

CALIFORNIA COASTAL COMMISSION

45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE (415) 904-5200
FAX (415) 904-5400
TDD (415) 597-5885



W14a

November 22, 2013

To: Commissioners and Interested Persons

From: Alison Dettmer, Deputy Director
Kate Huckelbridge, Energy, Ocean Resources and Federal Consistency Division

Subject: **Condition Compliance for CDP No. E-06-013, Special Condition 8** – Poseidon Resources (Channelside), LLC; Submittal of a Revised Proposed Mitigation Site and Preliminary Restoration Plan as required by the approved Marine Life Mitigation Plan

SUMMARY OF STAFF RECOMMENDATION

Poseidon Resources (Poseidon) is requesting that the Commission approve a modification to the mitigation site and preliminary restoration plan for the Otay River Floodplain in south San Diego Bay that was approved by the Commission in February of 2011 as required by Coastal Development Permit E-06-013 for the Carlsbad desalination facility. Commission staff is recommending that the Commission *approve* the proposed modification to the mitigation site and preliminary restoration plan.

On November 15, 2007, the Coastal Commission approved CDP No. E-06-013 for Poseidon's proposal to construct and operate a desalination facility in Carlsbad, San Diego County. Special Condition 8 of that permit required Poseidon to submit a Marine Life Mitigation Plan (MLMP) addressing the impacts that will be caused by the facility's use of estuarine water and entrainment of marine organisms. On August 8, 2008, the Commission approved Poseidon's MLMP (see Exhibit 1). The approved MLMP requires Poseidon to take several steps to ensure it provides adequate mitigation for project impacts. On February 9, 2011, the Commission approved Poseidon's selection of the Otay River Floodplain in the San Diego Bay National Wildlife Refuge (NWR) as a mitigation site, and the preliminary restoration plan for more than 70 acres of wetland creation at the Otay site.

After Commission approval of the preliminary site and plan, Poseidon, in consultation with staff, a Science Advisory Panel (SAP) formed by staff to provide scientific expertise to the Commission, and representatives from several other state and federal agencies (collectively called the "MLMP Workgroup"), began to develop restoration alternatives for the mitigation project. To inform this process, Poseidon conducted a series of site-specific studies, including

initial and detailed soil characterization studies and a cultural resource survey. The initial soil characterization study indicated that the material to be excavated from the Otay floodplain as part of the restoration project was likely suitable for use in restoration of salt ponds located approximately one half mile north of the Otay site. The beneficial reuse of this material would avoid impacts associated with disposing of the material in a landfill, expand the footprint of tidal wetlands restored by the project and potentially avoid the need to dredge the Otay Channel. In light of these potential benefits, on October 15, 2012, the Executive Director granted Poseidon additional time to further explore this option before submitting a CDP application for the mitigation project.

Poseidon proceeded to develop alternatives for an integrated mitigation project that incorporated salt pond restoration into the Otay River Floodplain restoration project. However, subsequent to expanding the overall mitigation footprint to include salt ponds, results from two different site-specific studies suggested that the mitigation footprint at the Otay site should be smaller because of hazardous soil contamination and cultural resource discoveries. The first study, a cultural resource survey of the Otay site, revealed significant Native American artifacts in the northeastern corner of the site (see Exhibit 4). The second study, a more detailed soil characterization analysis, found significant soil contamination from DDT, chlordane and PCBs in the eastern portion of the Otay site, east of Nestor Creek (see Exhibits 5). Some areas of DDT contamination had concentrations high enough to be considered hazardous (see Exhibit 6). Results from these two analyses make the feasibility of excavating this material and using it to restore the salt ponds uncertain.

In response to this information, Poseidon proposes a revised mitigation site and preliminary restoration plan. The proposed mitigation site would encompass two restoration areas – the Otay River Floodplain and Pond 15, located in the northeast corner of the South San Diego Bay unit of the San Diego Bay NWR (see Exhibit 2b). The revised preliminary restoration plan would decrease the mitigation footprint at the Otay site to the area west of Nestor Creek to avoid impacts to cultural resources and impacts from exposure to contaminated soils, and expand the mitigation footprint to incorporate Pond 15 (see Exhibits 7-9). Poseidon would receive approximately 70% of the required mitigation credit from the restored salt ponds and approximately 30% from the Otay site (see section IV for additional detail). This is consistent with the MLMP requirement that Poseidon create or substantially restore tidal wetland habitat at up to two restoration sites.

Staff and the SAP have worked closely with Poseidon, the USFWS and other members of the MLMP Workgroup over the past two and a half years. We have reviewed Poseidon's proposal and believe that it is the best option to ensure a successful mitigation project within the framework of the MLMP. Commission staff therefore recommends that the Commission **approve** Poseidon's proposed revised mitigation site and preliminary restoration plan.

TABLE OF CONTENTS

I. MOTION AND RESOLUTION	4
II. STANDARD OF REVIEW	4
III. PROJECT TIMELINE AND BACKGROUND	6
A. SCIENCE ADVISORY PANEL	7
B. SITE SELECTION PROCESS AND APPROVED PRELIMINARY RESTORATION PLAN	7
IV. DEVELOPMENT OF RESTORATION ALTERNATIVES	8
V. SITE CONSTRAINTS	10
VI. PROPOSED REVISIONS TO THE APPROVED SITE AND PRELIMINARY RESTORATION PLAN	11
VII. RECOMMENDATION	12

APPENDICES

Appendix A – Substantive File Documents

EXHIBITS

- Exhibit 1 – Commission-Approved Marine Life Mitigation Plan
- Exhibit 2 – (a) Location of South San Diego Bay National Wildlife Refuge
 (b) Map of South San Diego Bay National Wildlife Refuge
- Exhibit 3 – Poseidon’s Approved Preliminary Restoration Plan
- Exhibit 4 – New Boundary of the Otay Site in response to discoveries of significant Native American artifacts
- Exhibit 5 – Pollutant Hotspots at the Otay River Floodplain Site
- Exhibit 6 – Contamination Levels at the Otay River Floodplain Site
- Exhibit 7 – Poseidon’s Revised Mitigation Site Plan
- Exhibit 8 – Proposed Integrated Restoration Project - Intertidal Alternative
- Exhibit 9 – Proposed Integrated Restoration Project - Subtidal Alternative
- Exhibit 10 – Proposed Integrated Restoration Project - Intertidal Alternative
 Sea Level Rise Projections
- Exhibit 11 – Proposed Integrated Restoration Project - Subtidal Alternative
 Sea Level Rise Projections
- Exhibit 12 – The South San Diego Bay Salt Pond Complex

I. MOTION AND RESOLUTION

Motion

“I move that the Commission approve the proposed modification to the Otay River Floodplain Mitigation Site and Preliminary Restoration Plan attached to the staff recommendation as Exhibits 7-9, as required by the Marine Life Mitigation Plan, approved by the Commission pursuant to Special Condition 8 of CDP No. E-06-013.”

Staff recommends a **YES** vote, which will result in the **approval** of the proposed modification to the mitigation site and preliminary restoration plan as required by the Marine Life Mitigation Plan in accordance with CDP No. E-06-013 Special Condition 8 and adoption of the motion, resolution, and findings herein. The motion passes only by an affirmative vote of a majority of the Commissioners present. Staff’s recommendation is detailed in Sections 4.0 and 5.0 of this memorandum.

Resolution

The Commission hereby approves the proposed modification to the Otay River Floodplain Mitigation Site and Preliminary Restoration Plan submitted by the permittee, Poseidon Resources (Channelside) LLC, in compliance with the Marine Life Mitigation Plan, approved on August 6, 2008 in accordance with Special Condition 8 of CDP No. E-06-013.

II. STANDARD OF REVIEW

The standard of review for this Commission decision is whether Poseidon’s proposed modification to the mitigation site and preliminary restoration plan conforms to applicable requirements of the Marine Life Mitigation Plan (MLMP) approved by the Commission on August 8, 2008. The MLMP is provided as Exhibit 1 of these Findings. The Commission approved the MLMP as being consistent with **Special Condition 8** of the CDP authorizing construction and operation of Poseidon’s proposed desalination facility (CDP #E-06-013).¹

¹ **Special Condition 8** states: “**Marine Life Mitigation Plan:** PRIOR TO ISSUANCE OF THE PERMIT, the Permittee shall submit to and obtain from the Commission approval of a Marine Life Mitigation Plan (the Plan) that complies with the following:

- a) Documentation of the project’s expected impacts to marine life due to entrainment and impingement caused by the facility’s intake of water from Agua Hedionda Lagoon. This requirement can be satisfied by submitting a full copy of the Permittee’s Entrainment Study conducted in 2004-2005 for this project.
- b) To the maximum extent feasible, the mitigation shall take the form of creation, enhancement, or restoration of aquatic and wetland habitat.
- c) Goals, objectives and performance criteria for each of the proposed mitigation sites. It shall identify specific creation, restoration, or enhancement measures that will be used at each site, including grading and planting plans, the timing of the mitigation measures, monitoring that will be implemented to establish baseline conditions and to determine whether the sites are meeting performance criteria. The Plan shall also identify contingency measures that will be implemented should any of the mitigation sites not meet performance criteria.

The approved MLMP establishes minimum standards and objectives needed to ensure adequate mitigation for marine life impacts caused by the Carlsbad desalination facility. The Plan also includes performance standards, timing restrictions, monitoring requirements, and other elements needed to ensure successful and adequate mitigation. Regarding site selection, Section 2.0 of the Plan states that site(s) are to be selected based on an evaluation of potential sites against the minimum standards and objectives identified in Section 3.0 of the Plan. Key minimum standards applicable to site selection require that the project's mitigation:

- Be in the form of creation or substantial restoration of estuarine habitat;
- Be provided at no more than two sites;²
- Be protected in perpetuity; and,
- Be provided concurrent with project impacts.

The MLMP, as approved by the Commission and later amended by Poseidon, provides for restoration of 66.4 acres of estuarine wetland habitat within the Southern California Bight.³ It allows mitigation to be provided in one or two phases, with at least 42.5 acres of estuarine restoration required during Phase I, and the remaining 18.4 acres during Phase II.⁴ The preliminary restoration plan approved by the Commission in February of 2011 provides for restoring all 66.4 acres at one time and all at one site. The proposed modification to the restoration plan would expand the mitigation area to two sites but still provide all mitigation at one time.

In addition to the Commission-approved MLMP, the Regional Water Quality Control Board (RWQCB) imposed its own mitigation requirements. The RWQCB adopted the Commission-approved MLMP as a requirement of Poseidon's NPDES permit and, based on its review of the expected fish losses due to impingement rates at the Carlsbad facility, additionally required Poseidon to ensure its mitigation would provide fish productivity at a rate of at least 1,715.5 kg/year to compensate for the desalination facility's projected impingement losses. The

-
- d) Requires submittals of "as-built" plans for each site and annual monitoring reports for no less than five years or until the sites meet performance criteria.
 - e) Defines legal mechanism(s) proposed to ensure permanent protection of each site – e.g., conservation easements, deed restriction, or other methods.

The Permittee shall comply with the approved Plan. Prior to implementing the Plan, the Permittee shall submit a proposed wetlands restoration project that complies with the Plan in the form of a separate coastal development permit application for the planned wetlands restoration project."

² The Plan allows Poseidon to propose that mitigation occur on more than two sites if there is a compelling argument, approved by the Executive Director, that the Plan's minimum standards and objectives would be better met at more than two sites.

³ The MLMP, as originally approved by the Commission, required 55.4 acres of mitigation. In September 2009, based on re-evaluation of the project's likely impingement impacts, Poseidon voluntarily agreed to provide 11 additional acres.

⁴ The MLMP also allows Poseidon to propose alternative mitigation in lieu of the Phase II restoration acreage.

RWQCB included this requirement as a “Biological Performance Standard” in section 5.4b of the MLMP.⁵

III. PROJECT TIMELINE AND BACKGROUND

On November 15, 2007, the Commission approved CDP No. E-06-013 for Poseidon’s proposal to construct and operate a desalination facility in Carlsbad, San Diego County, subject to Poseidon meeting a number of conditions prior to issuance of the permit. As part of this approval, the Commission required Poseidon, through Special Condition 8, to submit for additional Commission review and approval a Marine Life Mitigation Plan (MLMP) addressing the impacts that will be caused by the facility’s use of estuarine water and its entrainment of marine organisms. The MLMP, developed jointly by staff and Poseidon, was approved by the Commission on August 8, 2008 (see Exhibit 1). On November 3, 2009, after a determination by staff that the prior to issuance conditions had been met, the permit was issued.

The approved MLMP requires Poseidon to submit, for Commission review and approval, its proposed site(s) and preliminary wetland restoration plan within 10 months of issuance of the CDP for the desalination facility. After Commission approval of that proposed site and preliminary plan, Poseidon is to submit a complete CDP application for its final proposed mitigation plan within two years of issuance of the facility CDP (i.e., November 2011), with mitigation site construction to start within six months of Commission final plan approval. The MLMP states that the Executive Director may extend the time limits established in the MLMP at the request of Poseidon upon a showing of good cause.

After being granted a one-month extension, Poseidon submitted materials on its proposed mitigation site and preliminary restoration plan on September 13, 2010. The Commission approved the Otay River Floodplain mitigation site and preliminary restoration plan for that site on February 9, 2011 (see section II.B. for additional detail). In November 2011, the Commission’s former Executive Director approved a one year extension to submit the CDP application to allow Poseidon and the U.S. Fish and Wildlife Service (USFWS) more time to complete a Supplemental Environmental Impact Statement and other tasks necessary to submit a complete CDP application for the mitigation proposal. On October 15, 2012, the Commission’s Executive Director approved an additional time extension of 18 months to allow Poseidon to explore the potential of incorporating additional salt pond restoration in South San Diego Bay into the mitigation project (see Section III for additional detail). Allowing for these two extensions, Poseidon’s current deadline to submit a CDP application for the mitigation project is May 3, 2014.

⁵ The MLMP, along with the additional fish productivity standard, was adopted by the RWQCB on May 13, 2009 as part of Order No. R9-2009-0038. The fish productivity rate of 1,715.5 kg/year is based on an impingement estimate of 4.7 kg/day at the Carlsbad desalination facility. To demonstrate that the mitigation wetlands meet this requirement, the Regional Board required Poseidon to develop a Productivity Monitoring Plan, subject to review by the SAP, which incorporates the productivity measurement methodologies presented in Allen, “Seasonal Abundance, Composition, and Productivity...” *Fishery Bulletin*, Vol. 80, NO.4 1982, pages 769-790. Fish productivity monitoring will be conducted once per month for a 13 month period, beginning four years after the completion of construction of the wetlands.

A. SCIENCE ADVISORY PANEL

To assist in the review of the more technical aspects of this project, staff formed a Scientific Advisory Panel (SAP) made up of three independent scientists with expertise in coastal biology, ecology and hydrodynamics, two of whom have previously provided scientific guidance to the Commission on the San Dieguito Restoration Project implemented by Southern California Edison as mitigation for the San Onofre Nuclear Generating Station. Currently, the SAP representatives reviewing Poseidon's proposed site and plan are Dr. Richard Ambrose, Professor and Director of Environmental Science & Engineering Program, Department of Environmental Health Sciences, University of California Los Angeles, Dr. Pete Raimondi, Professor and Chair of Ecology and Evolutionary Biology, University of California, Santa Cruz and Dr. Brett Sanders, Professor and Chair of Civil and Environmental Engineering, University of California, Irvine.

B. SITE SELECTION PROCESS AND APPROVED PRELIMINARY RESTORATION PLAN

As part of the MLMP, Poseidon is required to develop a proposed site and preliminary restoration plan. As part of the site selection process, Poseidon completed a study that evaluated 12 restoration sites based on the MLMP's objectives, criteria and timeline. Poseidon identified two sites, the Otay River floodplain in the South San Diego Bay National Wildlife Reserve (see Exhibits 2a and 2b) and the Tijuana Estuary as the first and second preferred mitigation site options, respectively. Poseidon, Commission staff, members of the SAP, as well as representatives from other state and federal agencies, met several times over the following year to review Poseidon's analysis and collectively make decisions on how to proceed.

Poseidon's preliminary plan for the site included three different wetland design concepts based on the Comprehensive Conservation Plan (CCP) and Environment Impact Statement (EIS) for the Sweetwater Marsh and South San Diego Bay Units of the San Diego Bay NWR adopted by the USFWS in August of 2006 (see Exhibit 3). Each concept included subtidal (i.e., permanently flooded) areas, mudflats, low marsh, mid marsh, upper marsh, an uplands transitional zone and a buffer zone on the eastern and southern portions of the site. The concepts differed in the specific acreage of each wetland zone and the manner in which these zones are laid out on the landscape. Generally, the intertidal areas were designed to provide mitigation for the desalination facility's expected entrainment impacts while the subtidal areas were largely meant to provide the level of fish productivity required by the RWQCB. Concept 1, also called the mixed habitat plan (Exhibit 3a), consisted of 74.25 acres of marsh and was characterized by a fairly large subtidal basin at the center of the site, accounting for approximately 25% of the total area. Intertidal areas accounted for about 57% of the marsh acreage. Concept 2, also called the maximum subtidal plan (Exhibit 3b), included more subtidal habitat and less intertidal habitat as compared to Concept 1. In Concept 2, the subtidal basin made up about 44% of the total marsh area, while intertidal areas decreased by approximately 30% from Concept 1. Concept 3, also called the maximum intertidal plan (Exhibit 3c) took the opposite approach from Concept 2, maximizing intertidal areas and minimizing subtidal areas. In this design, subtidal areas accounted for about 20% of the overall acreage, while intertidal areas accounted for about 61% (an increase of about 7% from Concept 1).

On October 15, 2010, staff presented its recommendation that the Commission approve the selection of the Otay River Floodplain mitigation site and the preliminary restoration plan for this site. However, the Commission postponed the item to allow for a more in-depth alternatives analysis and to allow staff to address several concerns expressed by Commissioners related to the feasibility of the Otay site. In the next three months, Poseidon submitted a more extensive alternatives analysis and staff addressed the Commission's concerns with the site. On February 9, 2011, the Commission approved Poseidon's selection of the Otay River floodplain as a mitigation site and the preliminary restoration plan they developed for the site, finding that this site was consistent with the requirements, objectives and restrictions outlined in the MLMP.

IV. DEVELOPMENT OF RESTORATION ALTERNATIVES

After the site and preliminary restoration plan were approved, staff, the SAP, and representatives from other state and federal agencies (collectively, the "MLMP Workgroup") continued to meet regularly with Poseidon to further develop restoration alternatives for the Otay River floodplain. As part of this process, Poseidon conducted a series of studies to further characterize the site. These studies included biological surveys of vegetation and avian species, delineation of wetlands, a bathymetric survey, an initial soil characterization study, geotechnical analyses, cultural resource studies and analysis of tidal hydraulics and flood potential.

Results of the initial soil characterization study indicated that material excavated from the Otay site as part of the restoration project was likely suitable for salt pond restoration. Based on this information, in the summer of 2012, the USFWS and Poseidon proposed to the MLMP Workgroup that instead of disposing excavated material from the Otay floodplain offsite, that material would be transferred to one or more of the salt ponds located about a half mile north of the Otay Site within the NWR (see Exhibit 2b). The material would be used to raise the elevation of the salt pond(s) to depths appropriate for tidal wetland habitat. This action, in conjunction with engineered breaks in the levy surrounding the ponds, would restore the salt pond site to tidal wetlands.

There are several advantages to incorporating salt pond restoration into the Otay River floodplain mitigation project. First, if feasible, transferring the material excavated from the Otay site to the salt pond(s) would result in a beneficial reuse of that material and would reduce air emissions and traffic concerns, as moving the material the short distance to the salt ponds would have fewer adverse air and traffic effects than trucking the material to a landfill offsite. In addition, one of the principal concerns in designing the mitigation wetland at the Otay site was providing enough subtidal habitat to meet the fish productivity standard imposed by the RWQCB.⁶ To obtain enough subtidal acreage, it is likely that the Otay channel would need to be dredged to allow a greater volume of water to flow into and out of the Otay wetland. Dredging would result in direct impacts to channel bottom habitat and indirect impacts related to turbidity to surrounding habitat areas. Furthermore, dredging the channel and thus increasing the tidal prism raised concerns about excess sedimentation or scour leading to instabilities in channel morphology. Incorporating salt pond restoration into the mitigation project would likely significantly reduce these impacts. It is likely that the fish productivity standard could be met,

⁶ See footnote 5.

at least in part, in the salt pond restoration area. Due to the immediate proximity of the ponds to San Diego Bay (See Exhibit 2b), maintaining subtidal habitat in the salt pond(s) would not result in the same potential negative impacts to channel stability and habitat. If the fish productivity standard could be met to some extent in the salt pond(s), it is possible that dredging of the Otay channel could be minimized or eliminated altogether.

Finally, expanding the mitigation project to include restoration of one or more salt ponds would provide additional critical tidal wetland habitat for invertebrates, fish and birds (including threatened and endangered species). Although Poseidon still proposed to get the vast majority of its mitigation credit at the Otay site, incorporating salt pond restoration into the project would more than double the size of restored tidal wetland habitat provided by the project. The CCP developed by the USFWS for the South San Diego Bay Unit of the San Diego Bay NWR envisions restoration of tidal influence to the entire salt pond complex. One of the challenges of restoring salt ponds is finding the right type of material to raise the elevation of the ponds to an appropriate depth for tidal wetland habitat. To that end, the CCP specifically calls for material excavated from the Otay River floodplain, should it be suitable, to be used in raising the elevation of the salt ponds. Andy Yuen, the manager of the San Diego Bay NWR and a member of the MLMP Mitigation Workgroup confirmed that there are currently no specific proposals or funding to restore the salt ponds, and that removing the material excavated from the Otay River floodplain out of the basin would be a lost opportunity to restore additional tidal wetland habitat within the NWR.

To incorporate salt pond restoration into Poseidon's mitigation project required Poseidon to conduct several additional analyses to determine conclusively if the material excavated from the Otay floodplain was suitable for restoration and if salt pond restoration was feasible within the framework of the MLMP. These analyses took time to complete, leading the Executive Director to approve an 18 month extension of the deadline for Poseidon to submit a CDP application for the mitigation project.

V. SITE CONSTRAINTS

Over the next year, Poseidon conducted several site-specific studies to aid in the development of project alternatives for the new integrated mitigation project. Two of these studies revealed potential site constraints within the Otay River Floodplain. The first study was a cultural resources inventory of the site. Results from the survey, presented to the MLMP Workgroup in June of 2013, showed that cultural artifacts were spread evenly over the project area. During the survey, the contractor inadvertently discovered human remains on the site. The survey was temporarily halted to allow consultation with the Kumeyaay Cultural Repatriation Committee (KCRC). This discovery led to additional excavations in coordination with the USFWS and the KCRC resulting in the identification of significant Native American cultural resources in the northeast corner of the Otay site. To address concerns raised by the results of the survey, Poseidon and the USFWS agreed to pull back the northeastern boundary of the project site to avoid these resources altogether (see Exhibit 4).

In addition to the cultural resources inventory, Poseidon conducted a detailed analysis of soil contamination at the Otay site and presented the results to the MLMP Workgroup in June and

August of 2013. These results indicated that contamination of the Otay site was much more extensive than initially estimated. The eastern portion of the site (east of Nestor Creek) contains several areas with elevated concentrations of DDT/DDD/DDE, PCBs and/or chlordane (see Exhibit 5). A significant portion of the contamination area contains soils that exceed California's environmental health screening thresholds for DDT, DDE, and DDD (see Exhibits 5 and 6). These soils would be classified as hazardous waste if excavated and hauled to a landfill for disposal. Other areas of contamination exceeded the ERL (effects range low) and ERM (effects range medium) thresholds developed by NOAA to evaluate sediment toxicity (see Exhibit 6). The extent and severity of the contamination documented by this study cast doubt on the feasibility of excavating the eastern portion of the Otay site and the suitability of using these soils for salt pond restoration.

These two developments – the documentation of substantial soil contamination in the eastern portion of the Otay site and the discovery of significant cultural resources on the site – create uncertainty about how best to proceed with the mitigation project. In Commission staff's view, there are two options. The first option is for Poseidon to continue with the project preliminarily approved by the Commission in February of 2011 as much as possible. Poseidon would restore all but the northeastern corner of the Otay site to tidal wetlands. Soil excavated from the Otay site may, if deemed suitable, be used to restore tidal wetland habitat in one or more salt ponds, but the benefits received from restoring these areas would be ancillary. Poseidon would receive most if not all mitigation credit from restoration at the Otay site. Under this option, Poseidon would be obligated to clean up the contaminated portion of the site as part of its restoration project. Because some of the contamination at the site is classified as hazardous waste, it is likely that any disturbance of this area would trigger the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Under CERCLA, the USFWS and Poseidon would need to obtain approvals from the EPA and other federal and state agencies to remediate the site, a process that could take 3-5 years before construction of the restoration project could begin. Even if the hazardous soils are avoided, the USFWS would need to develop new, site-specific contamination screening thresholds to determine if the non-hazardous but contaminated soils could be used in the Pond 15 restoration without harming sensitive species. The USFWS estimates that it could take 6 months to 1 year to develop these thresholds. Either of these options would delay construction of the mitigation project and require an additional time extension of the CDP application deadline to allow Poseidon to develop a site remediation plan.

A second option, as proposed by Poseidon, would be to decrease the size of the mitigation footprint at the Otay site to avoid the impacts discussed above and obtain the majority of the mitigation credit required by the MLMP from restoration of one or more salt ponds. Under this option, Poseidon would not need an additional time extension, and development of the mitigation project could proceed on schedule. This is significant because the mitigation schedule outlined in the MLMP is tied to the approval and estimated construction schedule of the Carlsbad desalination facility, ensuring that impacts to marine species from operation of the Carlsbad facility are mitigated concurrently. This option represents a significant change to the project preliminarily approved by the Commission in February 2011. Poseidon would receive approximately 70% of the required mitigation credit from the restored salt ponds and approximately 30% from the Otay site (see section IV for additional detail), as opposed to the current approval which calls for 100% of mitigation from the Otay site. These changes are, however, consistent with the MLMP, as the MLMP just requires that Poseidon create or

substantially restore tidal wetland habitat at up to two restoration sites, and this would still be the case under the new proposal. This proposal does, however, focus more on restoration of wetlands as opposed to creation of wetlands, as was originally proposed.

Staff, the SAP and the other members of the MLMP Workgroup including the USFWS and Poseidon carefully considered the two options presented above. The MLMP Workgroup collectively decided that the second option, decreasing the size of the mitigation footprint at the Otay site and expanding the project to include restoration of one or more salt ponds, was superior in terms of meeting the intent, requirements and schedule imposed by the MLMP. To further explore this option, Poseidon developed a revised preliminary restoration plan, presented in the following section.

VI. PROPOSED REVISIONS TO THE APPROVED SITE AND PRELIMINARY RESTORATION PLAN

Poseidon's proposed revised preliminary restoration plan integrating the restoration of the Otay River Floodplain with salt pond restoration includes two alternatives – an intertidal alternative and a subtidal alternative. Both alternatives occupy the same footprint and create tidal wetlands at the Otay site and substantially restore wetland habitat at Pond 15, located in the northeast corner of the South San Diego Bay unit of the San Diego Bay NWR (see Exhibit 2b and 7). The intertidal alternative would restore 20% of the combined site to intertidal mudflat and 80% to intertidal salt marsh (see Exhibit 8). The subtidal alternative would restore 19% of the combined site to subtidal habitat, 18% to intertidal mudflat and 63% to intertidal salt marsh (see Exhibit 9). The principal tradeoff between the two alternatives is between salt marsh, favored at the Otay site in the intertidal alternative, and subtidal habitat, favored at the Otay site in the subtidal alternative. Conversely, because tidal salt marsh generally occurs at higher elevations than subtidal areas, favoring salt marsh at the Otay site means less excavation and consequently lower elevations at Pond 15. This tradeoff becomes more evident when sea level rise projections are considered. In 2050, under the intertidal alternative, the Otay site increases in both mudflat and subtidal areas but retains almost the same area of salt marsh. However, Pond 15 loses salt marsh habitat to subtidal and mudflat habitat (see Exhibit 10). Under the subtidal alternative, the Otay site loses salt marsh habitat in favor of subtidal and mudflat habitat but Pond 15 retains a significant portion of its marsh and mudflat areas (see Exhibit 11). If the Commission approves Poseidon's modified restoration plan, Poseidon and the USFWS would continue to analyze these two alternatives under the National Environmental Policy Act (NEPA) and would present a preferred alternative to the Commission as part of a final restoration plan and CDP application package.

A key component of this proposed mitigation project will be determining how much credit Poseidon receives for restoring Pond 15 to tidal wetland habitat. Currently, Pond 15 is one of a series of ponds that make up the salt works operation currently managed by a private company under a lease agreement with the USFWS (see Exhibit 12). These ponds are shallow, bermed, open water cells ranging in salinity from 70 parts per thousand (ppt) to 130 ppt (seawater has a salinity concentration of approximately 35 ppt). Water from the San Diego Bay is pumped into the system and circulated through the ponds. Salts in the ponds concentrate and either precipitate

out to form crystals or remain in a concentrated brine solution. These products are then harvested, processed, and sold for industrial, commercial, and residential uses. Given the high salinity concentrations in the ponds, they do not support wetland vegetation, fish or invertebrate species. They do, however, currently provide foraging and loafing habitat and the berms provide nesting habitat for several species of shore birds and wading birds, including several endangered and sensitive species. The ecosystem benefits provided by the existing salt ponds must be quantified and subtracted from the total credits available to Poseidon for restoring this site, meaning that Poseidon will receive less than one acre of credit for restoring one acre of salt ponds. Poseidon is working with staff and the SAP to finalize a methodology for determining this discount. A detailed description of the methodology and resulting discount factor will be included in the final restoration plan, which is subject to Commission approval.

VII. RECOMMENDATION

In summary, staff and the SAP recommend that the Commission approve Poseidon's proposal to expand the Otay River Floodplain mitigation project to include restoration of a salt pond in the South San Diego Bay Unit of the San Diego Bay NWR. As part of this action, staff and the SAP also recommend that the Commission approve Poseidon's revised preliminary restoration plan that decreases the size of the mitigation footprint at the Otay floodplain from what was originally approved by the Commission and adds additional tidal wetland restoration and mitigation at Pond 15.

APPENDIX A

Substantive File Documents:

Letter to Alison Dettmer, Tom Luster and Kate Huckelbridge from Stan Williams, Poseidon Resources Regarding **Condition Compliance for CDP No. E-06-013, Special Condition 8** – Poseidon Resources (Channelside), LP; Submittal of a proposed Revised Mitigation Site and Revised Preliminary Integrated Restoration Plan as required by the approved Marine Life Mitigation Plan. November 5, 2013.

“Otay River Estuary Restoration Project: Sediment Chemistry and Volumes.” Slide Presentation by David Cannon, Everest Consulting to the Poseidon Mitigation MLMP Workgroup on August 29, 2013.

CCC Staff Report on Condition Compliance for CDP No. E-06-013, Special Condition 8 – Poseidon Resources (Channelside), LLC; Submittal of a Proposed Mitigation Site and Preliminary Restoration Plan as required by the approved Marine Life Mitigation Plan. January 27, 2011.

**Item W16a – Exhibit 1
Special Condition 8 of E-06-013 – Poseidon Resources
November 21, 2008**

APPROVED MARINE LIFE MITIGATION PLAN

INTRODUCTION

Poseidon's Carlsbad desalination facility will be co-located with the Encina Power Station and will use the power plant's once-through cooling intake and outfall structures. The desalination facility is expected to use about 304 million gallons per day (mgd) of estuarine water drawn through the structure. The facility will operate both when the power plant is using its once-through cooling system and when it is not.

This Marine Life Mitigation Plan (the Plan) will result in mitigation necessary to address the entrainment impacts caused by the facility's use of estuarine water. The Plan includes two phases of mitigation – Poseidon is required during Phase I to provide at least 37 acres of estuarine wetland restoration, as described below. In Phase II, Poseidon is required to provide an additional 18.4 acres of estuarine wetland restoration. However, as described below, Poseidon may choose to provide all 55.4 acres of restoration during Phase I. Poseidon may also choose during Phase II to apply for a CDP to reduce or eliminate the required 18.4 acres of mitigation and instead conduct alternative mitigation by implementing new entrainment reduction technology or obtaining mitigation credit for conducting dredging.

CONDITION A: WETLAND RESTORATION MITIGATION

The permittee shall develop, implement and fund a wetland restoration project that compensates for marine life impacts from Poseidon's Carlsbad desalination facility.

1.0 PHASED IMPLEMENTATION

Phase I: Poseidon is to provide at least 37 acres of estuarine wetland restoration. Within two years of issuance of the desalination facility's coastal development permit (CDP), Poseidon is to submit a complete CDP application for a proposed restoration project, as described below.

Phase II: Within five years of issuance of the Phase I CDP, Poseidon is to submit a complete CDP application proposing up to 18.4 acres of additional estuarine wetland restoration, subject to reduction as described in Section 6.0 below.

2.0 SITE SELECTION

In consultation with Commission staff, the permittee shall select a wetland restoration site or sites for mitigation in accordance with the following process and terms.

Within 10 months of the effective date of this permit, the permittee shall submit the proposed site(s) and preliminary wetland restoration plan to the Commission for its review and approval or disapproval.

The location of the wetland restoration project(s) shall be within the Southern California Bight. The permittee shall select from sites including, but not limited to, the following eleven sites: Tijuana Estuary in San Diego County; San Dieguito River Valley in San Diego County; Agua Hedionda Lagoon in San Diego County; San Elijo Lagoon in San Diego County; Buena Vista Lagoon in San Diego County; Huntington Beach Wetland in Orange County, Anaheim Bay in Orange County, Santa Ana River in Orange County, Los Cerritos Wetland in Los Angeles County, Ballona Wetland in Los Angeles County, and Ormond Beach in Ventura County. The permittee may also consider any sites that may be recommended by the California Department of Fish & Game as high priority wetlands restoration projects. Other sites proposed by the permittee may be added to this list with the Executive Director's approval.

The basis for the selection shall be an evaluation of the site(s) against the minimum standards and objectives set forth in subsections 3.1 and 3.2 below. The permittee shall take into account and give serious consideration to the advice and recommendations of the Scientific Advisory Panel (SAP) established and convened by the Executive Director pursuant to Condition B.1.0. The permittee shall select the site(s) that meet the minimum standards and best meet the objectives.

3.0 PLAN REQUIREMENTS

In consultation with Commission staff, the permittee shall develop a wetland restoration plan for the wetland site(s) identified through the site selection process. The wetland restoration plan shall meet the minimum standards and incorporate as many as feasible of the objectives in subsections 3.1 and 3.2, respectively.

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;
- b. Potential for restoration as tidal wetland, with extensive intertidal and subtidal areas;
- c. Creates or substantially restores a minimum of 37 acres and up to at least 55.4 acres of habitat similar to the affected habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transition area;

- 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.
- e. Any existing site contamination problems would be controlled or remediated 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;
- g. Feasible methods are available to protect the long-term wetland values on the site(s), in perpetuity;
- h. Does not result in a net loss of existing wetlands; and
- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

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;
- b. Provides substantial fish habitat compatible with other wetland values at the site(s);
- 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.
- d. Provides maximum upland transition areas (in addition to buffer zones);
- e. Restoration involves minimum adverse 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;
- g. Restoration design is that most likely to produce and support wetland-dependent resources;
- h. Provides rare or endangered species habitat;

- i. Provides 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;
- k. Requires minimum maintenance;
- l. Restoration project can be accomplished in a reasonably timely fashion; and,
- m. Site(s) in proximity to the Carlsbad desalination facility.

3.3 Restrictions

- a. The permittee may propose a wetland restoration project larger than the minimum necessary size specified in subsection 3.1(c) above, if biologically appropriate for the site(s), but the additional acreage must (1) be clearly identified, and (2) must not be the portion of the project best satisfying the standards and objectives listed above.
- b. If the permittee jointly enters into a restoration project with another party: (1) the permittee's portion of the project must be clearly specified, (2) any other party involved cannot gain mitigation credit for the permittee's portion of the project, and (3) the permittee may not receive mitigation credit for the other party's portion of the project.
- c. The permittee may propose to divide the mitigation requirement between a maximum of two wetland restoration sites, unless there is a compelling argument, approved by the Executive Director, that the standards and objectives of subsections 3.1 and 3.2 will be better met at more than two sites.

4.0 PLAN IMPLEMENTATION

4.1 Coastal Development Permit Applications

The permittee shall submit complete Coastal Development Permit applications for the Phase I and Phase II restoration plan(s) that include CEQA documentation and local or other state agency approvals. The CDP application for Phase I shall be submitted within 24 months following the issuance of the Coastal Development Permit for the Carlsbad desalination facility. The CDP application for Phase II shall be submitted within 5 years of issuance of the CDP for Phase I. The Executive Director may grant an extension to these time periods at the request of and upon a demonstration of good cause by the permittee. The restoration plans shall substantially conform to Section 3.0 above and shall include, but not be limited to the following elements:

- a. Detailed review of existing physical, biological, and hydrological conditions; ownership, land use and regulation;

- b. Evaluation of site-specific and regional restoration goals and compatibility with the goal of mitigating for Poseidon's marine life impacts;
- c. Identification of site opportunities and constraints;
- d. Schematic restoration design, including:
 - 1. Proposed cut and fill, water control structures, control measures for stormwater, buffers and transition areas, management and maintenance requirements;
 - 2. Planting program, including removal of exotic species, sources of plants and or seeds (local, if possible), protection of existing salt marsh plants, methods for preserving top soil and augmenting soils with nitrogen and other necessary soil amendments before planting, timing of planting, plans for irrigation until established, and location of planting and elevations on the topographic drawings;
 - 3. Proposed habitat types (including approximate size and location);
 - 4. Assessment of significant impacts of design (especially on existing habitat values) and net habitat benefits;
 - 5. Location, alignment and specifications for public access facilities, if feasible;
 - 6. Evaluation of steps for implementation e.g. permits and approvals, development agreements, acquisition of property rights;
 - 7. Cost estimates;
 - 8. Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval; and
 - 9. Drawings shall be directly translatable into final working drawings.
- e. Detailed information about how monitoring and maintenance will be implemented;
- f. Detailed information about construction methods to be used;
- g. Defined final success criteria for each habitat type and methods to be used to determine success;
- h. Detailed information about how Poseidon will coordinate with the Scientific Advisory Panel including its role in independent monitoring, contingency planning review, cost recovery, etc.;
- i. Detailed information about contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards, or other criteria; and,
- j. Submittal of "as-built" plans showing final grading, planting, hydrological features, etc. within 60 days of completing initial mitigation site construction.

4.2 Wetland Construction Phase

Within 6 months of approval of the Phase I restoration plan, subject to the permittee's obtaining the necessary permits, the permittee shall commence the construction phase of the wetland restoration project. The permittee shall be responsible for ensuring that construction is carried out in accordance with the specifications and within the timeframes specified in the approved final restoration plan and shall be responsible for any remedial work or other intervention necessary to comply with final plan requirements.

4.3 Timeframe for Resubmittal of Project Elements

If the Commission does not approve any element of the project (i.e. site selection, restoration plan), the Commission will specify the time limits for compliance relative to selection of another site or revisions to the restoration plan.

5.0 WETLAND MONITORING, MANAGEMENT AND REMEDIATION

Monitoring, management (including maintenance), and remediation shall be conducted over the "full operating life" of Poseidon's desalination facility, which shall be 30 years from the date "as-built" plans are submitted pursuant to subsection 4.1(l).

The following section describes the basic tasks required for monitoring, management and remediation. Condition B specifies the administrative structure for carrying out these tasks, including the roles of the permittee and Commission staff.

5.1 Monitoring and Management Plan

A monitoring and management plan will be developed in consultation with the permittee and appropriate wildlife agencies, concurrently with the preparation of the restoration plan to provide an overall framework to guide the monitoring work. It will include an overall description of the studies to be conducted over the course of the monitoring program and a description of management tasks that are anticipated, such as trash removal. Details of the monitoring studies and management tasks will be set forth in a work program (see Condition B).

5.2 Pre-restoration site monitoring

Pre-restoration site monitoring shall be conducted to collect baseline data on the wetland attributes to be monitored. This information will be incorporated into and may result in modification to the overall monitoring plan.

5.3 Construction Monitoring

Monitoring shall be conducted during and immediately after each stage of construction of the wetland restoration project to ensure that the work is conducted according to plans.

5.4 Post-Restoration Monitoring and Remediation

Upon completion of construction of the wetland(s), monitoring shall be conducted to measure the success of the wetland(s) in achieving stated restoration goals (as specified in the restoration plan(s)) and in achieving performance standards, specified below. The permittee shall be fully responsible for any failure to meet these goals and standards during the facility's full operational years. Upon determining that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with the permittee, which shall be immediately implemented by the permittee with Commission staff direction. If the permittee does not agree that remediation is necessary, the matter may be set for hearing and disposition by the Commission.

Successful achievement of the performance standards shall (in some cases) be measured relative to approximately four reference sites, which shall be relatively undisturbed, natural tidal wetlands within the Southern California Bight. The Executive Director shall select the reference sites. The standard of comparison, i.e., the measure of similarity to be used (e.g., within the range, or within the 95% confidence interval) shall be specified in the work program.

In measuring the performance of the wetland project, the following physical and biological performance standards will be used:

- a. **Longterm Physical Standards.** The following long-term standards shall be maintained over the full operative life of the desalination facility:
 1. **Topography.** The wetland(s) shall not undergo major topographic degradation (such as excessive erosion or sedimentation);
 2. **Water Quality.** Water quality variables [to be specified] shall be similar to reference wetlands;
 3. **Tidal prism.** If the mitigation site(s) require dredging, the tidal prism shall be maintained and tidal flushing shall not be interrupted; and,
 4. **Habitat Areas.** The area of different habitats shall not vary by more than 10% from the areas indicated in the restoration plan(s).

- b. **Biological Performance Standards.** The following biological performance standards shall be used to determine whether the restoration project is successful. Table 1, below, indicates suggested sampling locations for each of the following biological attributes; actual locations will be specified in the work program:
 1. **Biological Communities.** Within 4 years of construction, the total densities and number of species of fish, macroinvertebrates and birds (see Table 1) shall be similar to the densities and number of species in similar habitats in the reference wetlands;
 2. **Vegetation.** The proportion of total vegetation cover and open space in the marsh shall be similar to those proportions found in the reference sites. The percent cover of algae shall be similar to the percent cover found in the reference sites;
 3. **Spartina Canopy Architecture.** The restored wetland shall have a canopy architecture that is similar in distribution to the reference sites, with an equivalent proportion of stems over 3 feet tall;

4. **Reproductive Success.** Certain plant species, as specified by in the work program, shall have demonstrated reproduction (i.e. seed set) at least once in three years;
5. **Food Chain Support.** The food chain support provided to birds shall be similar to that provided by the reference sites, as determined by feeding activity of the birds; and,
6. **Exotics.** The important functions of the wetland shall not be impaired by exotic species.

Table 1: Suggested Sampling Locations

	Salt Marsh			Open Water		Mudflat	Tidal Creeks
	Spartina	Salicornia	Upper	Lagoon	Eelgrass		
1) Density/spp:							
– Fish				X	X	X	X
– Macroinvertebrates				X	X	X	X
– Birds	X	X	X	X		X	X
2) % Cover							
Vegetation	X	X	X		X		
algae	X	X				X	
3) Spartina architecture	X						
4) Reproductive success	X	X	X				
5) Bird feeding				X		X	X
6) Exotics	X	X	X	X	X	X	X

6.0 ALTERNATIVE MITIGATION

As part of Phase II, Poseidon may propose in its CDP application alternatives to reduce or eliminate the required 18.4 acres of mitigation. The alternative mitigation proposed may be in the form of implementing new entrainment reduction technology or may be mitigation credits for conducting dredging, either of which could reduce or eliminate the 18.4 acres of mitigation.

CONDITION B: ADMINISTRATIVE STRUCTURE

1.0 ADMINISTRATION

Personnel with appropriate scientific or technical training and skills will, under the direction of the Executive Director, oversee the mitigation and monitoring functions identified and required by Condition A. The Executive Director will retain scientific and administrative support staff needed to perform this function, as specified in the work program.

This technical staff will oversee the preconstruction and post-construction site assessments, mitigation project design and implementation (conducted by permittee), and monitoring activities (including plan preparation); the field work will be done by contractors under the Executive Director's direction. The contractors will be responsible for collecting the data, analyzing and interpreting it, and reporting to the Executive Director.

The Executive Director shall convene a Scientific Advisory Panel to provide the Executive Director with scientific advice on the design, implementation and monitoring of the wetland restoration. The panel shall consist of recognized scientists, including a marine biologist, an ecologist, a statistician and a physical scientist.

2.0 BUDGET AND WORK PROGRAM

The funding necessary for the Commission and the Executive Director to perform their responsibilities pursuant to these conditions will be provided by the permittee in a form and manner reasonably determined by the Executive Director to be consistent with requirements of State law, and which will ensure efficiency and minimize total costs to the permittee. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction with its review of the restoration plan. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The budget to be funded by the permittee will be for the purpose of reasonable and necessary costs to retain personnel with appropriate scientific or technical training and skills needed to assist the Commission and the Executive Director in carrying out the mitigation and lost resource compensation conditions. In addition, reasonable funding will be included in this budget for necessary support personnel, equipment, overhead, consultants, the retention of contractors needed to conduct identified studies, and to defray the costs of members of any scientific advisory panel(s) convened by the Executive Director for the purpose of implementing these conditions.

Costs for participation on any advisory panel shall be limited to travel, per diem, meeting time and reasonable preparation time and shall only be paid to the extent the participant is not otherwise entitled to reimbursement for such participation and preparation. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction

with its review of the restoration plan. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution. Total costs for such advisory panel shall not exceed \$100,000 per year adjusted annually by any increase in the consumer price index applicable to California.

The work program will include:

- a. A description of the studies to be conducted over the subsequent two year period, including the number and distribution of sampling stations and samples per station, methodology and statistical analysis (including the standard of comparison to be used in comparing the mitigation project to the reference sites);
- b. A description of the status of the mitigation projects, and a summary of the results of the monitoring studies to that point;
- c. A description of four reference sites;
- d. A description of the performance standards that have been met, and those that have yet to be achieved;
- e. A description of remedial measures or other necessary site interventions;
- f. A description of staffing and contracting requirements; and,
- g. A description of the Scientific Advisory Panel's role and time requirements in the two year period.

The Executive Director may amend the work program at any time, subject to appeal to the Commission.

3.0 ANNUAL REVIEW AND PUBLIC WORKSHOP REVIEW

The permittee shall submit a written review of the status of the mitigation project to the Executive Director no later than April 30 each year for the prior calendar year. The written review will discuss the previous year's activities and overall status of the mitigation project, identify problems and make recommendations for solving them, and review the next year's program.

To review the status of the mitigation project, the Executive Director will convene and conduct a duly noticed public workshop during the first year of the project and every other year thereafter unless the Executive Director deems it unnecessary. The meeting will be attended by the contractors who are conducting the monitoring, appropriate members of the Scientific Advisory Panel, the permittee, Commission staff, representatives of the resource agencies (CDFG, NMFS, USFWS), and the public. Commission staff and the contractors will give presentations on the previous biennial work program's activities, overall status of the mitigation project, identify problems and make recommendations for solving them, and review the next upcoming period's biennial work program.

The public review will include discussions on whether the wetland mitigation project has met the performance standards, identified problems, and recommendations relative to corrective measures necessary to meet the performance standards. The Executive Director will use information presented at the public review, as well as any other relevant information, to determine whether any or all of the performance standards have been met, whether revisions to the standards are necessary, and whether remediation is required. Major revisions shall be subject to the Commission's review and approval.

The mitigation project will be successful when all performance standards have been met each year for a three-year period. The Executive Director shall report to the Commission upon determining that all of the performance standards have been met for three years and that the project is deemed successful. If the Commission determines that the performance standards have been met and the project is successful, the monitoring program will be scaled down, as recommended by the Executive Director and approved by the Commission. A public review shall thereafter occur every five years, or sooner if called for by the Executive Director. The work program shall reflect the lower level of monitoring required. If subsequent monitoring shows that a standard is no longer being met, monitoring may be increased to previous levels, as determined necessary by the Executive Director.

The Executive Director may make a determination on the success or failure to meet the performance standards or necessary remediation and related monitoring at any time, not just at the time of the workshop review.

4.0 ADDITIONAL PROCEDURES

4.1 Dispute Resolution

In the event that the permittee and the Executive Director cannot reach agreement regarding the terms contained in or the implementation of any part of this Plan, the matter may be set for hearing and disposition by the Commission.

4.2 Extensions

Any of the time limits established under this Plan may be extended by the Executive Director at the request of the permittee and upon a showing of good cause.

CONDITION C: SAP DATA MAINTENANCE

The permittee shall make available on a publicly-accessible website all scientific data collected as part of the project. The website and the presentation of data shall be subject to Executive Director review and approval.

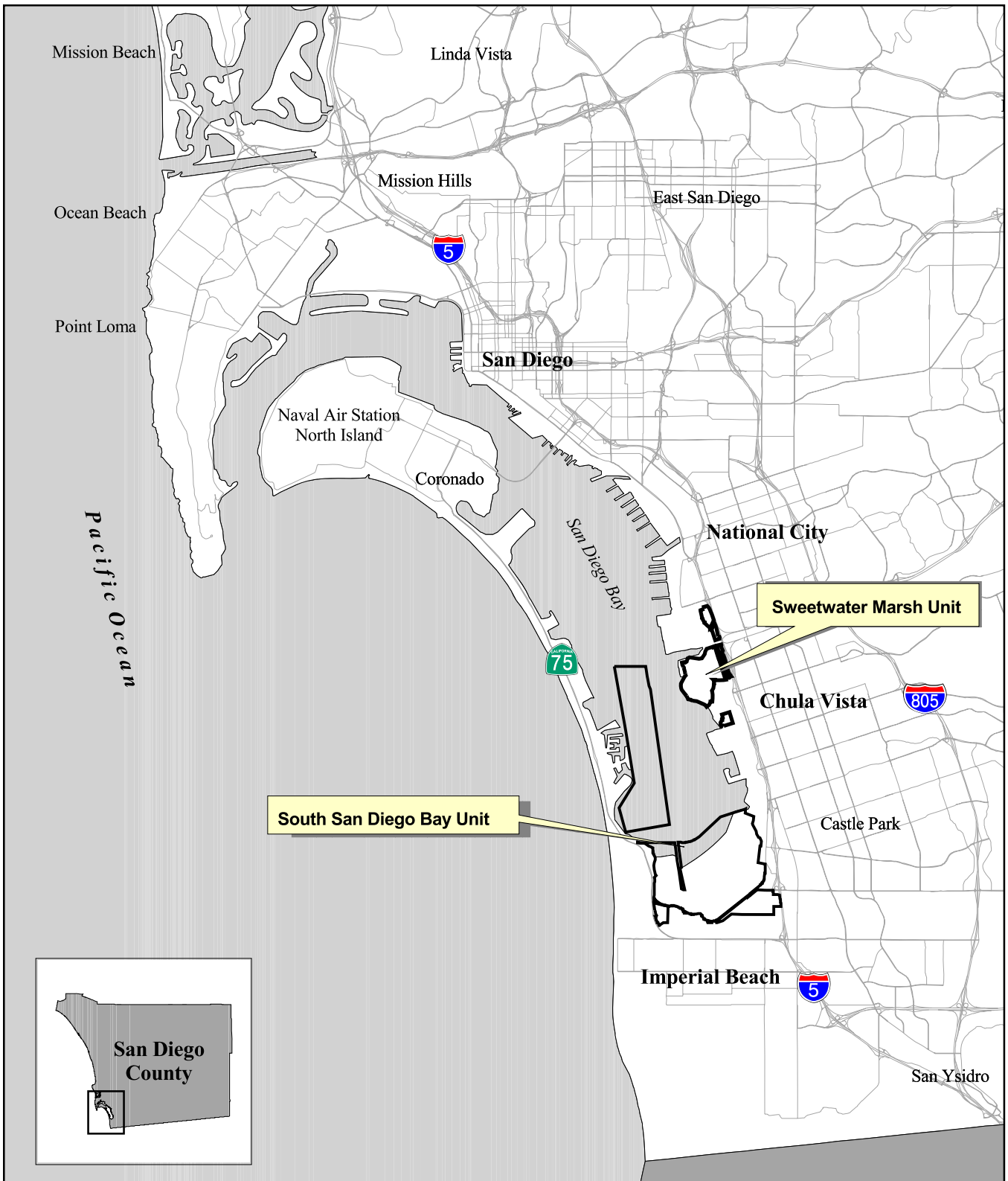
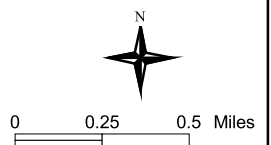


Figure 1
Location of the San Diego Bay National Wildlife Refuge



Figure 2
San Diego Bay NWR Comprehensive Conservation Plan
Project Study Area (Area of Potential Effects)




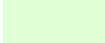







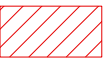
Source: USFWS, Local Agency Partnership 2000 (2 ft imagery)

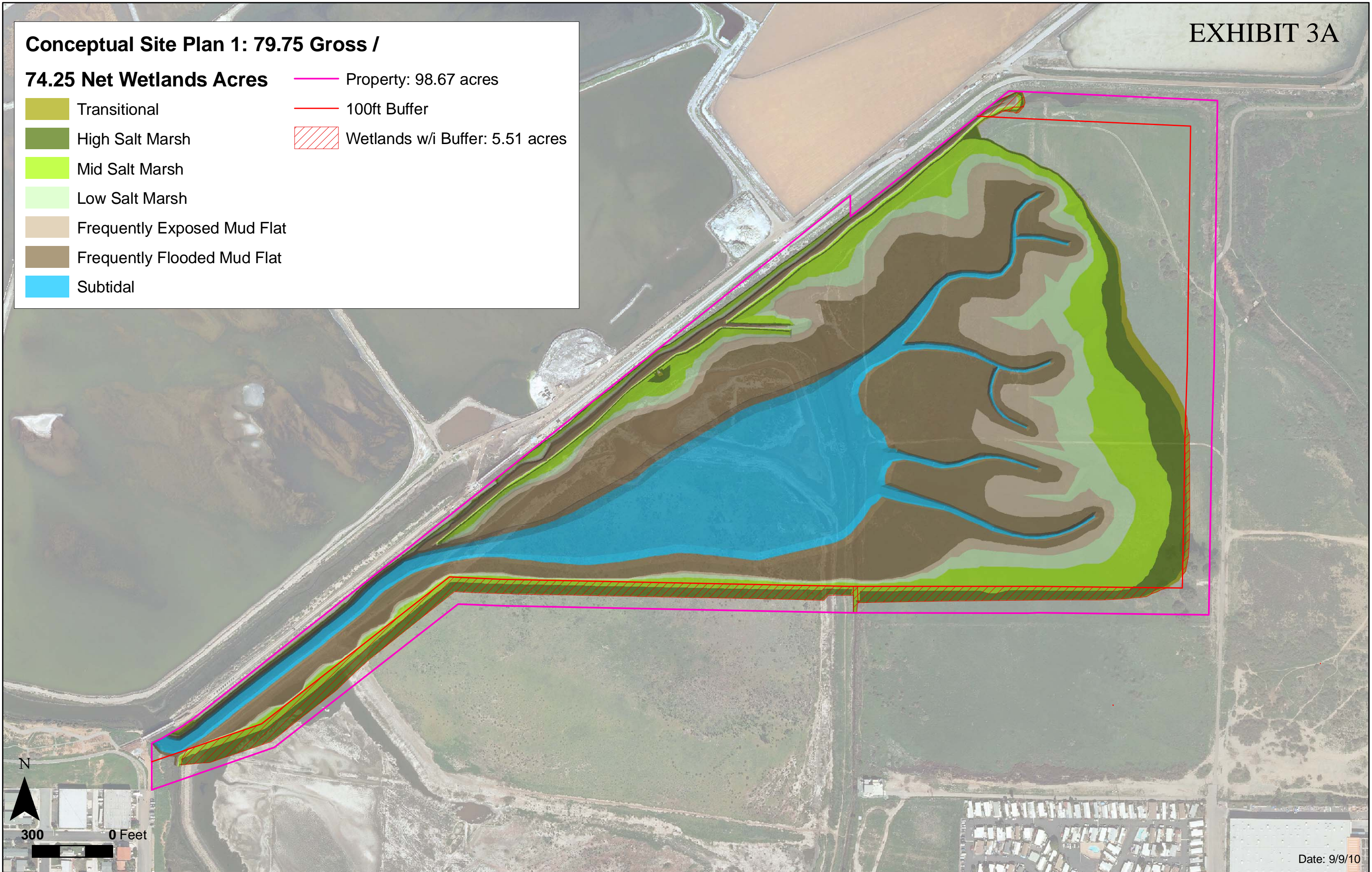
Carlsbad Field Office - 2003
 /stem/stacey/ssdbay/fig_sum/figures.apr

Conceptual Site Plan 1: 79.75 Gross /

74.25 Net Wetlands Acres

-  Transitional
-  High Salt Marsh
-  Mid Salt Marsh
-  Low Salt Marsh
-  Frequently Exposed Mud Flat
-  Frequently Flooded Mud Flat
-  Subtidal

-  Property: 98.67 acres
-  100ft Buffer
-  Wetlands w/i Buffer: 5.51 acres

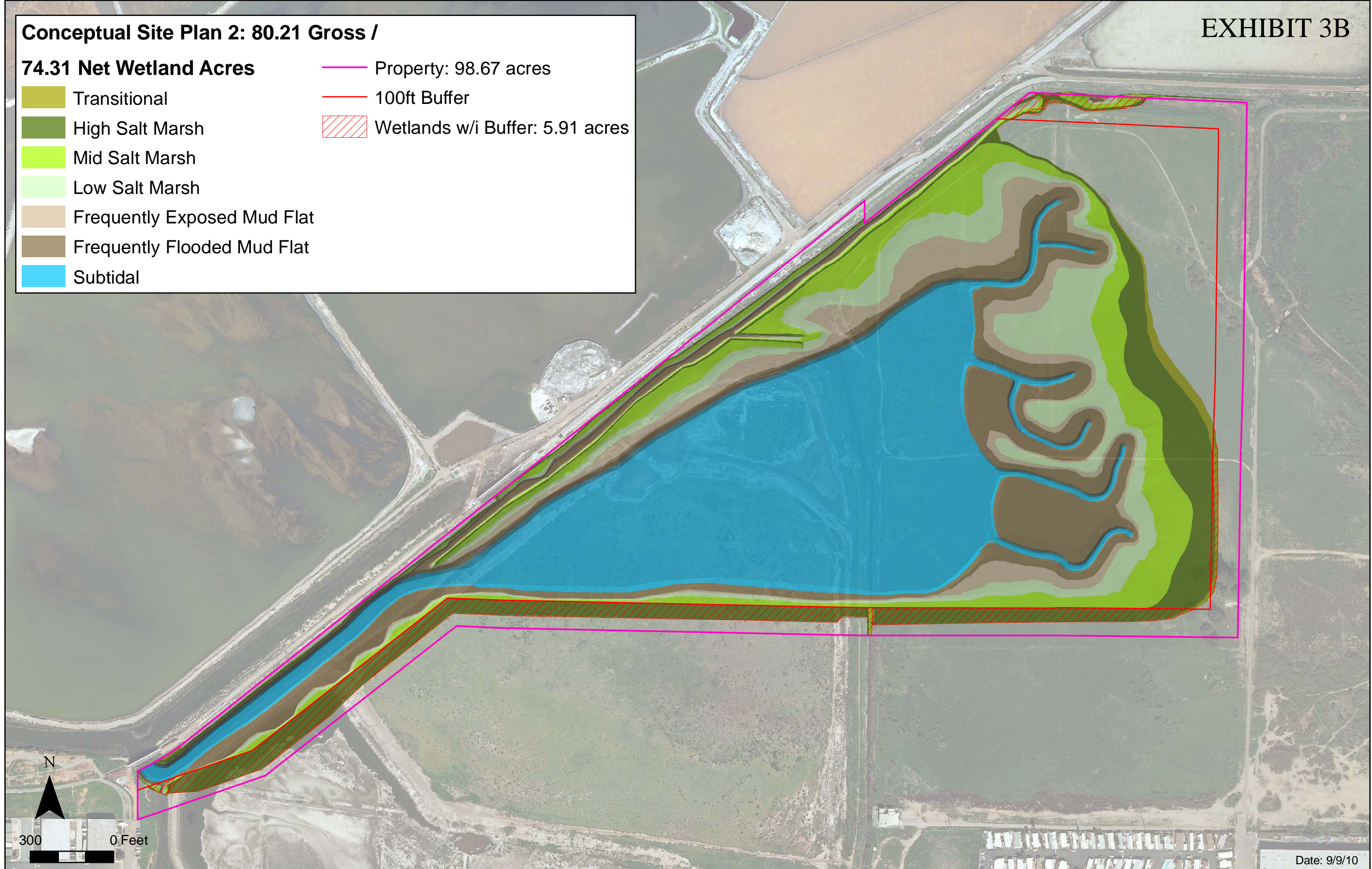


Conceptual Site Plan 2: 80.21 Gross /

74.31 Net Wetland Acres






- Transitional
- High Salt Marsh
- Mid Salt Marsh
- Low Salt Marsh
- Frequently Exposed Mud Flat
- Frequently Flooded Mud Flat
- Subtidal




- Property: 98.67 acres
- 100ft Buffer
- Wetlands w/i Buffer: 5.91 acres

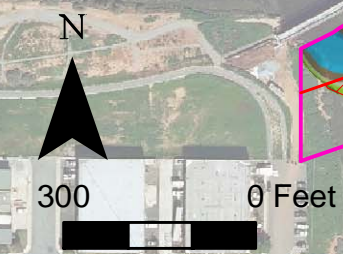
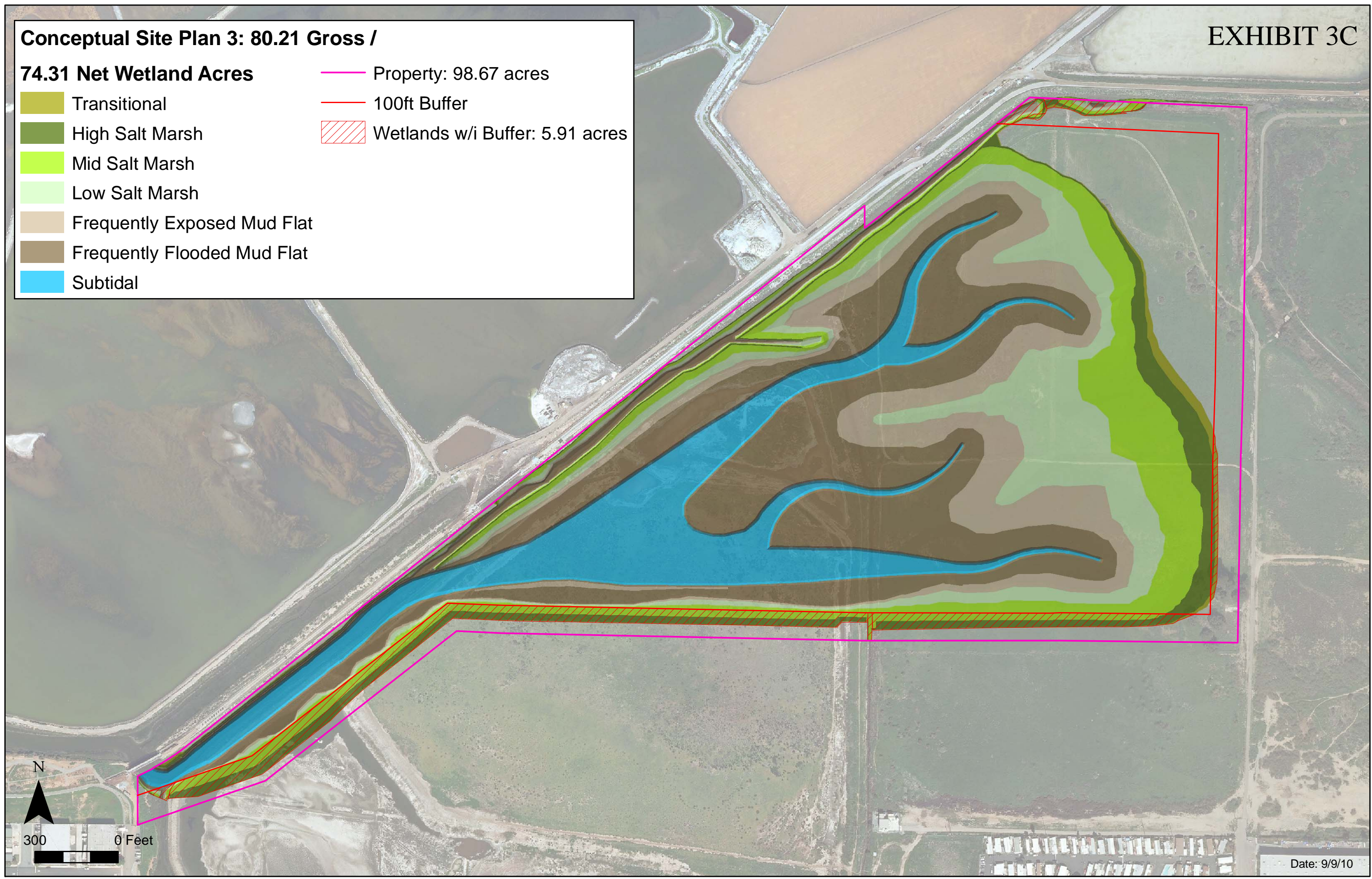


Conceptual Site Plan 3: 80.21 Gross /

74.31 Net Wetland Acres

-  Transitional
-  High Salt Marsh
-  Mid Salt Marsh
-  Low Salt Marsh
-  Frequently Exposed Mud Flat
-  Frequently Flooded Mud Flat
-  Subtidal

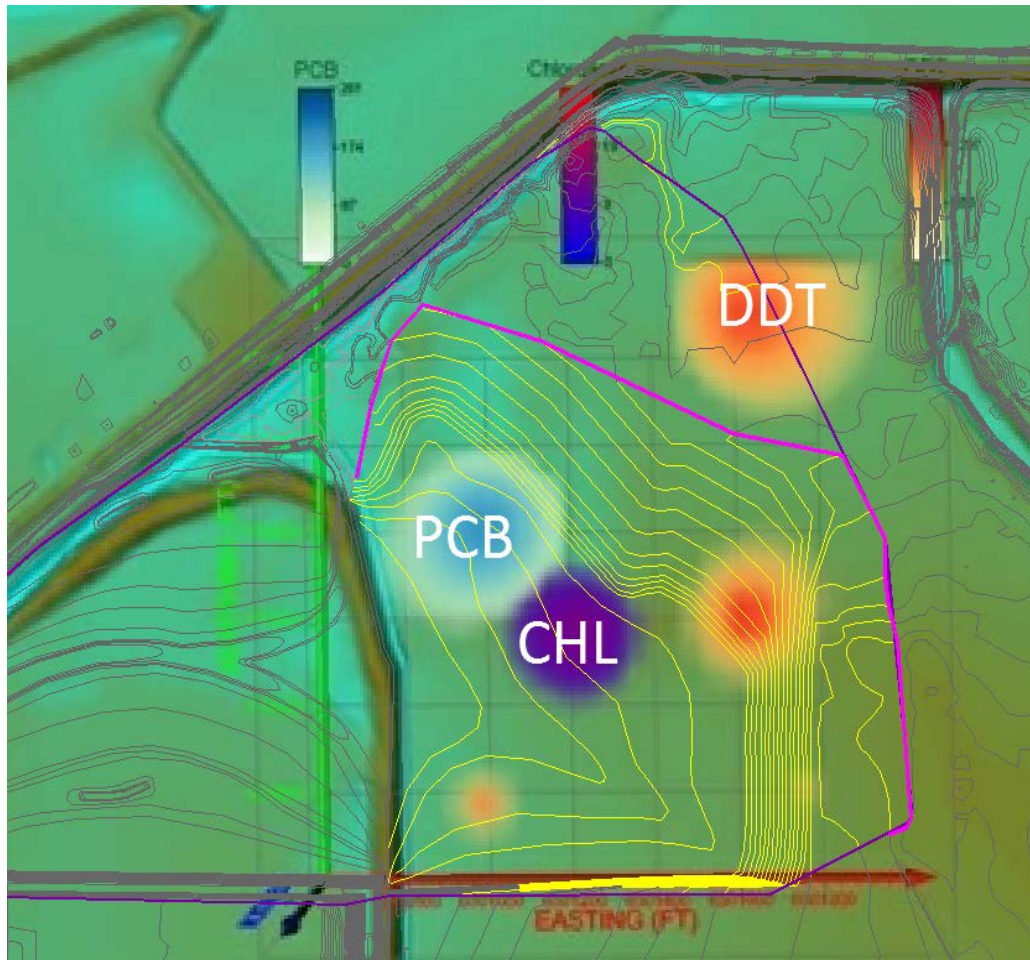
-  Property: 98.67 acres
-  100ft Buffer
-  Wetlands w/i Buffer: 5.91 acres



New Boundary of the Otay Site in response to discoveries of significant Native American artifacts

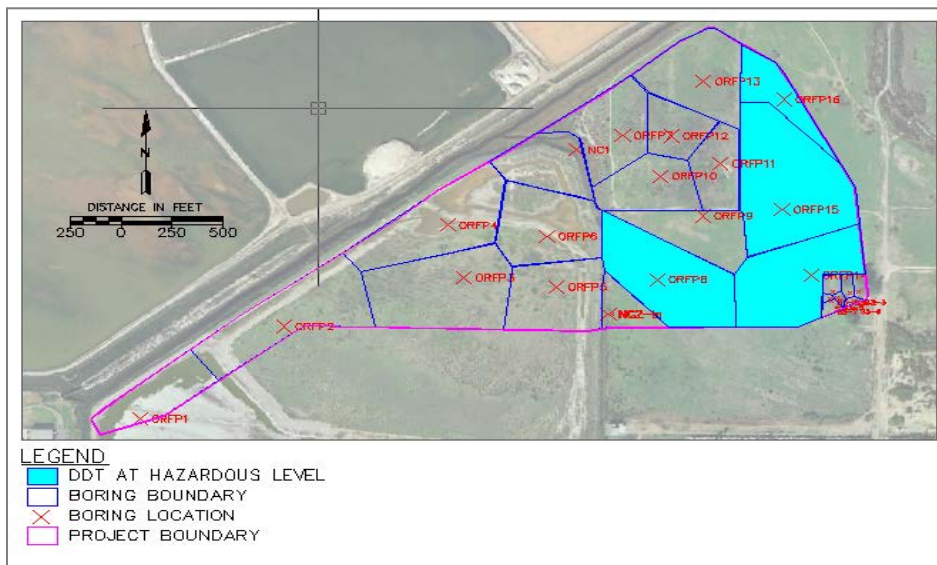


Pollutant Hotspots at the Otay River Floodplain Site



Contamination Levels at the Otay River Floodplain Site

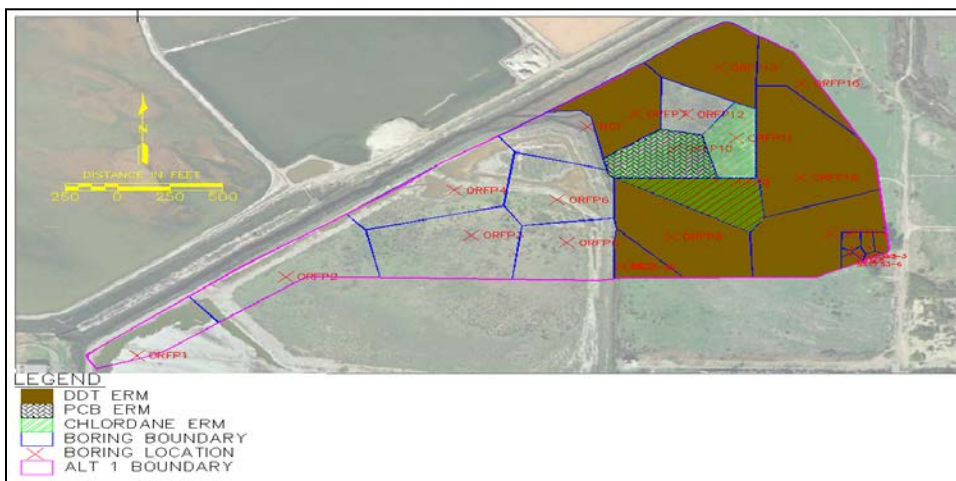
a. Hazardous Waste Areas



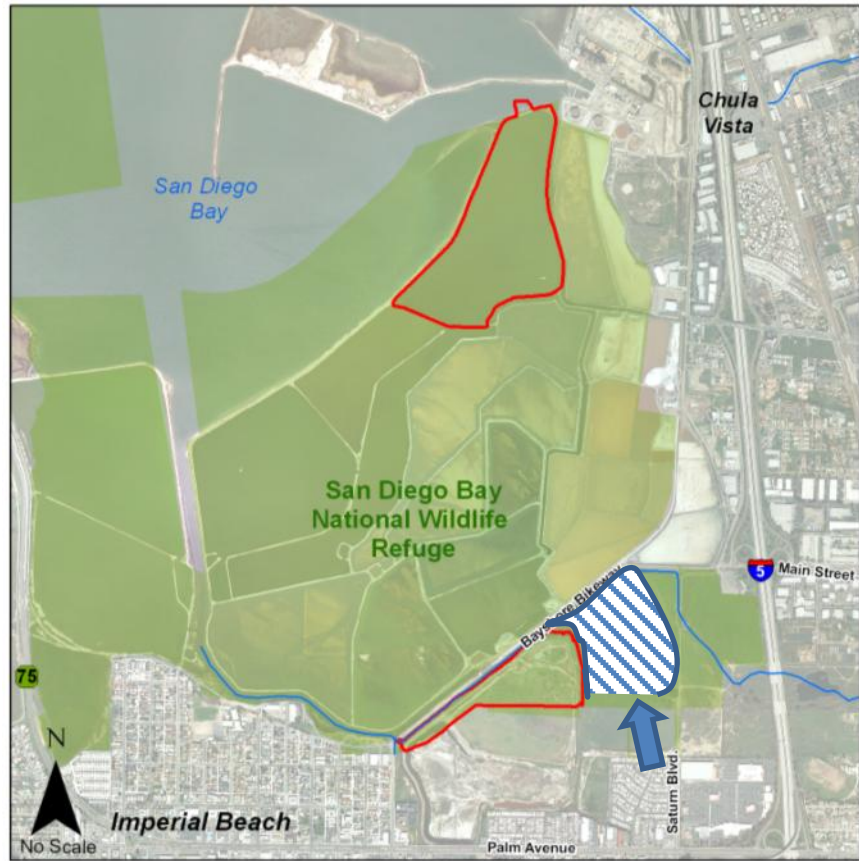
b. Areas Exceeding ERLs



c. Areas Exceeding ERMs



Poseidon's Revised Mitigation Site Plan



Proposed Integrated Restoration Project - Intertidal Alternative

Otay Site:



Pond 15 Site:



Proposed Integrated Restoration Project - Subtidal Alternative

Otay Site:



Pond 15 Site:



Proposed Integrated Restoration Project - Intertidal Alternative

Sea Level Rise Projections

Otay Site:

2016

2050



Pond 15 Site:

2016

2050



Proposed Integrated Restoration Project - Intertidal Alternative

Sea Level Rise Projections

Otay Site:

2016

2050



Pond 15 Site:

2016

2050



The South San Diego Bay Salt Pond Complex

