrub habitat. These cuttings will be rooted in one-gallon containers for planting at the wetland creation site. Blue elderberry will be grown from locally collected seeds. Cuttings and container plant densities are presented in Table 3. Installation of native plants will begin after site preparation of the wetland habitat restoration area is complete. Plant installation will be limited to the months of October 15 through June 1.

**TABLE 3  
RIPARIAN SCRUB PLANTING DENSITIES**

Species	Number per Acre	Size
Mule fat <i>Baccharis salicifolia</i>	200	one-gallon
Arroyo willow <i>Salix lasiolepis</i>	100	one-gallon
Black willow <i>Salix gooddingii</i>	100	one-gallon
Red willow <i>Salix laevigata</i>	100	one-gallon
Western sycamore <i>Platanus racemosa</i>	75	one-gallon
Blue elderberry <i>Sambucus mexicana</i>	50	one-gallon
California rose <i>Rosa californica</i>	50	one-gallon
Fremont cottonwood <i>Populus fremontii</i>	25	one-gallon

Seed collection will begin at least six months prior to restoration implementation. Following installation of the container plants, the willow scrub mitigation area will be seeded. Two different seed mixes will be prepared for the project site. One seed mix will be used for low-lying areas that will eventually become riparian understory and a second upland mix will be used for berm slopes and transitional areas. To prevent disturbance of transplants, the riparian understory seed mix will be applied by hand. The upland seed mix may be either hand seeded or hydroseeded as directed by the project biologist. Target species and application rates for both seed mixes are included in Table 4. All cuttings and seeds collected will be from plants in the same sub-watershed as the project.

**TABLE 4  
RIPARIAN AND TRANSITIONAL AREA SEED MIXES**

Species	Pounds/Acre	Suggested %Purity/%Germination
Riparian Seed Mix		
Arroyo willow <i>Salix lasiolepis</i>	2	N/A
Mugwort <i>Artemisia douglasiana</i>	1	10/50
Mule fat <i>Baccharis salicifolia</i>	3	2/20
Western ragweed <i>Ambrosia psilostachya</i>	2	85/25
Tarragon <i>Artemisia dracunculus</i>	1	10/50
Transitional Area and Slope Mix		
Blue elderberry <i>Sambucus mexicana</i>	2	95/20
California buckwheat <i>Eriogonum fasciculatum</i>	3	10/65
California sagebrush <i>Artemisia californica</i>	2	15/50
Purple needlegrass <i>Nassella pulchra</i>	3	70/60
Giant ryegrass <i>Leymus condensatus</i>	0.25	70/80

#### **4.6 Irrigation Plan**

It is anticipated that supplemental water would need to be applied to the revegetation site to help establish the native plant materials during the early portion of the five-year maintenance and monitoring period. Therefore, an above-ground, temporary irrigation system would be installed using overhead spray heads to distribute the water across the site. The application of water to the site would be determined and monitored by the biological monitor in coordination with the landscape maintenance contractor.

#### **5.0 MAINTENANCE DURING MONITORING**

Maintenance of the mitigation site would be required for a five-year period to ensure the successful establishment of the native plants installed.

#### **5.1 Maintenance Activities**

The primary maintenance activities would be control of non-native plant species and maintenance of the irrigation system. Other activities would include general site maintenance associated with repair of acts of vandalism and trash removal. Site maintenance will begin following the installation of all plant materials. Maintenance tasks are anticipated to continue for five years.

### **5.1.1 Weed Control**

Weed control will continue throughout the five-year monitoring period. Hand weeding or other weed control methods will be performed by maintenance workers familiar with and trained to distinguish weeds from native species. During the five-year maintenance period, weeding will be performed four times per year (or more as determined by the project biologist) to keep weeds from producing seeds and to control weed competition during the establishment period of native plants. Two to three of these visits to control weeds would be made in the spring and the rest would be done in the summer.

Ideally, weeds would be killed or removed before they set seeds. Appropriate weed control measures would be implemented under the direction of the project biologist.

### **5.1.2 Irrigation**

The irrigation system will be maintained throughout the five-year maintenance period so that supplemental water is available to the mitigation site if needed. The addition of supplemental water to the mitigation area would be initially discontinued after the second year to determine if “natural” hydrologic conditions are sufficient to support the mitigation habitat. The water would be applied at the discretion of the project biologist. The irrigation schedule will vary depending on weather patterns, but in general, would be used during the late spring and summer months.

### **5.1.3 Plant Maintenance**

One goal of the habitat mitigation is to establish native plant cover throughout the mitigation site. Variations in site conditions would result in a mosaic of vegetation growth that is similar to undisturbed habitats. Native plant materials would be maintained on the site to minimize the size and distribution of bare areas. Barren areas in the mitigation site where plant growth is expected shall be replanted under the direction of the biological monitor with appropriate native species to create the desired vegetation cover.

### **5.1.4 Vegetation Clearing and Trash Removal**

Pruning of any native vegetation or removal of dead wood and leaf litter shall not be allowed in the revegetation areas. Trash will be removed from the sites by hand on an as-needed basis for the duration of the five-year maintenance period. Trash consists of all man-made materials, equipment, or debris left within the restoration area that is not serving a function related to revegetation.

## **5.2 Schedule**

The general five-year maintenance schedule is presented in Table 5. This schedule could be modified by the biological monitor in order to address specific issues that may arise in any given year of the maintenance period.

**TABLE 5  
FIVE-YEAR MAINTENANCE SCHEDULE**

Tasks	Year 1	Year 2	Year 3	Year 4	Year 5
Weeding	4 times				
Trash removal	As needed				
Irrigation maintenance	Monthly	Monthly	Quarterly	Quarterly	Quarterly
Plant replacement	As needed				

## 6.0 MONITORING PLAN FOR COMPENSATORY MITIGATION SITE

The biological monitor would conduct regular site visits to evaluate the development of the mitigation habitat. Annual reports would be written that describe the results of the data collected during the particular year describing how the mitigation effort is progressing towards the success criteria established.

### 6.1 Performance Standards for Target Dates and Success Criteria

The mitigation areas will be monitored for at least five years following the completion of the installation of all plant materials. Each year of the monitoring period, the mitigation sites will be assessed using standard success criteria (Table 6). Standard success criteria are based on measurements of vegetation cover, species composition, and species diversity. Final goals are used to certify the acceptance of the mitigation or the need for contingency measures. Mitigation monitoring may extend beyond the initial five-year period until the sites have achieved the ultimate success criteria, or until ACOE, CDFG, and the County of San Diego determine that monitoring is no longer needed, or alternative mitigation solutions are adopted by the resource agencies.

The success of the wetland mitigation is determined using criteria based on the general site characteristics and on the functional condition of the mitigation areas. General site conditions such as wildlife use, diversity of native wetland plants, native plant cover, resilience, and presence of wetland indicators will be evaluated at each mitigation area.

**TABLE 6  
STANDARD SUCCESS CRITERIA**

Year	Native Vegetation Cover	Species Composition	Species Diversity*
1	---	95% native	---
2	50%	95% native	100% target species
3	75%	95% native	100% target species
4	80%	95% native	100% target species
5	90%	95% native	100% target species

\*Target species are those plant species installed as container stock per this plan.

### 6.2 Target Functions and Values

The functional-based mitigation success criteria are based on the functional evaluation accepted by ACOE (Stein 1999). Both interim and final goals are assessed according to hydrologic, biogeochemical, and biologic conditions of the mitigation areas. Interim goals would be used to assess progress and would provide information for recommendations for remedial actions and adaptive management strategies.

Functional conditions are assessed to determine the functional capacity of the specific wetland resource being created. The conditions evaluated include habitat characteristics, hydrologic regime, topographic complexity, and biogeochemical processes (Stein 1999). Each year the mitigation areas will be evaluated and scores assigned to each of the success criteria assessed. These values are then compared to the functional interim and final goals (Table 7).

**TABLE 7  
FUNCTIONAL SUCCESS CRITERIA**

Evaluation Criteria	Interim Target	Ultimate Target
Structural diversity	0.4	0.8
Spatial diversity	0.6	0.8
Exotic vegetation	0.8	1.0
Hydrologic regime	1.0	1.0
Floodprone area	0.8	1.0
Topographic complexity	0.5	0.8
Biogeochemistry	0.6	0.8

SOURCE: Stein 1999.

### **6.3 Target Hydrological Regime**

The target hydrological regime would be discussed in detail once a mitigation site has been selected.

### **6.4 Target Acreages**

Target acreages would be detailed once impacts and mitigation requirements are determined.

### **6.5 Monitoring Methods**

The methods used to monitor the development of the mitigation habitat include qualitative and quantitative procedures. These methods are discussed below.

#### **6.5.1 Qualitative Monitoring**

Qualitative monitoring would involve periodic site visits to evaluate the condition of the mitigation site, conduct general wildlife surveys, and to identify any problems with the development of the habitat and determine if remedial measures are warranted. Evaluating plant health and identifying and correcting problems are necessary for ensuring successful vegetation establishment. The biological monitor would review the restoration areas to examine transplant vigor, and exotic plant encroachment. The biologist would document the findings and make recommendations for remedial actions, if necessary.

A list of plant and wildlife species observed on the mitigation site would be compiled during each qualitative monitoring visit. A list of plant species present and a description of wildlife use will be included with each annual report.

The development of hydrologic and biogeochemical functions at the mitigation sites will be assessed qualitatively. Hydrologic functions (e.g., hydrologic regime, characteristics of the flood prone area, and topographic complexity) will be assessed using the methodology approved by ACOE (Stein 1999). Biogeochemical processes will be assessed qualitatively through observations of the development of vegetation cover and build up of leaf litter, debris, and organic detritus at the mitigation sites, according to the approved methodology (Stein 1999).

### **6.5.2 Quantitative Monitoring**

Quantitative monitoring will be performed to measure development of vegetation in the mitigation area and to document that the revegetation areas achieve the success criteria as defined by the performance standards.

Beginning in year two, permanent vegetation sampling stations will be established within the mitigation site to measure year-to-year changes in herb, shrub, or tree cover; species composition; and species diversity. Sampling will be conducted in the spring of each year of monitoring so that the maximum species diversity and cover will be recorded.

### **6.6 Monitoring Schedule**

The schedule for monitoring is designed to ensure that the mitigation site is evaluated each year on a timely basis (Table 8). This schedule allows for routine evaluations of the mitigation site to quickly identify and correct any issues that may affect the achievement of the success criteria.

**TABLE 8  
FIVE-YEAR MONITORING SCHEDULE**

Tasks	Year 1	Year 2	Year 3	Year 4	Year 5
Implementation	Weekly	----	----	----	----
Qualitative	Monthly	6 times	6 times	4 times	4 times
Quantitative	----	Spring	Spring	Spring	Spring

### **6.7 Monitoring Reports**

Annual reports summarizing monitoring results will be submitted to CDFG, ACOE, and the County of San Diego by the project biologist each year of the maintenance and monitoring period. The report will include the results of the qualitative and quantitative surveys, data summary analysis, performance standards comparison, discussion of remedial actions performed or needed, recommendations for improving the mitigation site, and photo-documentation. Each annual report will compare findings of the current year with those in previous years.

Any significant issue or contingency that arises on the job site (e.g., plant survival issues, fire, or flooding) shall be reported in writing to the County of San Diego within two weeks from the date of the incident. Accompanying the report shall be a plan for remediation, with an implementation schedule and a monitoring schedule.

## **7.0 COMPLETION OF COMPENSATORY MITIGATION**

At the end of the fifth year, a final annual report will be submitted to the County of San Diego and the resource agencies evaluating the success of the mitigation. The report will make a determination of whether the requirements of the mitigation plan have been achieved.

At the conclusion of the five-year monitoring period, or at such time the project has achieved the performance standards, the project biologist would send a letter to inform the owner/project proponent, CDFG, ACOE, and the County of San Diego. A site review will be scheduled for all parties to review the revegetated sites. Upon confirmation of project success, the agencies shall release the owner/project proponent of all obligations.

## **8.0 CONTINGENCY MEASURES**

In the event that the mitigation effort fails to achieve the success criteria outlined in this plan, contingency measures would be considered that would aid in the resolution of issues that may be causing the habitat to not establish at the mitigation site.

### **8.1 Initiating Contingency Procedures**

If performance criteria are not achieved at the end of the fifth year of the maintenance and monitoring period, the owner/project proponent would consult with CDFG, ACOE, and the County of San Diego to determine whether the mitigation effort is acceptable as is, or if contingency measures are necessary. The owner/project proponent understands that failure of any significant portion of the mitigation area may result in a requirement to replace or revegetate that portion of the site. Installation of replacement plants would be done under the direction of the biological monitor in coordination with the resource agencies and County of San Diego.

### **8.2 Funding**

The owner/project proponent would be responsible for the funding of any remedial or contingency measures required to achieve the success of the mitigation effort. These measures may include funding for replacement plants, locating a new mitigation site, implementation of a new mitigation plan, and additional maintenance and monitoring.

## **9.0 REFERENCES CITED**

County of San Diego

- 2007 Report Format and Content Requirements: Revegetation Plans. Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. July 30.

Stein, E.

- 1999 Function-Based Performance Standards for Evaluating the Success of Riparian and Depressional/Emergent Marsh Mitigation Sites. Prepared for the U.S. Army Corps of Engineers, Los Angeles District – Regulatory Branch. May.