

**POSEIDON RESOURCES MARINE LIFE MITIGATION PLAN
SUPPLEMENTAL ALTERNATIVES ANALYSIS OF
CALIFORNIA COASTAL COMMISSION STANDARDS AND OBJECTIVES**



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POSEIDON RESOURCES MARINE LIFE MITIGATION PLAN SUPPLEMENTAL ALTERNATIVES ANALYSIS OF CALIFORNIA COASTAL COMMISSION STANDARDS AND OBJECTIVES

INTRODUCTION

In August 2008, the California Coastal Commission (CCC) directed Poseidon Resources to evaluate 11 sites located in the Southern California Bight as potential mitigation sites for impacts associated with the operation of the proposed Carlsbad Desalination Plant located at Agua Hedionda Lagoon in northern San Diego County. This condition of the Marine Life Mitigation Plan (MLMP) also allowed evaluation of other sites if deemed a “high priority wetlands restoration project” by California Department of Fish and Game (CDFG). In January 2010, Poseidon submitted “Comparison of Selected Southern California Tidal Wetlands as Potential Sites for Mitigation of Impacts Associated with Poseidon Resources Proposed Carlsbad Desalination Plant” (Nordby Biological Consulting 2010). That document identified restoration of the Otay River floodplain located within the South Bay Unit of the U.S. Fish and Wildlife San Diego Bay National Wildlife Refuge as the preferred mitigation site. This site was subsequently supported by CDFG. As an appendix to the Nordby Biological Consulting 2010 report, minimum standards and objectives developed by the CCC in the MLMP were evaluated with regard to the Otay River floodplain site. The appendix concluded that the selection of the Otay River floodplain site met the objectives and goals developed by the CCC. Recently, CCC staff requested that this evaluation be expanded to include a number of additional sites, especially sites within northern San Diego County as these occur in closer proximity to the source of project impacts. These included seven of the original 11 sites designated in August 2008 and one additional site (Loma Alta Lagoon), presented below geographically from north to south. The Otay River Floodplain site has been included as well for comparison.

- Loma Alta Lagoon,
- Buena Vista Lagoon,
- Agua Hedionda Lagoon,
- Batiquitos Lagoon,
- San Elijo Lagoon,
- San Dieguito Lagoon,
- Los Peñasquitos Lagoon,
- Tijuana Estuary.

Coincidental to the submittal of Nordby Biological Consulting 2010, an independent assessment of restoration potential in northern San Diego County Lagoons was conducted that assessed potential mitigation sites for the proposed I-5 North Coast Corridor Project (WRA and AECOM December 2009). That report identified potential restoration opportunities at six of the eight sites presented above, including:

- Buena Vista Lagoon,
- Agua Hedionda Lagoon,

- Batiquitos Lagoon,
- San Elijo Lagoon,
- San Dieguito Lagoon,
- Los Peñasquitos Lagoon.

This document expands upon the analysis of CCC minimum standards and objectives as requested by the CCC. It is based on the information included in WRA and AECOM 2009 as well as that previously presented information contained in Nordby Biological Consulting 2010.

The potential mitigation area at each lagoon is presented below and summarized in Table 1.

LOMA ALTA LAGOON

3.1 Minimum Standards – Restoration of Loma Alta Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of Loma Alta Lagoon satisfies the requirement that the mitigation site be located within the Southern California Bight.

- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

The City of Oceanside has proposed the restoration of Loma Alta Lagoon as mitigation for potential project impacts at Agua Hedionda Lagoon. The project would require acquisition of properties adjacent to Loma Alta Lagoon, development of a restoration plan, acquisition of necessary permits, and construction. The project consists of five parcels, three of which are owned by the City of Oceanside (2.62 total acres) and two privately owned parcels (0.89 acre; Figure 1). The City of Oceanside proposes that Poseidon acquire the two privately owned parcels and restore all five parcels for a total restoration of 3.01 acres. The remainder 0.5 acre would be needed to provide access to an adjacent parcel. Currently, Loma Alta Lagoon consists of 2 acres of restored wetlands.

The restoration proposed by the City of Oceanside is conceptual and does not include any preliminary or detailed design. Thus, it is unclear how much of the proposed 3.01-acre restoration would be restored as intertidal or subtidal habitat and how much potentially restorable area would be required to be designated as buffer or upland transition area; however, this restoration proposal does not meet the minimum standard of restoring extensive intertidal or subtidal areas.

- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

Figure 1: Loma Alta Slough



Pacific Ocean




Coast Highway

Loma Alta Slough

LA: Potential Wetland Area - 2.6 acres

1,000 Feet

Legend

-  City Boundaries
-  Parcels
-  Potential Wetland Area

N

0

As presented above, the conceptual plan for Loma Alta Lagoon proposes restoration of 3.01 acres of land that is currently upland. There are no details regarding the type of habitats to be created. Nonetheless, this proposal does not meet the minimum standard of substantially restoring a minimum of 37 acres and up to 66 acres of habitat similar to those affected at Agua Hedionda Lagoon.

d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

The conceptual restoration proposed by the City of Oceanside does not include minimum buffer areas of 100 feet. The parcels proposed for acquisition and restoration abut developed areas of the city. Inclusion of the 100 foot buffer at the upland edge of the parcels would substantially reduce the total area available for restoration.

e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

The conceptual restoration proposed by the City of Oceanside does not address potential contamination. Examination of commercially available aerial photographs suggests that some of the parcels may have been used as storage yards; thus, the potential for contamination may exist and would need to be evaluated prior to acquiring and restoring the parcels.

f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The project is located within the City of Oceanside. The City would be responsible for guaranteeing the protection of restored areas in perpetuity.

g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The City of Oceanside currently manages and protects the existing resources of Loma Alta Lagoon. It is assumed that the City has methods available to protect the long-term values on-site.

h. Does not result in a net loss of existing wetlands;

The proposed project would not result in a net loss of wetland habitats.

i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

There are no available data on the presence/absence of endangered animal or plant species at Loma Alta Lagoon. Due to the current size of the lagoon (approximately 2 acres) it is

unlikely that endangered animal species are present. Any restoration plan would require site-specific focused surveys for endangered plants and animals.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum of 3.01 acres, not including upland buffers, would provide minimal overall ecosystem benefits. Restoration to coastal salt marsh could provide a minimal increase in this regionally scarce habitat. Restoration to open water would not provide regionally scarce habitat but could enhance downstream fish values. The small area identified for restoration may significantly increase local ecosystem diversity increasing the area of restored lagoon from 2 acres to 5.01 acres.

- b. Provides substantial fish habitat compatible with other wetland values at the site(s);

As presented above, the proposed restoration of Loma Alta Lagoon is conceptual only. Given the overall size of the restorable area (3.01 acres) it is unlikely that this site would provide substantial fish habitat as well as other wetland values.

- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

The proposed project is conceptual only and does not include buffers. Buffers averaging 300 feet in width would reduce the restorable 3.01 acres to a narrow strip of land adjacent to Loma Alta Creek that would be substantially less than the estimated 3.01 acres.

- d. Provides maximum upland transition areas (in addition to buffer zones);

The proposed project is conceptual only and does not include buffers or upland transition areas. Inclusion of upland transition and buffers would effectively render restoration of wetland habitats infeasible at Loma Alta Lagoon.

- e..Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

The proposed project is conceptual only but could be designed to minimize impacts on existing functioning wetlands and other sensitive habitats.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The conceptual restoration proposed by the City of Oceanside is the only existing restoration plan for Loma Alta Lagoon and reflects the City's restoration goals rather than regional wetland goals.

g. Restoration design is that most likely to produce and support wetland-dependent resources;

The proposed project is conceptual only. Buffer and upland transition requirements would not result in a final plan that is most likely to produce and support wetland-dependent resources.

h. Provides rare or endangered species habitat;

The proposed project is conceptual only. Buffer and upland transition requirements would not result in a final plan that is most likely to support rare or endangered species.

i. Provides for restoration of reproductively isolated populations of native California species;

As the proposed project is conceptual only and would be subjected to the required minimum buffers and upland transition areas, it is unlikely that the project would provide for restoration of reproductively isolated populations of native California species.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

Restoration of a maximum of 3.01 acres of wetland habitats would result in a minimal increase in the aggregate acreage of wetland in the Southern California Bight.

k. Requires minimum maintenance;

The proposed project is conceptual only. Maintenance requirements would need to be determined at a more detailed level of planning. It should be noted that the mouth of Loma Alta Lagoon is usually closed by a sand bar. Any long-term restoration of the site would likely require continual inlet maintenance thereby increasing the cost and reducing the feasibility of restoring a fraction of the 3.01 acres identified by the City of Oceanside.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

Given the conceptual nature of the restoration proposal, the need for property acquisition, planning, permitting, and required engineering and environmental review, it is unlikely that this project could be accomplished in a timely manner compared to sites that have undergone more rigorous analysis.

m. Site(s) in proximity to the Carlsbad desalination facility.

Loma Alta Lagoon is located approximately 5.5 miles north of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

BUENA VISTA LAGOON

3.1 Minimum Standards – Restoration of Buena Vista Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of Buena Vista Lagoon satisfies the requirement that the mitigation site be located within the southern California Bight.

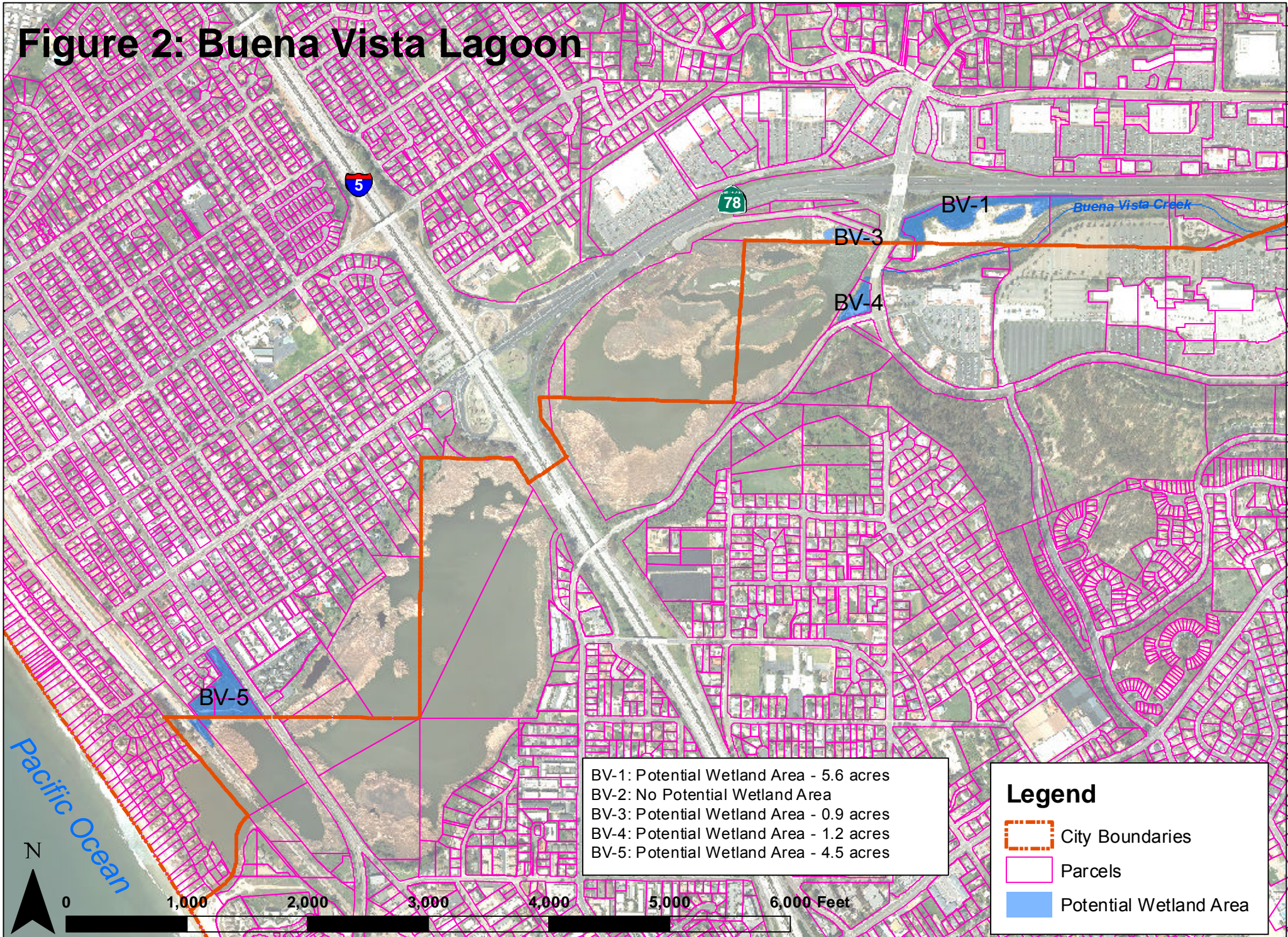
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

Previous analyses of wetland restoration opportunities in Southern California (Nordby Biological Consulting 2010; WRA and AECOM 2009) have documented that large-scale restoration of Buena Vista Lagoon is currently in the planning stages. Conceptual, schematic designs have been developed for three major restoration alternatives: the No Action (existing conditions) alternative; a freshwater-dominated system alternative; and a saltwater-dominated system alternative (Buena Vista Lagoon Restoration Feasibility Analysis, Everest International Consultants 2006). Both reports conclude that a preferred alternative has not yet been selected and that there is a lack of consensus among stakeholders that continues to delay selection of the preferred alternative.

While Buena Vista Lagoon holds promise as a restoration site, the lack of “conventional restoration” opportunities, as defined by WRA and AECOM (2009) diminishes its suitability as a mitigation site for potential impacts associated with the Carlsbad Desalination Facility. Conventional restoration includes creation of wetland in upland habitats and/or restoration of historic wetland areas that have been filled (WRA and AECOM 2009). In the case of Buena Vista Lagoon, historic hydraulic modifications have reduced the extent of tidal influence in the lagoon resulting in a system dominated by freshwater wetlands (Everest International Consultants 2006). However, the lagoon has not been filled and little opportunity exists for conventional restoration of upland habitats. Conversion from one wetland type (freshwater) to another wetland type (saltwater) is not considered conventional restoration and is not appropriate for Poseidon’s mitigation requirements.

Recognizing that the large-scale restoration planning currently being conducted for Buena Vista Lagoon would not be considered conventional restoration, WRA and AECOM (2009) focused on smaller areas within the lagoon that could be restored conventionally. Six potential restoration sites varying in area from 0.9 acre to 5.6 acres and totaling 12.2 acres were identified (Figure 2). Of those six potential restoration sites, two received a mitigation potential score of 5, two received a score of 3, and two received a score of 2, on a scale of 1-5 with 1 being the highest possible score. Sites BV-4 and BV-5 received the highest scores (2) for restorability. These two sites totaled 5.7 acres of potential conventional restoration.

Figure 2: Buena Vista Lagoon



- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As presented above, restoration of a maximum of 12.2 acres, with a high potential restoration maximum of 5.7 acres, does not meet this minimum standard.

- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

The areas proposed by WRA and AECOM as potential restoration sites and their adequacy to provide a minimum buffer of 100 feet are summarized below.

- **Site BV-1 (5.6 acres conventional restoration, mitigation potential score = 3) is located immediately adjacent to Vista Way and does not provide the minimum buffer of 100 feet;**
- **Site BV -2 (0 acres conventional restoration, mitigation potential score = 5) is located immediately adjacent to Vista Way and does not provide the minimum buffer of 100 feet;**
- **Sites BV-3a and BV-3b (0.0 and 0.9 acres conventional restoration, respectively, mitigation potential scores = 5 and 3, respectively), appear to meet the minimum buffer criterion;**
- **Sites BV-4 and BV-5 (1.2 and 4.5 acres, respectively, mitigation potential scores of 2) are located immediately adjacent to developed areas and do not provide the minimum 100-ft buffer.**
-

In summary, the areas within Buena Vista Lagoon with highest potential for restoration according to WRA and AECOM (2009) do not meet the minimum goals for a 100-foot buffer zone.

- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

There is no evidence provided in WRA and AECOM (2009) or the Buena Vista Lagoon Restoration Feasibility Analysis (Everest International Consultants, 2006) that there are site contamination problems at Buena Vista Lagoon; however, neither study presents specific data on site conditions.

- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

Site BV-1 is privately owned and at this time cannot be expected to be protected or guaranteed in perpetuity. The site would need to be purchased and conveyed to an entity that could provide such protection.

Sites BV-, BV -3a and 3b, and BV-4 are owned by the State of California (WRA and AECOM 2009). Prior to any restoration at Buena Vista Lagoon, agreements with the State of California would have to be adopted to guarantee preservation of the site in perpetuity.

Site BV-5 is primarily in privately ownership and at this time cannot be expected to be protected or guaranteed in perpetuity. The site would need to be purchased and conveyed to an entity that could provide such protection.

- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The Buena Vista Ecological Reserve is owned and managed by California Department of Fish and Game who would be required to provide management of any restored wetlands and to protect its ecological value in perpetuity.

- h. Does not result in a net loss of existing wetlands;

Restoration of the maximum 12.2 acres with 5.7 acres of high restoration potential identified at Buena Vista Lagoon could be accomplished without resulting in a net loss of existing wetlands;

- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

Buena Vista Lagoon wetland habitats have been documented to support breeding populations of the state listed endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) and the state and federal listed endangered light-footed clapper rail (*Rallus longirostris levipes*). The Buena Vista Lagoon Restoration Feasibility Analysis (Everest International Consultants, 2006) acknowledges that restoration of the lagoon may impact these species; however, as that study is conceptual, potential impacts to sensitive species cannot be determined at this time.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum 12.2 acres with 5.7 acres of high restoration potential identified at Buena Vista Lagoon would provide minimal overall ecosystem benefits. The potential restoration sites are located along the upland fringe of the lagoon adjacent major roads and

development. The potential restoration sites with the highest potential for restoration do not provide for minimum buffers. The lagoon currently supports a freshwater fishery that attracts local fishing enthusiasts and restoration of existing upland to additional freshwater marsh would add little value to downstream fisheries. The potential restoration of freshwater wetlands would not substantially increase regionally scarce habitat as freshwater wetlands are not regionally scarce compared to salt marsh or other estuarine habitats. The small area identified for restoration would not substantially increase local ecosystem diversity.

b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The restoration of a maximum 12.2 acres with 5.7 acres of high restoration potential identified at Buena Vista Lagoon is conceptual only and lacks preliminary design. Assuming that the sites would be restored to freshwater marsh would not provide substantial fish habitat. Assuming that the sites were restored to open water would result in an increase in potential increase in fish habitat; however, connecting the restored areas to exiting freshwater habitat may result in additional impacts that would require mitigation.

c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

See project goals, item d above.

d. Provides maximum upland transition areas (in addition to buffer zones);

Although the potential restoration sites at Buena Vista Lagoon identified by WRA and AECOM (2009) are conceptual only, their location within existing freshwater marsh habitat and adjacency to developed areas precludes creation of upland transition areas.

e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

Although the potential restoration sites at Buena Vista Lagoon identified by WRA and AECOM (2009) are conceptual only, it is feasible that these areas could be restored with minimum impact on existing wetlands and other sensitive habitats.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The selection of the areas identified in Buena Vista Lagoon by WRA and AECOM (2009) reflect the need to mitigate for impacts associated with the proposed I-5 North Coast Corridor Project and do not consider site-specific restoration goals. The potential restoration is conceptual and does not include preliminary or advanced planning. As stated previously, site-specific restoration goals and plans are being developed for the

Lagoon. Restoration of the maximum 12.2 acres identified would not substantially contribute to these restoration goals.

g. Restoration design is that most likely to produce and support wetland-dependent resources;

As stated above, the areas identified for potential restoration are very conceptual and do not include preliminary design. Thus, this objective cannot be evaluated for Buena Vista Lagoon.

h. Provides rare or endangered species habitat;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Buena Vista Lagoon.

i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Buena Vista Lagoon.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

The maximum of 12.2 acres identified for restoration would result in a slight increase in the aggregate acreage of wetland in the Southern California Bight.

k. Requires minimum maintenance;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Buena Vista Lagoon.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

As no plans have been developed for restoration of the 12.2 acres of maximum potential restoration, lands with high potential for restoration are privately owned, and there are no agreements providing protection in perpetuity, it is unlikely that the restoration identified for Buena Vista Lagoon can be accomplished in a timely manner when compared to other sites that have undergone feasibility analyses and other more detailed planning.

m. Site(s) in proximity to the Carlsbad desalination facility.

Buena Vista Lagoon is located approximately 3.5 miles north of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

AGUA HEDIONDA LAGOON

3.1 Minimum Standards – Restoration of Aqua Hedionda Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of Aqua Hedionda Lagoon satisfies the requirement that the mitigation site be located within the southern California Bight.

- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

Agua Hedionda Lagoon offers limited opportunities for “conventional restoration” as defined by WRA and AECOM (2009). Conventional restoration includes creation of wetland in upland habitats and/or restoration of historic wetland areas that have been filled. This type of restoration typically involves the removal of fill materials and/or restoration of wetland hydrology to sites that are currently uplands.

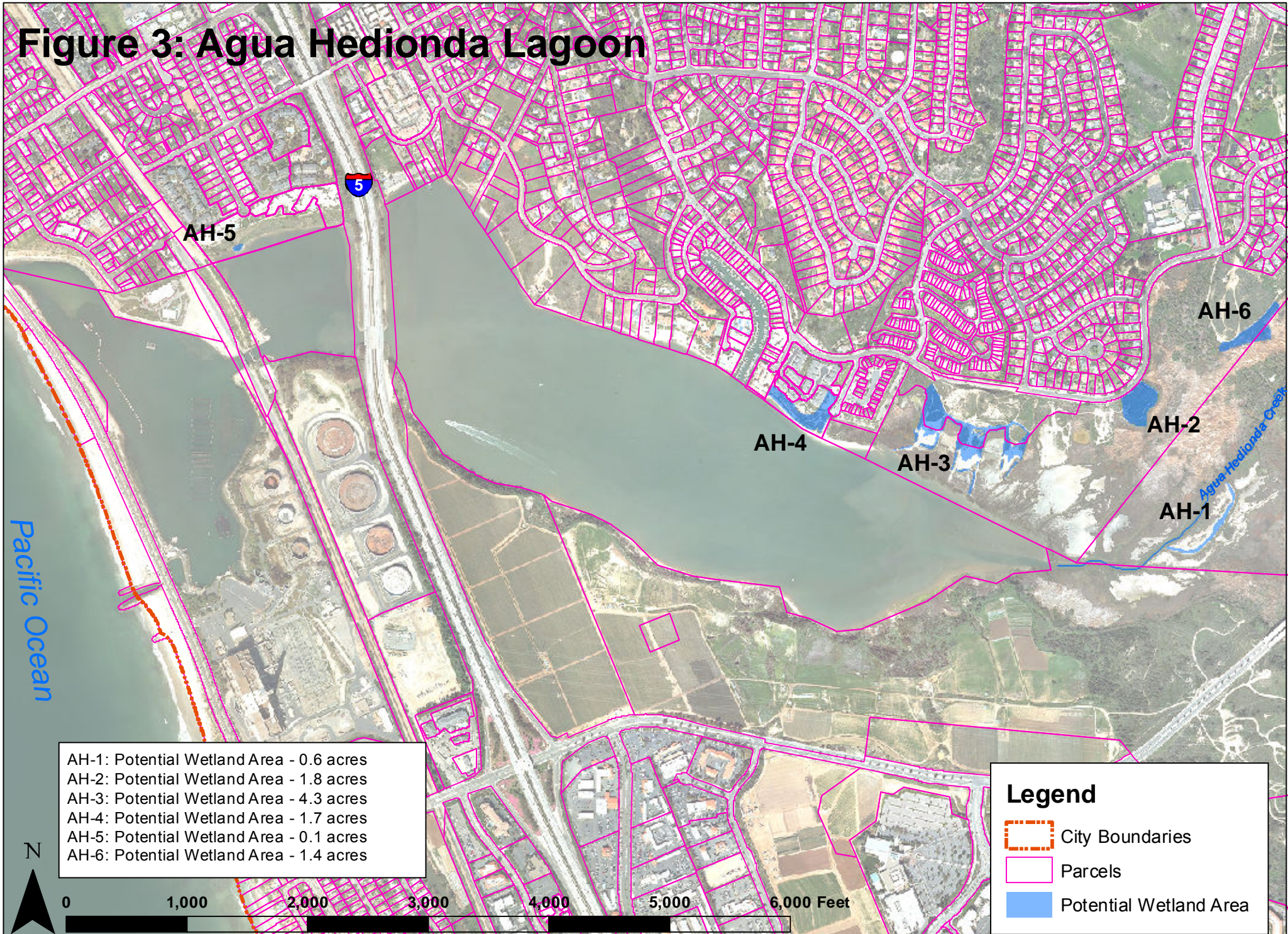
In their assessment of potential coastal wetland restoration sites for the proposed I-5 North Coast Corridor Project, WRA and AECOM (2009) identified a six separate areas totaling 9.9 acres of potential conventional restoration at Aqua Hedionda Lagoon (Figure 3). Of the 9.9 total acres, 9.3 acres were determined to have high restoration potential (mitigation potential scores of 1 or 2 on a scale of 1-5 with 1 being the highest). These opportunities consist primarily of berms and trails in the eastern portion of the lagoon. These areas and their mitigation potential for Poseidon are presented below.

AH-1. AH-1 consists of 0.6 acres located in the southeastern portion of the lagoon on land owned by State of California. AH-1 was determined to have a restoration potential of 4 (WRA and AECOM 2009). The authors of that document determined that the majority of the site was likely a jurisdictional wetland and that access would likely result in impacts to existing wetlands. As this land is likely jurisdictional wetland, it is not considered to be available to Poseidon for mitigation purposes.

AH-2. AH-2 consists of 1.8 acres located in the northeastern portion of the lagoon on lands owned by State of California. AH-2 was determined to have a restoration potential of 1 (WRA and AECOM 2009). AH-2 occurs within an area designated as critical habitat for coastal California gnatcatcher (*Poliopitila californica californica*). It is unclear how this designation affects the availability of this parcel for restoration by Poseidon.

AH-3. AH-3 consists of 4.3 acres located in the northeastern portion of the lagoon on lands recently purchased by Caltrans for mitigation purposes. This parcel is, therefore, not available to Poseidon for restoration.

Figure 3: Agua Hedionda Lagoon



- AH-1: Potential Wetland Area - 0.6 acres
- AH-2: Potential Wetland Area - 1.8 acres
- AH-3: Potential Wetland Area - 4.3 acres
- AH-4: Potential Wetland Area - 1.7 acres
- AH-5: Potential Wetland Area - 0.1 acres
- AH-6: Potential Wetland Area - 1.4 acres

Legend

- City Boundaries
- Parcels
- Potential Wetland Area



0 1,000 2,000 3,000 4,000 5,000 6,000 Feet

AH-4. AH-4 consists of 1.7 acres located in the northeastern portion of the lagoon on privately owned land. AH-4 was determined to have a restoration potential of 1 (WRA and AECOM 2009). Assuming the private owner is willing to sell, this parcel may be available for restoration by Poseidon.

AH-5. AH-5 consists of 0.1 acre located in the northwestern portion of the lagoon on privately owned land. AH-5 was determined to have a restoration potential of 1 (WRA and AECOM 2009). Assuming the private owner is willing to sell, this parcel may be available for restoration by Poseidon.

AH-6. AH-6 consists of 1.4 acres located in the northeastern portion of the lagoon on land owned by the State of California. AH-6 was determined to have a restoration potential of 2 (WRA and AECOM 2009). This parcel may be available for restoration by Poseidon.

In summary, there is a maximum of 5 acres (AH-2, AH-4, AH-5 and AH-6) that may be available to Poseidon for conventional restoration at Aqua Hedionda Lagoon. Potential restrictions to wetland restoration on parcel AH-2 due to its designation as coastal California gnatcatcher critical habitat may reduce this availability to 3.2 acres. Some of these parcels are constrained in the form of current ownership.

c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As demonstrated above, restoration of a maximum of 3.2 - 5.0 acres does not meet this minimum standard.

d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

Of the sites available to Poseidon, only site AH-6 totaling a maximum restoration area of 1.4 acres would satisfy the minimum buffer requirement of 100 feet. All other sites within Aqua Hedionda Lagoon abut roads and development. Reconfiguring the parcels to include required minimum buffers would further reduce the 3.2 – 5.0 acres available for restoration.

e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

The potential for contamination at the sites available to Poseidon for mitigation is unknown.

f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The maximum 3.2 – 5.0 acres of restoration available to Poseidon at Aqua Hedionda Lagoon are located within lands owned by the State of California and private entities. Prior to any restoration at Aqua Hedionda Lagoon, lands would have to be acquired and agreements adopted to guarantee preservation of the site in perpetuity.

- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The majority of the northeastern portion of Aqua Hedionda Lagoon is owned by the State of California under the direction of CDFG who would be required to provide management of any restored wetlands and to protect its ecological value in perpetuity.

- h. Does not result in a net loss of existing wetlands;

The restoration of a maximum 3.2 – 5.0 acres identified at Aqua Hedionda Lagoon is conceptual only and lacks preliminary design. It is unknown if any impacts to existing wetlands would be incurred during restoration activities; however, it is unlikely that restoration activities would result in a net loss of wetland habitat.

- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

Aqua Hedionda Lagoon wetland habitats have been documented to support breeding populations of the state listed endangered Belding’s savannah sparrow (*Passerculus sandwichensis beldingi*) and the state and federal listed endangered light-footed clapper rail (*Rallus longirostris levipes*). Without site-specific focused surveys, potential impacts to sensitive wildlife species from restoration activities cannot be determined at this time. There are no state or federal endangered plant species reported from the lagoon (WRA and AECOM 2009).

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum of 3.2 - 5.0 acres would provide minimal overall ecosystem benefits. Access to potential restoration sites could impact existing wetlands, requiring additional mitigation and reducing credit for restoration. Restoration to coastal salt marsh could provide regionally scarce habitat. Restoration to open water would not provide regionally scarce habitat but could enhance downstream fish values. The small area

identified for restoration would not include upland buffer habitat or significantly increase local ecosystem diversity.

b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The restoration of a maximum 3.2 -5.0 acres identified at Aqua Hedionda Lagoon is conceptual only and lacks preliminary design. Assuming that the sites would be restored to coastal salt marsh would not provide substantial fish habitat. Assuming that the sites were restored to open water would result in a minimal potential increase in fish habitat; however, restoration to open water would reduce the area for restoration to wetland habitat.

c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

Of the sites available to Poseidon, only site AH-6 totaling a maximum restoration area of 1.4 acres would satisfy the objective of a 300-foot buffer and the minimum buffer requirement of 100 feet. All other sites within Aqua Hedionda Lagoon abut roads and development. Incorporation of required buffers would reduce the small area available for restoration.

d. Provides maximum upland transition areas (in addition to buffer zones);

None of the sites available to Poseidon could accommodate upland transition areas without reducing the area for wetland restoration to a fraction of the estimated 3.2 – 5.0 acres.

e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

The restoration of a maximum 3.2 – 5.0 acres identified at Aqua Hedionda Lagoon is conceptual only and lacks preliminary design. It is unknown if any impacts to existing wetlands or other sensitive habitats would be incurred during restoration activities. It is assumed that detailed design plans would minimize such impacts.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The selection of the potential restoration sites at Aqua Hedionda Lagoon identified by WRA and AECOM (2009) reflect the need to mitigate for impacts associated with the proposed I-5 North Coast Corridor Project and do not consider site-specific restoration goals. With the exception of the recent purchase of AH-3 by Caltrans with the intention of restoration, there are no site-specific restoration plans for Aqua Hedionda Lagoon identified by WRA and AECOM (2009) or in other studies of restoration opportunities within the region, e.g., Nordby Biological Consulting 2010.

g. Restoration design is that most likely to produce and support wetland-dependent resources;

The areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for the sites identified for Aqua Hedionda Lagoon by WRA and AECOM (2009).

h. Provides rare or endangered species habitat;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for the sites identified for Aqua Hedionda Lagoon by WRA and AECOM (2009).

i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for the sites identified for Aqua Hedionda Lagoon by WRA and AECOM (2009).

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

The maximum of 3.2 - 5.0 acres identified for restoration would result in a minimal increase in the region's wetland habitats.

k. Requires minimum maintenance;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for the sites identified for Aqua Hedionda Lagoon by WRA and AECOM (2009).

l. Restoration project can be accomplished in a reasonably timely fashion; and,

As no plans have been developed for land acquisition and/or restoration of the 3.2 - 5.0 acres of restoration available to Poseidon, it is unlikely that any project in Aqua Hedionda Lagoon can be accomplished in a timely manner when compared to other sites that have undergone feasibility analyses and occur only on public property.

m. Site(s) in proximity to the Carlsbad desalination facility.

NA

BATIQUITOS LAGOON

3.1 Minimum Standards – Restoration of Batiquitos Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of Batiquitos Lagoon satisfies the requirement that the mitigation site be located within the southern California Bight.

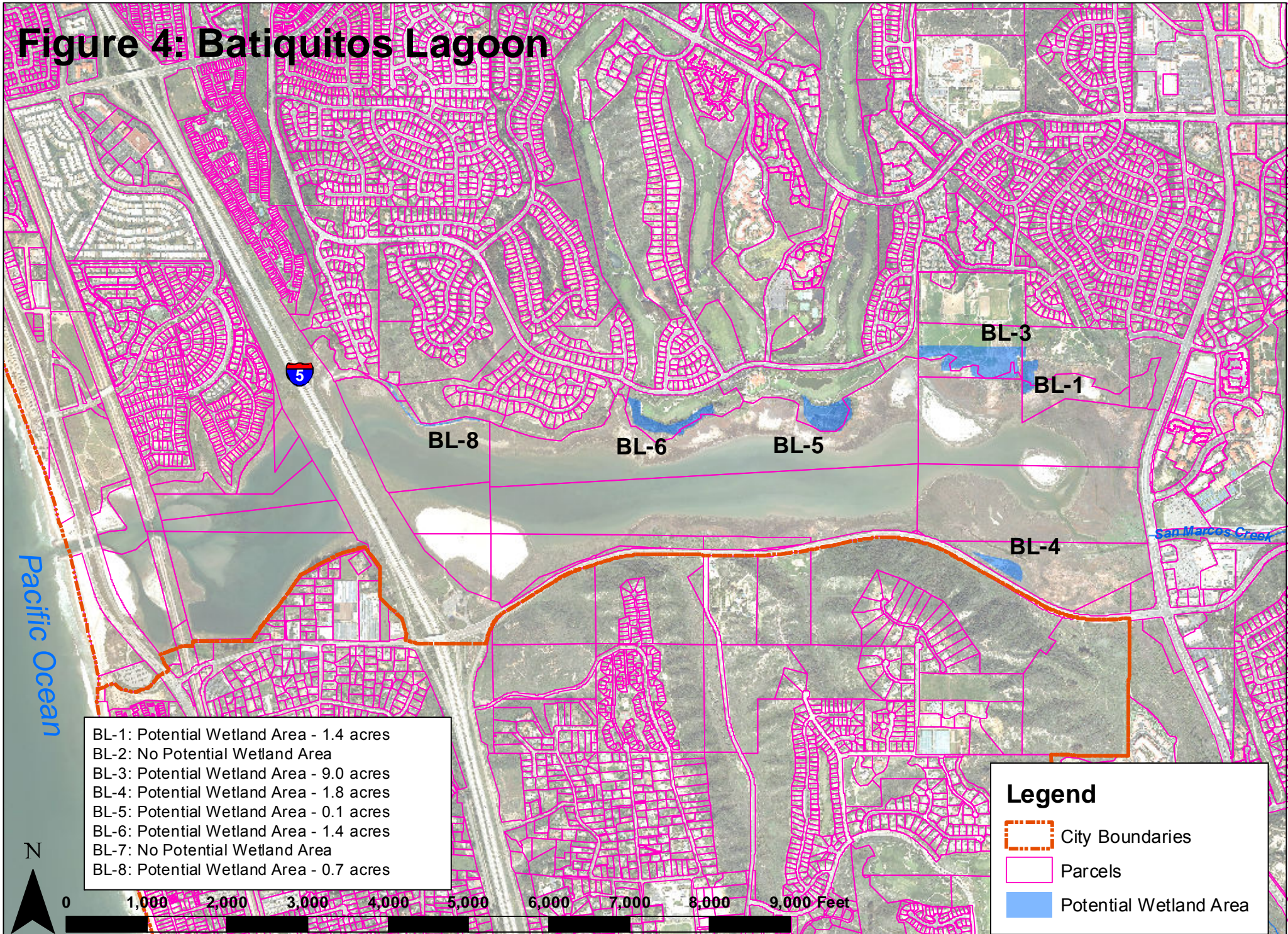
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

Batiquitos Lagoon underwent large-scale restoration between 1989 and 1996 (WRA and AECOM 2009). The primary restoration activities included construction of a new tidal inlet, construction of a new Pacific Coast Highway bridge, construction of five tern/plover nesting areas and the excavation of 3 million cubic yards of sediment. Other restoration activities included planting of salt marsh vegetation and eelgrass habitat. Having undergone this large-scale restoration, further opportunities for conventional restoration are limited.

The primary opportunities for conventional tidal wetland restoration at Batiquitos Lagoon exist on the northern banks of the lagoon east of I-5 (Figure 4). Overall, six viable potential restoration sites totaling 14.4 acres were identified for Batiquitos Lagoon (WRA and AECOM (2009). Two sites (BL-2 and BL-7) were rejected after field reconnaissance. Of the six potential sites identified, five sites occurring on the northeastern banks of the lagoon totaling 12.6 acres were considered to have a high restoration potential. These areas and their mitigation potential for Poseidon are presented below.

- **BL-1. BL-1 consists of 1.4 acres owned by the Batiquitos Lagoon Foundation. This site was ranked 2 in terms of restoration potential, although WRA and AECOM acknowledged that “...some areas may be within USACE, CCC, and/or CDFG jurisdiction.” It is uncertain how much of the 1.4 acres could be credited toward Poseidon’s mitigation needs. For this analysis, it is assumed that the entire 1.4 acres is available to Poseidon.**
- **BL-3. BL-3 includes 9.0 acres of privately-owned land. This site was ranked 1 in terms of restoration potential. All 9.0 acres are potentially available to Poseidon.**
- **BL-4. This site consists of 1.4 acres owned by the State of California. WRA and AECOM (2009) determined that most of the site is jurisdictional and is subject to inundation by high tides. Thus, this site, ranked 4 in terms of restoration potential, provides little opportunity for Poseidon.**

Figure 4: Batiquitos Lagoon



- **BL-5.** BL-5 consists of 0.1 acre of land that appears to be owned by an entity designated in the WRA and AECOM 2009 report as “Environmental Trust” (WRA and AECOM 2009). It is assumed that this refers to the now-defunct non-profit group The Environmental Trust (TET), although the designation is not further defined in the report. Ownership by the defunct TET could be problematic as sale or transfer could be subject to legal ramifications pending bankruptcy by the TET. This site was ranked 2 in terms of restoration potential, although WRA and AECOM acknowledged that “...some areas may be within USACE, CCC, and/or CDFG jurisdiction.” Given the initial area of 0.1 acre and potential ownership issues, it may be concluded that this parcel holds very little opportunity for Poseidon’s mitigation requirements.
- **BL-6.** This site consists of 1.4 acres of land owned by the now-defunct TET. This site was ranked 1 in terms of restoration potential, although WRA and AECOM acknowledged that “...some areas may be in CCC jurisdiction.” Some of this area may be available to Poseidon for mitigation; however, ownership by the defunct TET could be problematic. Given ownership by the TET and the uncertainty regarding jurisdictional status, it may be concluded that this parcel holds very little opportunity for Poseidon’s mitigation requirements.
- **BL-8.** BL-8 consists of 0.7 acre that appears to be owned by the defunct TET (WRA and AECOM 2009). This site was ranked 2 in terms of restoration and may be considered available for Poseidon’s mitigation requirements.

Assuming that lands owned by the TET and other private concerns could be purchased, there is a maximum of about 12.5 acres that could be available to Poseidon for mitigation.

- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As presented above, restoration of a maximum of 12.5 acres, with a potential reduction of that maximum due to impacts jurisdictional wetlands, does not meet this minimum standard. Required buffers would further reduce the area available.

- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

Sites BL-1 and BL-3 appear to satisfy the minimum 100-foot buffer standard. Sites BL-5 and BL-6 abut the Aviara golf course and community and would likely have to be reduced in area to accommodate minimum buffers. Site BL-4 abuts La Costa Avenue and would have to be reconfigured to accommodate the minimum buffer, resulting in a reduced area for restoration. Site BL-8 abuts the Aviara golf course and community and cannot accommodate the 100-foot minimum buffer. Thus, less than the maximum 12.5 acres presented above would be available for restoration once buffers are included.

- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

There is no evidence to suggest that there are site contamination issues at Batiquitos Lagoon; however site-specific information on the parcels identified by WRA and AECOM 2009 is lacking.

- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The maximum 12.5 acres of restoration identified within Batiquitos Lagoon are owned by both public and private entities. For those lands owned by the State of California, agreements with the state would have to be adopted to guarantee preservation of the site in perpetuity. For those lands owned privately or by the defunct TET, acquisition and agreements with the state would need to be adopted.

- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The majority of Batiquitos Lagoon is managed by CDFG who would be required to provide management of any restored wetlands and to protect its ecological value in perpetuity.

- h. Does not result in a net loss of existing wetlands;

The restoration of the maximum 12.5 acres identified at Batiquitos Lagoon would not result in a net loss of existing wetlands.

- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

The WRA and AECOM (2009) identified four special status wildlife species with breeding populations at Batiquitos Lagoon. These include the light-footed clapper rail, Belding's savannah sparrow, the state and federal listed endangered California least tern (*Sternula antillarum browni*), and the federally threatened western snowy plover (*Charadrius alexandrinus nivosus*). No state or federal listed endangered plant species were identified. Site-specific surveys would be required to determine presence/absence of any endangered species and any impacts associated with restoration activities; however, it is assumed that impacts to sensitive species could be avoided.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum of 12.5 acres would provide moderate overall ecosystem benefits. Restoration of the parcels identified by WRA and AECOM (2009) could impact existing wetlands and the requirements of minimum buffers would further reduce restorable area. The largest site, BL-3 (9.0 acres) is described as existing upland that could be excavated to promote tidal action. Thus, this site could provide enhancement of downstream fish values and regionally scarce habitat, such as salt marsh and mudflat. The small area identified for restoration would not maximize upland buffer habitat or significantly increase local ecosystem diversity.

- b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The maximum of 12.5 acres identified for potential restoration could provide moderate habitat for fish; however, the primary opportunities for restoration, BL-3, BL-5 and BL-6, are not contiguous with the open water habitat of the lagoon. Each site would have to be excavated to create low intertidal or subtidal habitat and would have to be connected to the open water of the lagoon in order to create fish habitat. This would preclude restoration of regionally scarce habitats, such as salt marsh and mudflat.

- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

Site BL-1 appears to satisfy the minimum 100-foot buffer standard and could accommodate a 300-foot buffer. Site BL-3 would have to be reconfigured to accommodate a 300-foot buffer with a corresponding decrease in area available for restoration. Sites BL-5 and BL-6 abut the Aviara golf course and community and would likely have to be reduced in area to accommodate 100-foot or 300-foot buffers. Site BL-4 abuts La Costa Avenue and would have to be refigured to accommodate the minimum buffer, resulting in a reduced area for restoration. Site BL-8 cannot accommodate a 100-foot or 300-foot buffer. Sites BL-4, BL-6 and BL-7 could not accommodate a 300-foot buffer. Thus, less than the maximum 12.5 acres presented above would be available for restoration.

- d. Provides maximum upland transition areas (in addition to buffer zones);

Although the potential restoration sites identified by WRA and AECOM (2009) are only conceptual in nature, designing the restoration to maximize upland habitat would result in a corresponding loss of area to be restored to coastal wetland.

- e..Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

As stated above, restoration of a maximum of 12.5 acres may result in impacts to existing wetlands. While these impacts may be minimized, they could require mitigation which

would reduce benefits to the overall system, or avoidance would reduce the area available for restoration.

- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The selection of the 12.6 acres identified by WRA and AECOM (2009) reflect the need to mitigate for impacts associated with the proposed I-5 North Coast Corridor Project. The potential restoration is conceptual and does not include preliminary or advanced planning. As the lagoon has undergone large-scale restoration, site-specific restoration plans are lacking.

- g. Restoration design is that most likely to produce and support wetland-dependent resources;

As stated above, the areas identified for potential restoration are very conceptual and do not include preliminary design. Thus this objective cannot be evaluated for Batiquitos Lagoon.

- h. Provides rare or endangered species habitat;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Los Batiquitos Lagoon.

- i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Los Batiquitos Lagoon.

- j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

While it is possible that the maximum of 12.5 or 12.6 acres identified for restoration would result in a slight increase in the aggregate acreage of wetland in the Southern California Bight, it is unlikely that a net of 12.6 acres would result from restoration efforts. Thus, implementation of this restoration would result in a very minor increase in the region's wetland habitats.

- k. Requires minimum maintenance;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Los Batiquitos Lagoon.

- l. Restoration project can be accomplished in a reasonably timely fashion; and,

As no plans have been developed for restoration of the 12.6 acres of maximum potential restoration, and the proposed conventional restoration would require acquisition and implementation of protection agreements, it is unlikely that any project in Batiquitos Lagoon can be accomplished in a timely manner when compared to other sites that have undergone feasibility analyses.

m. Site(s) in proximity to the Carlsbad desalination facility.

Batiquitos Lagoon is located approximately 9 miles south of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

SAN ELIJO LAGOON

3.1 Minimum Standards – Restoration of San Elijo Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of San Elijo Lagoon satisfies the requirement that the mitigation site be located within the southern California Bight.

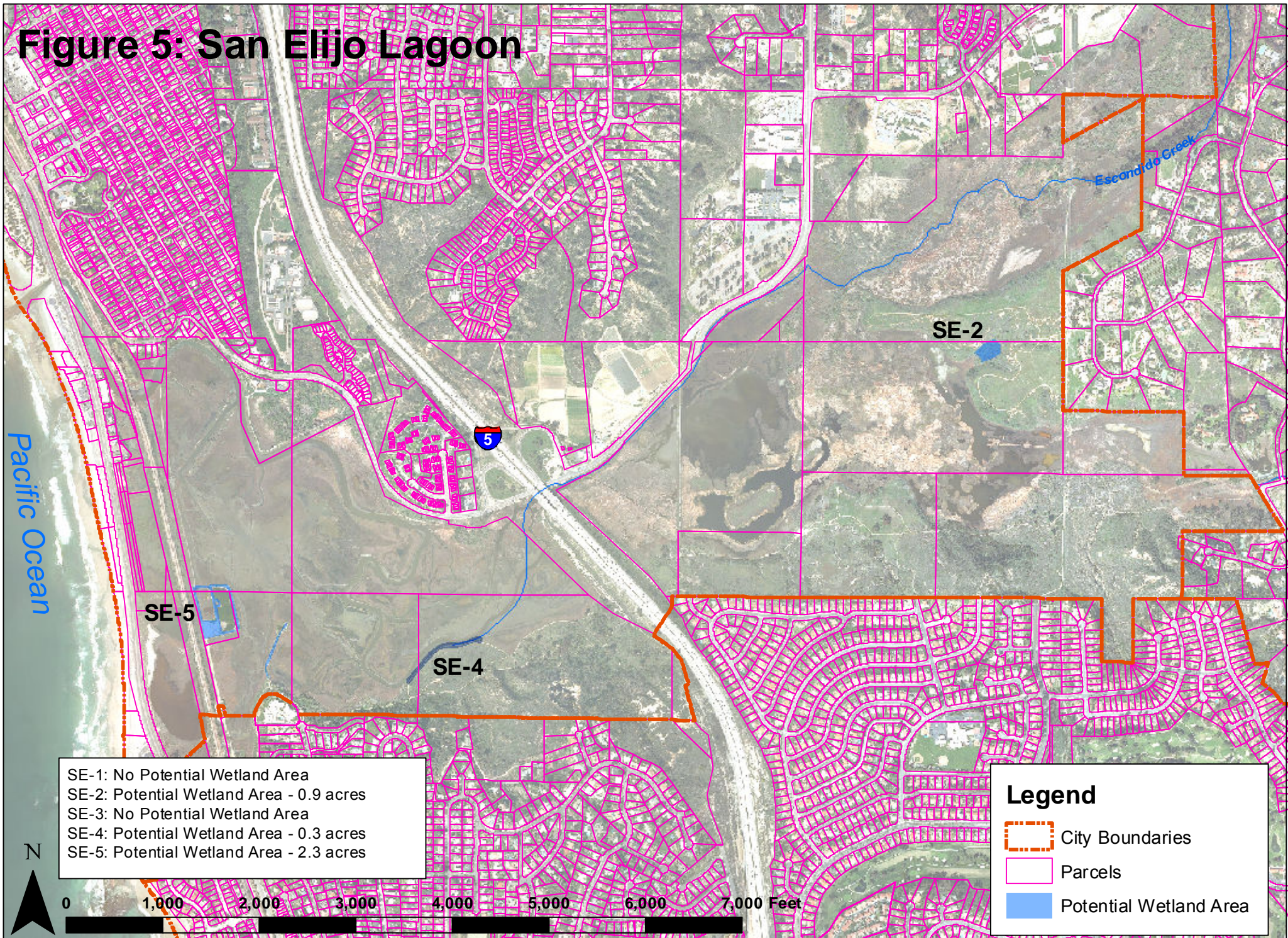
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

San Elijo Lagoon is currently being studied for large-scale restoration with funding from SANDAG, Caltrans and the California State Coastal Conservancy. Restoration alternatives have been developed ranging from preservation of existing conditions to relocation of the lagoon inlet coupled with extensive grading of the lagoon basins. In addition, replacement of the existing Pacific Coast Highway and MTS railroad bridges is being considered. These alternatives are being analyzed with preparation of a project EIR/EIS scheduled to begin in 2011. The project focus is on restoring wetlands through increased tidal prism, not on “conventional restoration” as defined by WRA and AECOM (2009). Using the definitions of WRA and AECOM (2009), this type of restoration would be considered “hydrodynamic restoration”. In the case of San Elijo Lagoon, most of the existing habitat within the lagoon boundaries is currently considered jurisdictional wetland, although the current tidal inlet results in a muted tidal prism within the lagoon. Restoration alternatives may increase tidal prism within the lagoon resulting in a more functional coastal wetland system; however, the restoration would not create wetlands from uplands, but would convert muted wetlands to fully tidal wetlands. Thus, the assignment of restoration credits is unclear and has not yet been determined by the stakeholder agencies. Regardless of restoration credits, conversion of one wetland type to another is not appropriate for Poseidon’s mitigation requirements.

Given this large-scale planning process, there is little opportunity for conventional restoration at San Elijo Lagoon. WRA and AECOM (2009) identified three potential restoration sites within the lagoon with a combined area of 3.5 acres (Figure 5). All three sites were ranked either 1 or 2 in terms of restoration potential. These areas and their mitigation potential for Poseidon are presented below.

- **SE-2. SE-2 consists of 0.9 acre owned by the County of San Diego. This site was ranked 2 in terms of restoration potential, although WRA and AECOM acknowledged: “(The) majority of the site is 30’ above wetlands areas, minor opportunity in small draw, but vegetation is in good shape. Site access may be impeded by steep slopes...”.**

Figure 5: San Elijo Lagoon



Excavation of 30 feet of soil (or less excavation in an undefined “draw” at the base of the bluff) to create less than one acre of wetlands is considered prohibitively expensive for the restoration benefit obtained. Furthermore, the area is in the eastern end of San Elijo Lagoon in an area dominated by freshwater marsh that is isolated from tidal inundation. As this standard specifies restoration of tidal wetlands, it does not appear that this site can meet that standard. For this analysis, it is assumed that restoration of this site is infeasible and unavailable to Poseidon.

- **SE-4.** SE-4 includes 0.3 acre owned by the County of San Diego. This site was ranked 2 in terms of restoration potential. , although WRA and AECOM acknowledged that “(The) site consists of high quality transitional habitat with known occurrences of gnatcatcher nearby. Tidal action can be promoted with minimal excavation, but impacts to coastal sage scrub from excavation and access may occur.” Given the quality of upland habitat, is assumed that restoration is infeasible and that this site is unavailable to Poseidon.
- **SE-5.** SE-5 consists of 2.3 acres of land owned by the San Elijo Lagoon Conservancy. This site is an abandoned waste treatment plant. WRA and AECOM (2009) ranked this site as 1 in terms of restoration potential.

The current large-scale restoration planning effort has identified the majority of the former wastewater treatment plant area as a bird nesting site for the restored lagoon. It is estimated that approximately 0.75 acre would be available to Poseidon for restoration.

Given the existing habitat values and the planned use of the former wastewater treatment plant there is approximately 0.75 acres of potential restoration available to Poseidon at San Elijo Lagoon.

c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As presented above, restoration of a maximum of 3.5 acres identified by WRA and AECOM (2009) or the 0.75 acre determined above, do not meet this minimum standard.

d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

Site SE-2 meets this minimum standard. Site SE-3 occurs within upland transition habitat and would result in a loss of this habitat. Site SE-5 is surrounded by wetland and a buffer cannot be accommodated, as defined, from the upland edge of the transition area.

e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

There are potential contamination issues associated with the restoration of San Elijo Lagoon, especially at the site of the former wastewater treatment plant. As the majority of the former plant is planned as a bird nesting area, potential contamination would be controlled or remediated as part of the large-scale restoration effort.

- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The majority of the lagoon is owned by the State of California and the County of San Diego (WRA and AECOM 2009). Although there is very little potential area for restoration at San Elijo Lagoon, any restoration would require agreements with the state and county to guarantee preservation of the site in perpetuity

- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The majority of San Elijo Lagoon is owned by the State of California and the County of San Diego who would be required to provide management of any restored wetlands and to protect its ecological value in perpetuity.

- h. Does not result in a net loss of existing wetlands;

Although there is minimal area available at San Elijo Lagoon for conventional wetland restoration, there would not be a net loss of existing wetlands associated with restoration.

- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

The WRA and AECOM (2009) identified four special status wildlife species at San Elijo Lagoon and assumed their populations to be extant. These included the light-footed clapper rail, Belding's savannah sparrow, California least tern and the state listed threatened and fully-protected California black rail (*Laterallus jamaicensis coturniculus*), although most wetland biologists consider the black rail to be extinct. No state or federal listed endangered plant species were identified. Site-specific surveys would be required to determine presence/absence of any endangered species and any impacts associated with restoration activities.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum of 3.5 acres and a minimum of 0.75 acre would provide minimal overall ecosystem benefits. Restoration of the parcels identified by WRA and AECOM (2009) could impact existing transition areas and the requirements of minimum buffers would eliminate some potentially restorable areas. The small area identified for restoration would not and cannot maximize upland buffer habitat or significantly increase local ecosystem diversity.

b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The maximum of 3.5 acres and minimum of 0.75 acre identified for potential restoration would not provide substantial habitat for fish and would impact sensitive upland resources.

c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

Site SE-2 may meet this minimum standard. Site SE-3 occurs within upland transition habitat and would result in a loss of this habitat. Site SE-5 is surrounded by wetland and a buffer cannot be accommodated, as defined, from the upland edge of the transition area.

d. Provides maximum upland transition areas (in addition to buffer zones);

Although the potential restoration sites identified by WRA and AECOM (2009) are only conceptual in nature, there is little opportunity for upland transition area except at SE-2.

e..Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

As stated above, SE-4 consists of high quality transition habitat that would be converted to wetland habitat. Impacts to wetlands at the three sites identified by WRA and AECOM (2009) would be minimal.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The selection of the 3.5 acres identified by WRA and AECOM (2009) reflect the need to mitigate for impacts associated with the proposed I-5 North Coast Corridor Project. The potential restoration is conceptual and does not include preliminary or advanced planning. As San Elijo Lagoon is being analyzed for large-scale hydrodynamic restoration there is little opportunity for Poseidon to mitigate at this site for impacts associated with the Carlsbad Desalination Plant.

g. Restoration design is that most likely to produce and support wetland-dependent resources;

As stated above, the areas identified for potential restoration are very conceptual and do not include preliminary design. Thus this objective cannot be evaluated for San Elijo Lagoon.

h. Provides rare or endangered species habitat;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Elijo Lagoon.

i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Elijo Lagoon.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

Restoration of a maximum of 3.5 acres or a minimum of 0.75 acre identified above would result in a minimal increase in the aggregate acreage of wetland in the Southern California Bight.

k. Requires minimum maintenance;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Elijo Lagoon.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

As no plans have been developed for restoration of the maximum 3.5 acres of potential restoration, and the proposed conventional restoration would require acquisition and implementation of protection agreements, it is unlikely that any project in San Elijo Lagoon can be accomplished in a timely manner when compared to other sites that have undergone more detailed feasibility analyses.

m. Site(s) in proximity to the Carlsbad desalination facility.

San Elijo Lagoon is located approximately 20 miles south of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

SAN DIEGUITO LAGOON

3.1 Minimum Standards – Restoration of San Dieguito Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of San Dieguito Lagoon satisfies the requirement that the mitigation site be located within the southern California Bight.

- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

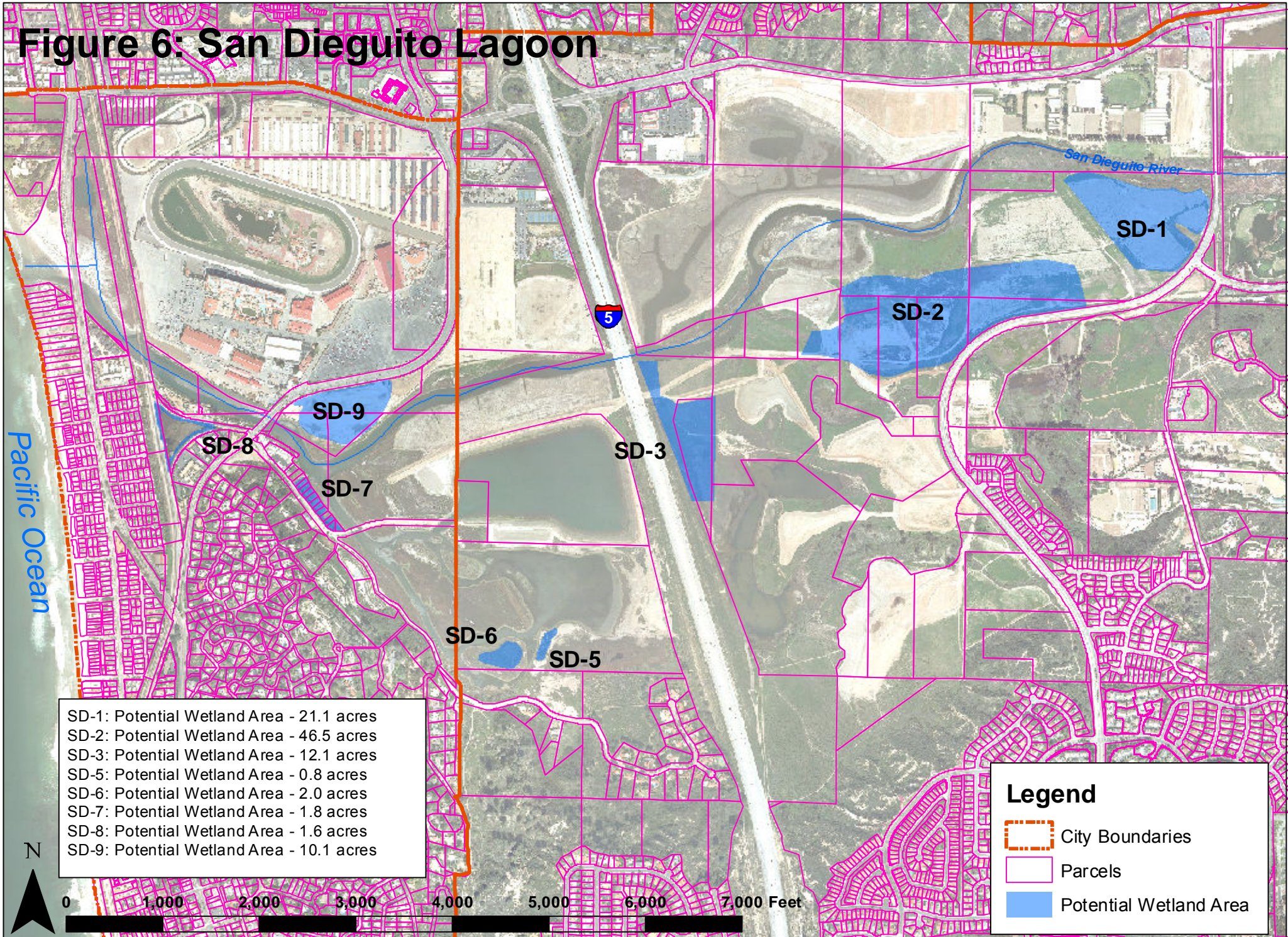
San Dieguito Lagoon is currently undergoing a large-scale wetland restoration project funded by Southern California Edison (SCE) as mitigation for impacts associated with the operation of the San Onofre Nuclear Generating Station (SONGS). The restoration includes 115 acres of tidal wetlands and maintenance in perpetuity of the mouth of the inlet for which SCE received 35 acres of wetland restoration credit. Despite this large-scale restoration project, San Dieguito Lagoon offers substantial additional opportunities for “conventional restoration” as defined by WRA and AECOM (2009). Conventional restoration includes creation of wetland in upland habitats and/or restoration of historic wetland areas that have been filled. This type of restoration typically involves the removal of fill materials and/or restoration of wetland hydrology to sites that are currently uplands.

In their assessment of potential coastal wetland restoration sites for the proposed I-5 North Coast Corridor Project, WRA and AECOM (2009) identified a nine separate areas totaling 96 acres of potential conventional restoration at San Dieguito Lagoon (Figure 6). Of the 96 total acres, 73.8 acres were determined to have high restoration potential (mitigation potential scores of 1 or 2 on a scale of 1-5 with 1 being the highest). These opportunities consisted of upland areas along the banks of the San Dieguito River and within the CDFG Ecological Reserve in the southwestern portion of the lagoon. These areas and their mitigation potential for Poseidon are presented below.

SD-1. SD-1 consists of 21.1 acres located on the eastern portion of the former Boudreau property immediately west of El Camino Real on lands owned by the San Dieguito River Park Joint Powers Authority (JPA). SD-1 was determined to have a mitigation potential of 1 (WRA and AECOM 2009). The JPA has entered into a Memorandum of Understanding with Caltrans and SANDAG to restore wetland and upland habitats on this parcel. Thus, it is not available at this time for Poseidon’s mitigation requirements.

SD-2. SD-2 is located west of SD-1 on lands owned by the JPA. It consists of approximately 46.5 acres of former agricultural land. SD-2 was determined to have a mitigation potential of 1 (WRA and AECOM 2009). Like SD-1, the JPA has entered into a Memorandum of Understanding with Caltrans and SANDAG to restore wetland and

Figure 6: San Dieguito Lagoon



upland habitats on this parcel. Thus, it is not available at this time for Poseidon's mitigation requirements.

SD-3. SD-3 consists of 12.1 acres located immediately east of Interstate-5 (I-5) south of the San Dieguito River. The land is owned by the 22nd Agricultural District and the City of San Diego (M. Josselyn, pers. comm.). This parcel was originally included in Southern California Edison's San Dieguito Lagoon Restoration, currently under construction. SD-3 was determined to have a restoration potential of 3 (WRA and AECOM 2009). The location of this site immediately adjacent to I-5 introduces uncertainty regarding potential impacts from the widening of I-5 as proposed by the I-5 North Coast Corridor Project. CCC requirements of a minimum buffer of 100 feet and a preferred buffer of 300 feet would reduce the area available for restoration. This area is owned by the 22nd Agricultural District and the City of San Diego who have indicated their intent to use it for mitigation for their purposes. Therefore, SD-3 is unavailable to Poseidon for their mitigation requirements.

SD-4. SD-4 was rejected by WRA and AECOM (2009) as a mitigation site as it is situated in the floodplain of the San Dieguito River and provides protection for the SCE restoration.

SD-5 and SD-6. These parcels are located on the CDFG Ecological reserve lands west of I-5 and south of the San Dieguito River. SD-5 consists of 0.8 acre and SD-6 consists of 2 acres. These areas are upland disposal sites for previous restoration activities, commonly referred to as the "Fishhook" restoration and occur adjacent to natural and restored wetland habitats. SD-5 is ranked 1 and SD-6 is ranked 2 in terms of restoration potential (WRA and AECOM 2009). Access to both areas would be difficult and would likely result in impacts to existing wetlands requiring additional mitigation and reducing mitigation credit for these sites. SD-6 is located on an island and would require construction of an access bridge or access by water-based equipment. Although it is unlikely that a total of 2.8 acres could be credited toward mitigation, these areas are available to Poseidon for mitigation.

SD-7. SD-7 is located northeast and immediately adjacent to San Dieguito Racetrack View Drive. SD-7 is 1.8 acres in size consisting of 16 small parcels owned by five different entities, both public and private. Although WRA and AECOM (2009) rank the mitigation potential for this site as high (1), the report acknowledges that water lines buried within this parcel may make restoration difficult. Although restoration of this site would require acquisition of 16 parcels and would net a maximum of 1.8 acres, SD-7 is available to Poseidon for mitigation.

SD-8. SD-8 is located in a triangle of land bounded by the Metropolitan Transit System (MTS) rail line to the west, the San Dieguito River to the north and private parcels along Jimmy Durante Boulevard to the west. The WRA and AECOM (2009) report states that this site is mostly existing wetlands with only the edges available to create "a slightly larger wetland area." of approximately 1.6 acres. WRA and AECOM (2009) rank the mitigation potential of this site as 1; however, they acknowledge that the site is owned by MTS which may use it for their mitigation needs. Thus, its availability to Poseidon is unknown.

SD-9. SD-9 consists of a “temporary” parking lot for the San Diego County Fairgrounds located south of Jimmy Durante Boulevard and north of the San Dieguito River on lands owned by the 22nd Agricultural District. The site consists of 10.1 acres and was ranked moderate in terms of mitigation potential (3) by WRA an AECOM (2209). This parking lot has been a source of contention among various state agencies for many years. At this time, there is no indication that the 22nd Agricultural District would make this parcel available to Poseidon for mitigation.

In summary, there is a maximum of 4.6 acres (SD-5, SD-6 and SD-7) that may be available to Poseidon for conventional restoration at San Dieguito Lagoon. These parcels are constrained in the form of utilities and current ownership.

- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As demonstrated above, restoration of a maximum of 4.6 acres, with a potential reduction of that maximum due to impacts associated with access, does not meet this minimum standard.

- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

Of the sites available to Poseidon, only sites SD-5 and SD-6 totaling a maximum restoration area of 2.8 acres would satisfy the minimum buffer requirement of 100 feet. All other sites within San Dieguito Lagoon abut roads and development. Restoration of SD-9 could be configured to provide a minimum 100-ft buffer; however, that would substantially reduce the 10.1 acres available.

- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

The potential for contamination at the sites available to Poseidon for mitigation is unknown.

- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The maximum 4.6 acres of restoration available to Poseidon at San Dieguito Lagoon are located within lands owned by the State of California and private entities. Prior to any restoration at San Dieguito Lagoon, lands would have to be acquired and agreements adopted to guarantee preservation of the site in perpetuity.

- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The majority of San Dieguito Lagoon is owned by public agencies, such as CDFG and the JPA, who would be required to provide management of any restored wetlands and to protect its ecological value in perpetuity. Thus, there exist feasible methods to accomplish this goal.

- h. Does not result in a net loss of existing wetlands;

Restoration of the maximum 4.6 acres available to Poseidon at San Dieguito Lagoon would require access to isolated parcels that could result in additional impacts to existing wetlands requiring additional mitigation. Thus, while restoration of these parcels may not result in a net loss of existing wetlands, it is unlikely that the restoration of the maximum of 4.6 acres would be fully credited as mitigation for impacts associated with the Carlsbad desalination Project.

- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

San Dieguito Lagoon and San Dieguito River wetland habitats have been documented to support breeding populations of the state listed endangered Belding's savannah sparrow and the state and federal listed endangered light-footed clapper rail. Without site-specific focused surveys, potential impacts to sensitive wildlife species from restoration activities cannot be determined at this time. There are no state or federal endangered plant species reported from the lagoon (WRA and AECOM 2009).

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum of 4.6 acres would provide minimal overall ecosystem benefits. Access would likely impact existing wetlands, requiring additional mitigation and reducing credit for restoration. Restoration to coastal salt marsh could provide regionally scarce habitat. Restoration to open water would not provide regionally scarce habitat but could enhance downstream fish values. The small area identified for restoration would not include upland buffer habitat or significantly increase local ecosystem diversity.

- b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The restoration of a maximum 4.6 acres identified at San Dieguito Lagoon is conceptual only and lacks preliminary design. Assuming that the sites would be restored to coastal salt marsh would not provide substantial fish habitat. Assuming that the sites were restored to open water would result in an increase in potential increase in fish habitat; however, restoration to open water would reduce the area for restoration to wetland habitat.

- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

Of the sites available to Poseidon, only sites SD-5 and SD-6 would meet this objective.

- d. Provides maximum upland transition areas (in addition to buffer zones);

None of the sites available to Poseidon could accommodate upland transition areas without rendering wetland restoration infeasible.

- e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

As stated above, restoration of SD-6 would require construction of an access road and could require construction of an access bridge which would impact existing wetlands. Restoration of SD-5 would require construction of an access road. Both actions would require mitigation which would reduce or negate any benefit to the overall system. Restoration of SD-7 could be accomplished without impacting sensitive habitats.

- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The selection of the potential restoration sites at San Dieguito Lagoon identified by WRA and AECOM (2009) reflect the need to mitigate for impacts associated with the proposed I-5 North Coast Corridor Project and do not consider site-specific restoration goals. The potential restoration is conceptual and does not include preliminary or advanced planning. WRA and AECOM 2009 cite site-specific restoration goals for San Dieguito Lagoon as consisting of restoration of public lands held by the JPA. As stated previously, those lands are not available to Poseidon for restoration.

- g. Restoration design is that most likely to produce and support wetland-dependent resources;

The areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Dieguito Lagoon.

- h. Provides rare or endangered species habitat;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Dieguito Lagoon.

i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Dieguito Lagoon.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

While it is possible that the maximum of 4.6 acres identified for restoration would result in a slight increase in the aggregate acreage of wetland in the Southern California Bight, it is unlikely that a net of 4.6 acres would result from restoration efforts. Thus, implementation of this restoration would result in a minimal increase in the region's wetland habitats.

k. Requires minimum maintenance;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for San Dieguito Lagoon.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

As no plans have been developed for land acquisition and restoration of the 4.6 acres of restoration available to Poseidon, it is unlikely that any project in San Dieguito Lagoon can be accomplished in a timely manner when compared to other sites that have undergone feasibility analyses and occur on public property.

m. Site(s) in proximity to the Carlsbad desalination facility.

San Dieguito Lagoon is located approximately 25 miles south of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

LOS PEÑASQUITOS LAGOON

3.1 Minimum Standards – Restoration of Los Peñasquitos Lagoon

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of Los Peñasquitos Lagoon satisfies the requirement that the mitigation site be located within the southern California Bight.

- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

Los Peñasquitos Lagoon offers very limited opportunity for “conventional restoration” as defined by WRA and AECOM (2009). Conventional restoration includes creation of wetland in upland habitats and/or restoration of historic wetland areas that have been filled. This type of restoration typically involves the removal of fill materials and/or restoration of wetland hydrology to sites that are currently uplands.

In their assessment of potential coastal wetland restoration sites for the proposed I-5 North Coast Corridor Project, WRA and AECOM (2009) identified a total of 8.6 acres of potential conventional restoration at Los Peñasquitos Lagoon (Figure 7). These opportunities consisted of removal of existing berms and the conversion of low-quality upland or ruderal habitat in areas along the southern portion of the lagoon study area. The authors concluded:

”There is very limited opportunity for wetland creation with the Study Area, and those areas identified are far outside the existing tidal influence. Additionally, access to these areas is very limited and access trails would likely have to be cut, which would require mitigation for their temporary impact. Enhancement opportunities through the removal of invasive plant species may serve as more beneficial for the lagoon system; however, this approach will not generate any wetland mitigation credits.”

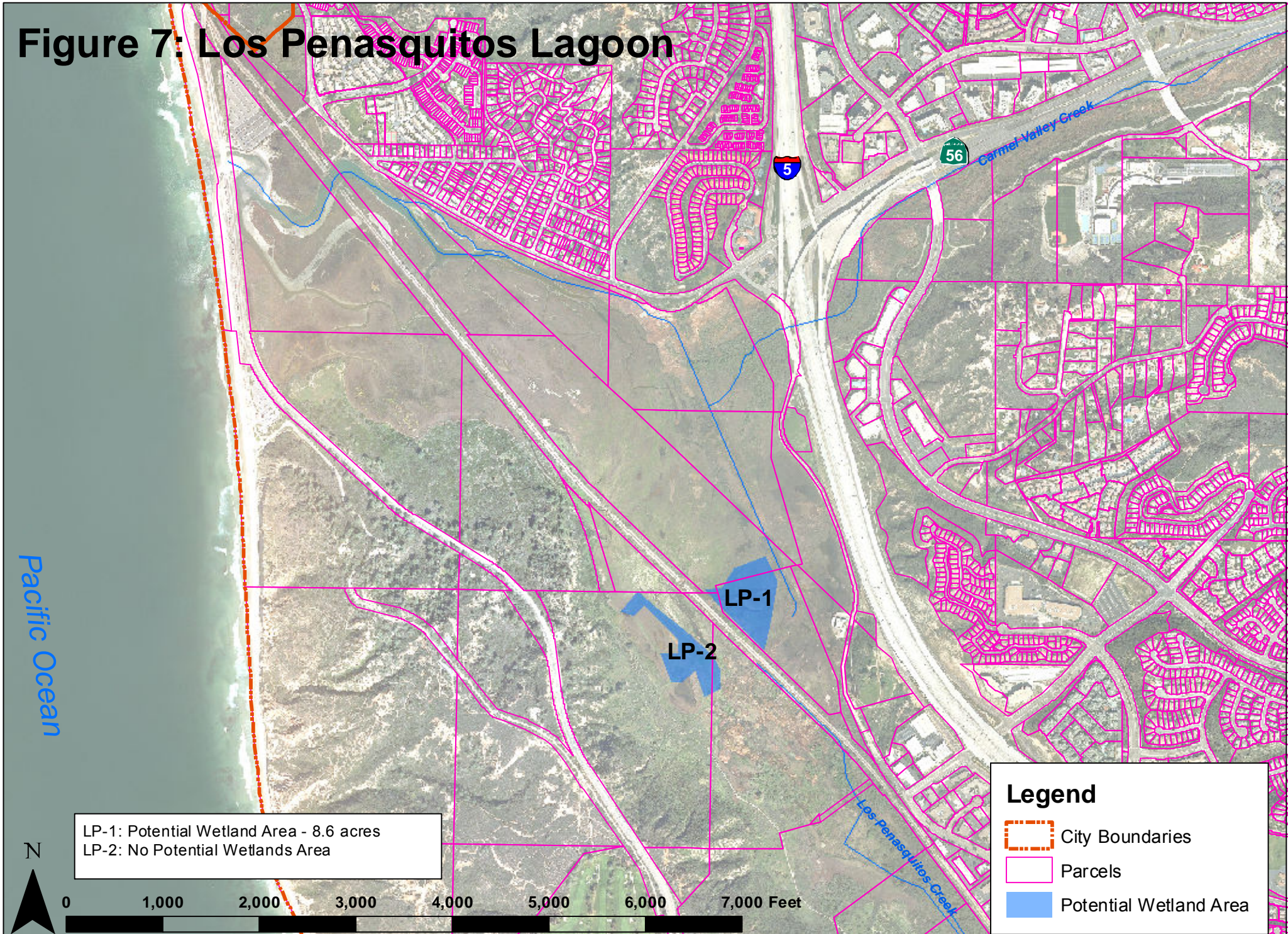
On a scale of 1-5 with 1 the highest, the potential mitigation sites at Los Peñasquitos Lagoon scored 4 (WRA and AECOM 2009)

- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As stated above, restoration of a maximum of 8.6 acres, with a potential reduction of that maximum due to impacts associated with access, does not meet this minimum standard.

- d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

Figure 7: Los Penasquitos Lagoon



LP-1: Potential Wetland Area - 8.6 acres
LP-2: No Potential Wetlands Area

Legend

- City Boundaries
- Parcels
- Potential Wetland Area

Pacific Ocean

N

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

The proposed restoration sites identified by WRA and AECOM (2009) at Los Peñasquitos Lagoon would satisfy the minimum buffer requirement of 100 feet; however, that buffer would be measured from the edge of restored wetland 100 feet into existing wetland.

- e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

There is no evidence provided in WRA and AECOM (2009) or the Los Peñasquitos Lagoon Enhancement Plan and Program (Los Peñasquitos Lagoon Foundation and State Coastal Conservancy 1985) that there are site contamination problems at Los Peñasquitos Lagoon.

- f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The maximum 8.6 acres of restoration identified within Los Peñasquitos Lagoon (WRA and AECOM 2009) are located within lands owned by the State of California (Torrey Pines State Reserve). Prior to any restoration at Los Peñasquitos Lagoon, agreements with the State of California would have to be adopted to guarantee preservation of the site in perpetuity.

- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

Los Peñasquitos Lagoon is managed by California State Parks who would be required to provide management of any restored wetlands and to protect its ecological value in perpetuity.

- h. Does not result in a net loss of existing wetlands;

Restoration of the maximum 8.6 acres identified at Los Peñasquitos Lagoon would require access to isolated parcels that could result in additional impacts to existing wetlands requiring additional mitigation for those impacts. Thus, while restoration of these parcels may not result in a net loss of existing wetlands, it is unlikely that the restoration of the maximum of 8.6 acres would be fully credited as mitigation for impacts associated with the Carlsbad desalination Project.

- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

The WRA and AECOM (2009) study does not identify any endangered plant or animal species in the immediate vicinity of the proposed maximum 8.6 acres of potential restoration in the lagoon. Site-specific surveys would be required to determine presence/absence of any endangered species and any impacts associated with restoration activities.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of a maximum of 8.6 acres located far from existing tidal action would provide minimal overall ecosystem benefits. Access would likely impact existing wetlands and extending tidal channels to the restored sites in order to provide tidal action and enhance fisheries values would result in additional impacts to existing wetlands. The area identified for restoration occurs in association with the freshwater emergent wetlands that dominate the southern portion of Los Peñasquitos Lagoon. Freshwater wetlands are not regionally scarce compared to salt marsh or other estuarine habitats. Connecting restored areas to tidal channels would result in the conversion of freshwater marsh habitat to brackish or salt marsh habitat. The small area identified for restoration would not include upland buffer habitat or significantly increase local ecosystem diversity.

- b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The maximum of 8.6 acres identified for potential restoration would not provide substantial habitat for fish due to the isolated nature of the restoration sites. The potential restoration sites occur far from existing tidal action in an area that is mapped as freshwater marsh habitat. Restoration of the isolated parcels without tidal connection would not provide fish habitat. Extending existing tidal channels to the restoration sites would impact existing wetlands requiring additional mitigation and would not provide substantial fish habitat as the existing terminal tidal channels of the lagoon are choked with sediment and do not support robust fish populations.

- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

The 8.6 acres identified for potential restoration are located in the southern portion of the lagoon and provide buffers of greater than 300 feet in all directions; however, that buffer would be measured from the edge of restored wetland 300 feet into existing wetland.

- d. Provides maximum upland transition areas (in addition to buffer zones);

Although the potential restoration sites identified by WRA and AECOM (2009) are only conceptual in nature, their location within existing freshwater marsh habitat precludes creation of upland transition areas without significant impacts to existing wetland habitats.

- e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

As stated above, restoration of the 8.6 acres would require construction of access roads which would impact existing wetlands. Extension of tidal channel to the restoration sites would result in significant impacts to existing wetlands. Both actions would require mitigation which would reduce or negate any benefit to the overall system.

- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The selection of the 8.6 acres identified by WRA and AECOM (2009) reflect the need to mitigate for impacts associated with the proposed I-5 North Coast Corridor Project and do not consider site-specific restoration goals. The potential restoration is conceptual and does not include preliminary or advanced planning. WRA and AECOM cite site-specific restoration goals for Los Peñasquitos Lagoon as consisting of reduction of sediment to the system, curtailing freshwater input, and maintaining the opening of the lagoon mouth. Restoration of the 8.6 acres identified would not substantially contribute to these restoration goals.

- g. Restoration design is that most likely to produce and support wetland-dependent resources;

As stated above, the areas identified for potential restoration are very conceptual and do not include preliminary design. Thus this objective cannot be evaluated for Los Peñasquitos Lagoon.

- h. Provides rare or endangered species habitat;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Los Peñasquitos Lagoon.

- i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Los Peñasquitos Lagoon.

- j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

While it is possible that the maximum of 8.6 acres identified for restoration would result in a slight increase in the aggregate acreage of wetland in the Southern California Bight, it is unlikely that a net of 8.6 acres would result from restoration efforts. Thus, implementation of this restoration would result in a minor increase in the region's wetland habitats.

k. Requires minimum maintenance;

As stated above, the areas identified for potential restoration are conceptual only and do not include preliminary design. Thus this objective cannot be evaluated for Los Peñasquitos Lagoon.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

As no plans have been developed for restoration of the 8.6 acres of maximum potential restoration it is unlikely that any project in Los Peñasquitos Lagoon can be accomplished in a timely manner when compared to other sites that have undergone feasibility analyses.

m. Site(s) in proximity to the Carlsbad desalination facility.

Los Peñasquitos Lagoon is located approximately 30 miles south of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

TIJUANA ESTUARY

3.1 Minimum Standards – Restoration of Tijuana Estuary

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of Tijuana Estuary satisfies the requirement that the mitigation site be located within the southern California Bight.

- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

A large-scale restoration plan was developed for Tijuana Estuary in 2008 (Tijuana Estuary – Friendship Marsh Restoration Feasibility and Design Study, Tierra Environmental Services 2008). The feasibility and design study included approximately 250-acres of conventional restoration in the south arm of the estuary on lands owned by California State Parks. The study proposed that restoration be phased over time due to the size of the proposed restoration. Five phases were identified as presented below. Each phase could be constructed independently of other phases. Phase 3 (75 acres) is proposed to provide area sufficient to meet Poseidon’s mitigation requirements (Figure 8).

Tijuana Estuary Restoration Project - Proposed Phasing and Habitat Distribution, March 2008.

Phase	Habitat (acres)					Total
	Open Water	Mudflat	Low Salt Marsh	Mid-High Salt Marsh	Transition	
1	22.9	6.1	4.1	3.1	2.5	38.7
2	7.7	6.1	10.8	12.7	0	37.3
3	13.0	18.3	23.7	19.9	0	74.9
4	5.5	11.5	5.5	9.2	0	31.7
5	12.0	18.5	15.9	16.3	4.6	67.3
total	61.1	60.5	60.0	61.2	7.1	250

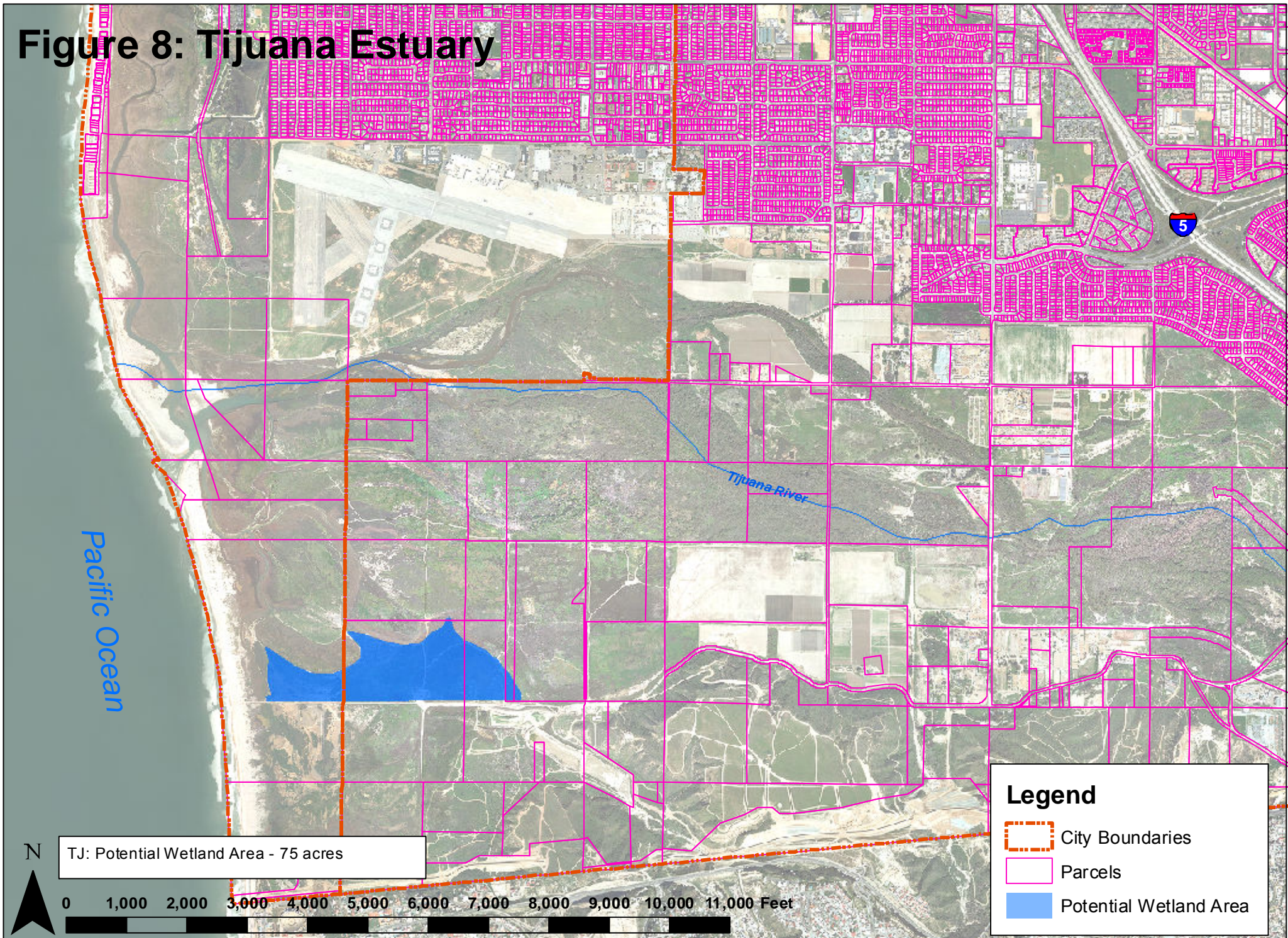
The proposed restoration includes extensive intertidal and subtidal areas and thus complies with this minimum standard.

WRA and AECOM (2009) examined restoration potential for north San Diego County Lagoons only. Thus, the feasibility and design study represents the most current available assessment of potential restoration at Tijuana Estuary.

- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

As presented above, the feasibility and design study proposes restoration of 250 acres of habitat similar to the affected habitats in Agua Hedionda Lagoon. Each proposed phase restores a minimum of 37 acres and two phases exceed 66 acres.

Figure 8: Tijuana Estuary



d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

The proposed restoration is located within the boundaries of Border Field State Park in the southwestern corner of the U.S. Monument Road, the access road to Border Field State Park, defines the southern and eastern boundaries of the proposed restoration. As planned, transition zone habitat and high marsh would be restored up to Monument Road; however, final design could incorporate a minimum buffer of 100 feet as measured from the upland edge of the transition area.

e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

Subsurface soils analyses conducted for the feasibility and design study identified DDT and its derivatives in near-surface samples collected within the proposed restoration footprint. These soils would have to be disposed in a landfill designated for contaminated soils. It is anticipated that this could be accomplished successfully and would not hinder restoration.

f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The project is located within the boundaries of Border Field State Park owned and managed by California State Parks. California State Parks and the California State Coastal Conservancy have partnered on the restoration of the estuary. California State parks would be responsible for guaranteeing the protection of restored areas in perpetuity.

g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

California State Parks has the authority to provide long-term protection of wetland values of the portion of Tijuana Estuary that occurs within its boundaries.

h. Does not result in a net loss of existing wetlands;

Although the project as proposed would incur impacts to degraded wetland habitats, the project overall results in a net increase in wetland habitats.

i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

The project would result in impacts to occupied Belding's savannah sparrow habitat; however, those impacts are considered mitigable. There are no state or federal listed endangered plant species located within the project footprint.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

Restoration of 250 acres, including 61 acres of open water/subtidal habitat, 60.5 acres of mudflat, 60 acres of low marsh, 61 acres of mid-high salt marsh and 7 acres of transition habitat would provide maximum ecosystem benefits, provide enhancement of downstream fish values, provide regionally scarce habitat and increase local ecosystem diversity.

Restoration of 66 acres as required of Poseidon would also provide substantial ecosystem benefits, including buffers, fish values, and regionally scarce habitat.

- b. Provides substantial fish habitat compatible with other wetland values at the site(s);

Restoration of the required 66 acres could include restored open water/ subtidal habitat that would provide substantial habitat for fish compatible with other wetland values.

- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

As presented above, the project is located within the boundaries of Border Field State Park and can accommodate a minimum buffer of 100 feet and in most cases, buffers well exceeding 300 feet; however, not all buffers can be measured from the upland edge of the transition area as transition area is rare or lacking in many portions of the site.

- d. Provides maximum upland transition areas (in addition to buffer zones);

The feasibility and design study focused on restoration of wetland habitats. Transition habitats comprise approximately 7 acres of the 250-acre restoration. Final restoration plans for the required 66 acres required of Poseidon could accommodate more transition area. There is considerable existing upland habitat in the Tijuana River Valley in general and specifically in Border Field State Park.

- e..Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

The restoration plan was designed to minimize impacts to existing functioning wetlands and other sensitive habitats. However, each proposed phase impacts some degraded wetland habitats. The CCC's interpretation of "functioning" wetlands will determine the potential for this site to serve as mitigation for Poseidon.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The feasibility and design study is the site-specific restoration plan for Tijuana Estuary and was developed to comply with regional wetland restoration goals.

g. Restoration design is that most likely to produce and support wetland-dependent resources;

The feasibility and design study was designed to maximize support of wetland-dependent species.

h. Provides rare or endangered species habitat;

The feasibility and design study included specific goals for increasing the local populations of rare or endangered species, e.g., light-footed clapper rail and Belding's savannah sparrow.

i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, the feasibility and design study included specific goals for increasing the local populations of rare or endangered species, e.g., light-footed clapper rail and Belding's savannah sparrow.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

Restoration of a maximum of 250 acres of wetland habitats would result in an increase in the aggregate acreage of wetland in the Southern California Bight.

k. Requires minimum maintenance;

The feasibility and design study was designed to minimize maintenance. In order to minimize sedimentation to the restored site and the potential need for sediment removal, a protective berm and weir were designed at the northern end of the project to protect against sediment borne by the Tijuana River during flood events, including the 100-year flood event.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

A phase or phases of the proposed restoration could be accomplished in a reasonably timely fashion given the level of planning in the feasibility and design study.

m. Site(s) in proximity to the Carlsbad desalination facility.

Tijuana Estuary is located approximately 50 miles south of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant

OTAY RIVER FLOODPLAIN

3.1 Minimum Standards

The wetland restoration project site(s) and preliminary plan(s) must meet the following minimum standards:

- a. Location within Southern California Bight;

The selection of the Otay River Floodplain Subarea of the South San Diego Bay Unit of the San Diego Bay Wildlife Refuge satisfies the requirement that the mitigation site be located within the southern California bight.

- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;

The Otay River Floodplain Subarea has been proposed for restoration by the U.S. Fish and Wildlife Service (USFWS: San Diego Bay National Wildlife Refuge, Final Comprehensive Conservation Plan [CCP] and EIS 2006). The CCP/EIS identified an area of approximately 105 acres that could be restored, including wetlands, uplands and transition habitats (Figure 9). The USFWS proposed two alternative restoration scenarios for the Otay River Floodplain in its 2006 CCP/EIS.

- **Option 1. Restoration Option 1 focused on a balance between restored wetland and restored upland habitats. Under this option, approximately 60 acres of upland habitat would be restored, 60 acres would be restored to intertidal salt marsh and mudflats, and 20 acres would be restored to freshwater wetlands.**
- **Option 2. Restoration Option 2 would restore approximately 90 acres of intertidal salt marsh and mudflat, 35 acres of native uplands and 15 acres of freshwater wetlands.**

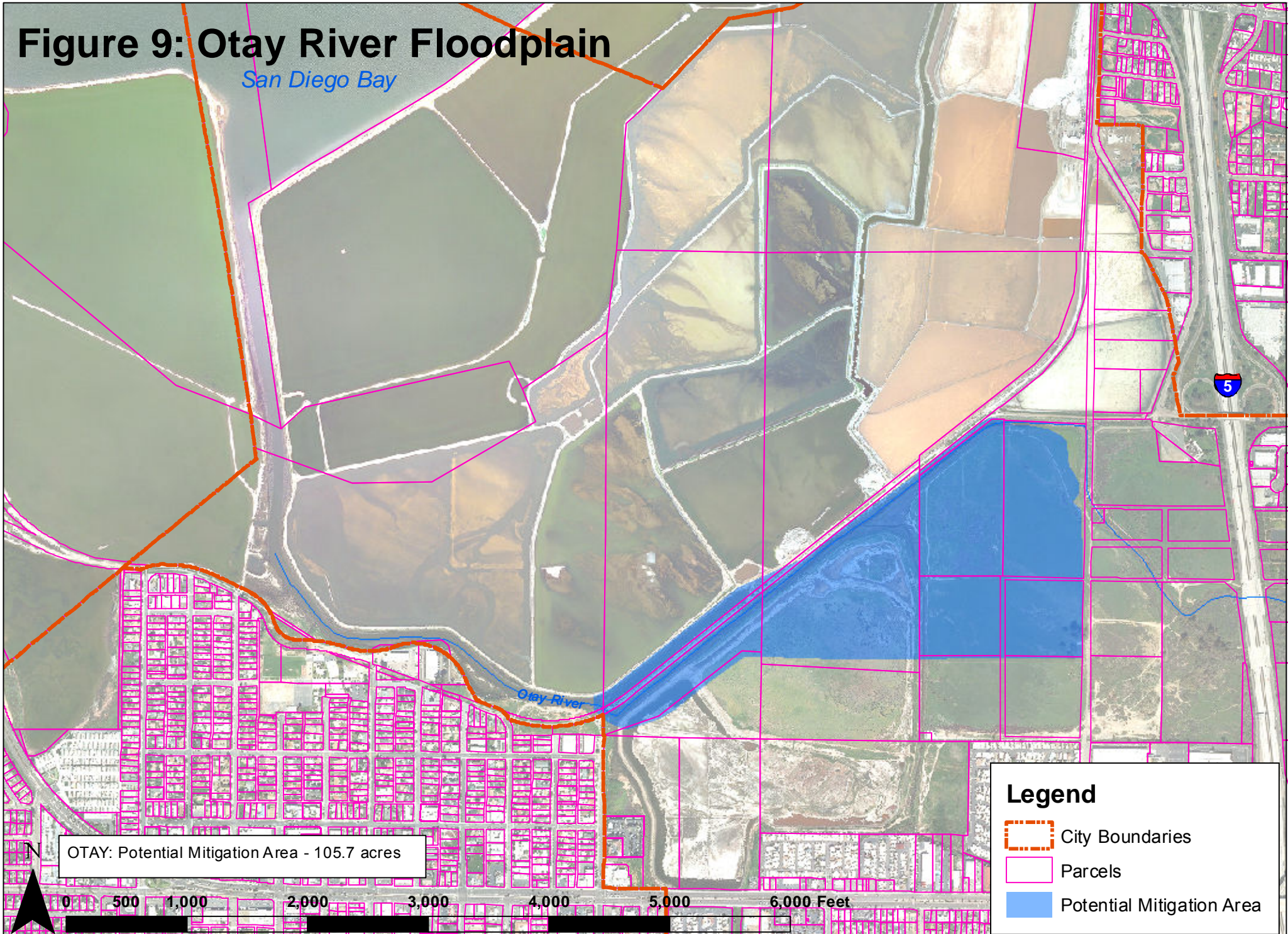
Under both USFWS options, intertidal wetlands would be comprised of approximately 50% mudflat, 30% cordgrass (low marsh) and 20% pickleweed (mid-high marsh). Creation of subtidal habitat is also feasible, requiring modification of the conceptual design presented in the CCP/EIS.

Historic maps indicate that the area proposed for restoration was formerly intertidal mudflat and salt marsh that has been filled for agriculture and salt production. Thus, the potential for successful restoration is high.

- c. Creates or substantially restores a minimum of 37 acres and up to at least 66 acres [all locations] acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;




Figure 9: Otay River Floodplain

San Diego Bay



OTAY: Potential Mitigation Area - 105.7 acres

Legend

-  City Boundaries
-  Parcels
-  Potential Mitigation Area

0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet



The requirement of restoration of up to 66 acres of habitat similar to that affected at Aqua Hedionda Lagoon can be accomplished at the Otay River Floodplain Subarea. Option 2 presented in the CCP/EIS included more than 66 acres of tidally influenced wetlands.

d. Provides a buffer zone of a size adequate to ensure protection of wetland values, and at least 100 feet wide, as measured from the upland edge of the transition area.

The proposed restoration of the Otay River Floodplain Subarea can provide buffer zones in excess of 100-feet in all directions.

e. Any existing site contamination problems would be controlled or remediated and would not hinder restoration;

A limited field sampling program was conducted in 1989 that included collection of three surface soil (0.5 - 1 feet below ground surface) samples - two from agricultural fields and one from the former sewage treatment plant oxidation ponds formerly located on-site. All three soil samples were analyzed for chlorinated pesticides while the oxidation pond sample included additional analysis of selected metals.

Dichlorodiphenyltrichloroethane (DDT) and metabolites (dichlorodiphenyldichloroethylene [DDE] and dichlorodiphenyldichloroethane [DDD]) and toxaphene were detected in the samples collected from the agricultural fields. Concentrations of total DDT (including metabolites) were 2,200 parts-per-billion (ppb) and 4,050 ppb. Toxaphene was detected at 3,000 and 4,200 ppb. Arsenic, cadmium, chromium, copper, nickel, and lead were detected in the oxidation pond sample. Pesticides were not detected in the oxidation pond sample.

Additional surface soil testing was conducted in 1999 as part of the USFWS pre-acquisition activities. Organochlorine pesticide analyses were performed on 15 samples collected across the property. DDT and its metabolites were the primary pesticides detected. Detected concentrations of DDT ranged between 12 and 1,400 ppb. Detected concentrations of DDE ranged between 22 and 1,200 ppb. DDD was detected at concentrations between 8 and 1,100 ppb. Average detected concentrations for DDT, DDE, and DDD were 349, 503, and 413 ppb, respectively. Endrin aldehyde was the only other detected pesticide with a range of detected concentrations between 15 and 1,400 ppb.

The source of DDT is directly related to the historic use of this property for agricultural production, primarily tomatoes and other truck crops. A sewer treatment plant that operated within the Otay River floodplain between the mid 1950s and the early 1960s is considered the source of the various metals detected in some of soil samples.

On December 21, 2009, Poseidon conducted a screening level soil contaminants assessment in the project area. Four 15-foot-deep soil borings were collected in Pond 20a and four were collected in the former agricultural land adjacent to the Otay River. Only one sample, located near the Otay River, indicated the presence of DDT. Soils within and adjacent to Pond 20a showed little, if any, contamination. Thus, although former

agricultural activities have resulted in high levels of DDT and derivatives on a portion of the property, it appears that there are uncontaminated areas that may be suitable for restoration. Further soil testing will be needed to determine the horizontal extent of DDT contamination.

f. Site preservation is guaranteed in perpetuity (through appropriate public agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use;

The Otay River Floodplain Subarea of the South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge is owned by the California State Lands Commission and leased to the USFWS exclusively for restoration of coastal wetlands and associated uplands[Both agencies preserve and protect lands for the public. Prior to restoration at the Otay River Floodplain, agreements will be adopted to guarantee preservation of the site in perpetuity.

g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;

The San Diego Bay Wildlife Refuge is managed by the U.S. Fish and Wildlife Service. The USFWS will provide management of the restored wetlands to protect its ecological value in perpetuity.

h. Does not result in a net loss of existing wetlands; and

The proposed restoration entails the conversion of a former salt evaporation pond and former agricultural lands to intertidal salt marsh, mudflats and subtidal habitats. Only minimal impacts to existing wetlands will occur at the point of hydraulic connection to the Otay River. Thus, the project will not result in a net loss of existing wetlands.

i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

The CCP and EIS prepared for the project identified all endangered plant and animal species in the project location and the potential impacts associated from implementation of the preferred alternative. In general, the document presents the potential effects to endangered species associated with construction of the habitat restoration and the long-term effects of the habitat restoration. The document concludes that the potential for adverse effects to the Refuge's endangered and threatened species during restoration-related grading activities would be minimized by controlling the level of construction activity permitted in the vicinity of active nest areas, including restricting some activities to the non-breeding season; establishing construction boundaries that minimize impacts to native vegetation and sensitive habitat areas; and monitoring sensitive habitat areas during construction to assess actual disturbance levels and, where necessary, developing and implementing additional protective measures.

The long-term effects on threatened and endangered species of the restored habitats are considered beneficial.

3.2 Objectives

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;

The proposed restoration of the Otay River Floodplain Subarea entails the conversion of a former solar evaporation pond and former agricultural fields to intertidal salt marsh and mudflats and subtidal habitats. Intertidal salt marsh, intertidal mudflat, and subtidal habitat are regionally scarce habitats targeted for restoration/creation in the southern California Bight. Located just upstream of San Diego Bay, the fisheries of the bay would be considered the downstream fishery. The fisheries of South San Diego Bay are recognized as a valuable resource that will be enhanced by the restoration process. The extensive shallow water habitat and eelgrass beds of the South Bay provide important habitat for these and a variety of fish, including midwater, schooling fishes, such as northern anchovies, slough anchovies, and topsmelt. These species, in turn, represent a major forage resource for predatory fish and avian species. The warmer, hypersaline waters of the South Bay also offer shelter for a number of fish species commonly encountered further south in the Eastern Subtropical and Tropical Pacific. The south end of San Diego Bay also functions as an important nursery area for juvenile California halibut and young spotted and barred sand bass.

The American Bird Conservancy has designated the South San Diego Bay Unit as a Globally Important Bird Area due to the presence of globally significant populations nesting gull-billed terns, and continentally significant populations of surf scoters, Caspian terns and western snowy plovers. The entire southern end of San Diego Bay has been recognized as a Western Hemisphere Shorebird Reserve Network Site. The proposed restoration has been designed to preserve and enhance this biological diversity.

- b. Provides substantial fish habitat compatible with other wetland values at the site(s);

The conversion of the former evaporation pond and agricultural lands to intertidal salt marsh, mudflats and subtidal habitat will provide substantial fish habitat. The role of unvegetated tidal creeks and sloughs as breeding areas and nurseries for estuarine-dependent fishes has been well studied. The transient use of the intertidal salt marsh by species such as California killifish has likewise been demonstrated. These values will all be enhanced by the proposed project. Furthermore, the intertidal mudflats created by the project will provide breeding habitat for the goby species that are prevalent in Agua Hedionda Lagoon.

c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.

The Otay River Floodplain Subarea is located in an isolated corner of South San Diego Bay with buffers exceeding 100 feet in all directions.

d. Provides maximum upland transition areas (in addition to buffer zones);

The proposed restoration is in the initial planning stages; however, there is ample area for incorporating transition zone habitats into the final restoration plan. The conceptual restoration plan presented in the CCP/EIS includes on-site disposal of some excavated soils, pending soil contamination studies. The soil will be used to create upland and transitional habitats.

e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;

The proposed restoration entails the conversion of a former salt evaporation pond and former agricultural lands to intertidal salt marsh, mudflats and subtidal habitats. Only minimal impacts to existing wetlands will occur at the point of hydraulic connection to the Otay River. The former salt evaporation pond and agricultural lands do not contain functioning wetlands or other sensitive habitats. Thus, the project will not result in impacts to existing wetlands and other sensitive habitats.

f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;

The following goals provided the guiding principles for the South San Diego Bay Unit. They are consistent with USFWS Refuge purposes, National Wildlife Refuge System goals, the NWRS Improvement Act, USFWS policies, and international treaties. These goals apply to all of the management alternatives evaluated for this Refuge Unit.

Goal 1: Protect, manage, enhance, and restore open water, coastal wetlands, and native upland habitat to benefit the native fish, wildlife, and plant species supported within the South San Diego Bay Unit.

Goal 2: Support recovery and protection efforts for the federally and state listed threatened and endangered species and species of concern that occur within the South San Diego Bay Unit.

Goal 3: Provide high quality foraging, resting, and breeding habitat for colonial nesting seabirds, migratory shorebirds and waterfowl, and salt marsh-dependent species.

Goal 4: Provide opportunities for compatible wildlife-dependent recreation and interpretation that foster public appreciation of the unique natural and cultural

heritage of South San Diego Bay.

In addition, the CCP was prepared using the following documents as guidance:

- **All applicable USFWS threatened and endangered species recovery plans;**
- **Ecoregion Planning, as defined by the USFWS;**
- **Shorebird Conservation Planning, as defined by the U.S. Shorebird Conservation Plan;**
- **Waterbird Conservation, as defined by the North American Waterbird Conservation Plan;**
- **National Strategy for Coastal Restoration, as defined by Restore America’s Estuaries and the National Oceanic and Atmospheric Administration**
- **Marine Protected Areas, as defined by Executive Order 13158;**
- **California Wildlife: Conservation Challenges, California’s Wildlife Action Plan, as defined by the California department of Fish and Game; and,**
- **Regional restoration needs**

g. Restoration design is that most likely to produce and support wetland-dependent resources;

As stated above, the major goals of the proposed restoration is to protect, manage, enhance and restore open water, coastal wetlands and native upland to benefit native fish, wildlife and plant species supported within the refuge unit and to provide habitat for salt-marsh dependent species. The project has been designed to achieve the objective of producing and supporting wetland-dependent species.

h. Provides rare or endangered species habitat;

Goal 2, stated above, addresses the recovery and protection efforts for the federally and state listed threatened and endangered species and species of concern that occur within the South San Diego Bay Unit. The over-arching reason for the establishment of the South Bay unit was the preservation and recovery of threatened and endangered species, including the light-footed clapper rail, the California least tern and salt marsh bird’s beak. The preferred restoration plan provides a diverse assemblage of wetland habitats, including cordgrass-dominated salt marsh – the preferred nesting and foraging habitat of the light-footed clapper rail - fishery resources that support the California least tern, and shallow subtidal habitat that provides nursery grounds for California halibut.

i. Provides for restoration of reproductively isolated populations of native California species;

As stated above, one of the primary reasons for acquiring the South San Diego Bay Unit was to preserve and restore habitat for the endangered light-footed clapper rail. Although these birds can fly, they rarely do so and migrate locally usually by walking or, occasionally, swimming. Thus, a clapper rail population within South San Diego Bay is essentially isolated from other southern California populations. As stated previously, restoration of the South San Diego Bay Unit will benefit the clapper rail and other threatened and endangered species. The restoration provide the opportunity to establish a population or populations of the endangered salt marsh bird’s beak, a hemiparasitic plant that occurs in the upper elevations of salt marsh habitats. Populations of salt marsh bird’s beak at other southern California wetlands are reproductively isolated from one another.

j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;

The proposed restoration of the Otay River Floodplain Subarea will increase the aggregate acreage of tidal wetland in the Southern California Bight by approximately 66 acres, as required by the Coastal Commission and Regional Water Quality Control Board.

k. Requires minimum maintenance;

The proposed restoration of the former solar evaporation pond and former agricultural lands at the Otay River Floodplain Subarea would be accomplished by excavating to the elevation of adjacent intertidal habitats. There are no hard structures needed, such as jetties, as the site is not subject to coastal erosion or deposition by wave action. The Otay River is dammed upstream of the proposed restoration site, and does not convey a sediment load that would be potentially damaging to a subtidal- intertidal wetland. Thus, maintenance dredging is not anticipated. Once vegetation has become established, there is no anticipated need for planting or maintenance of exotic weed species.

l. Restoration project can be accomplished in a reasonably timely fashion; and,

It is anticipated that restoration of the Otay River Floodplain Subarea can be accomplished within the timeframes set forth in the MLMP.

m. Site(s) in proximity to the Carlsbad desalination facility.

The South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge is located approximately 35 miles south of Aqua Hedionda Lagoon, the site of the Carlsbad Desalination Plant.

Summary Table. Table 1 summarizes the compliance of each potential mitigation site with California Coastal Commission standards and objectives. The potential mitigation sites are arranged by their ability to meet the standards and objectives rather than geographically. When a site is considered noncompliant it is shaded. All standards and objectives for which no information was available (NA) were considered compliant.

Table 1. Summary of Compliance with CCC Standards and Objectives

	Loma Alta Lagoon	Buena Vista Lagoon	Aqua Hedionda Lagoon	Batiquitos Lagoon	San Elijo Lagoon	San Dieguito Lagoon	Los Peñasquitos Lagoon	Tijuana Estuary	Otay River
MINIMUM STANDARDS									
Location in S. California Bight	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Preserved in perpetuity?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Protected in perpetuity?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does not result in net loss of wetlands	Does not	Does not	Does not	Does not	Does not	Does not	Does not	Does not	Does not
Not hindered by contamination	NA	NA	NA	NA	Not hindered	NA	NA	Not hindered	Not Hindered
Does not Impact endangered species?	NA	May impact	NA	NA	NA	NA	NA	No, but mitigable	No
Provides minimum buffer of 100 feet	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Restores extensive intertidal and subtidal habitat	No	No	No	No	No	No	No	Yes	Yes
Restores minimum 37 to 66 acres similar to AHL	No	No	No	No	No	No	No	Yes	Yes

	Loma Alta Lagoon	Buena Vista Lagoon	Aqua Hedionda Lagoon	Batiquitos Lagoon	San Elijo Lagoon	San Dieguito Lagoon	Los Peñasquitos Lagoon	Tijuana Estuary	Otay River
OBJECTIVES									
Maximizes support of wetland dependent species	NA	NA	NA	NA	NA	NA	NA	Yes	Yes
Provides rare an endangered species habitat	NA	NA	NA	NA	NA	NA	NA	Yes	Yes
Restores reproductively isolated populations	NA	NA	NA	NA	NA	NA	NA	Yes	Yes
Increases aggregate wetland acreage	Minor increase	Minor increase	Minor increase	Minor increase	Minor increase	Minor increase	Minor increase	Yes	Yes
Requires minimal maintenance	NA	NA	NA	NA	NA	NA	NA	Requires Protective Berm	Yes
Minimizes impacts to wetlands and sensitive habitats	Yes	Yes	Yes	Yes	Yes	No	No	Impacts disturbed wetlands	Yes
Provides average buffer of 300'	No	No	No	No	No	Some sites	Yes	Most areas	Most areas
Considers site-specific restoration goals	No	No	No	No	No	No	No	Yes	Yes

	Loma Alta Lagoon	Buena Vista Lagoon	Aqua Hedionda Lagoon	Batiquitos Lagoon	San Elijo Lagoon	San Dieguito Lagoon	Los Peñasquitos Lagoon	Tijuana Estuary	Otay River
Provides maximum ecosystem benefit	No	No	No	No	No	No	No	Yes	Yes
Provides substantial fish habitat	No	No	No	No	No	No	No	Yes	Yes
Can be accomplished in a timely manner	No	No	No	No	No	No	No	Yes	Yes
Provides maximum transition area	No	No	No	No	No	No	No	No	No
Proximity to Carlsbad Desalination Plant	3.5 miles	5 miles	0 miles	9 miles	20 miles	25 miles	30 miles	50 miles	35 miles

NA = Information not available.