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STAFF REPORT: COASTAL DEVELOPMENT PERMIT

Application No.:	**9-14-0731**
Applicant:	Poseidon Water
Location:	Otay River Floodplain site and Pond 15 site within the South Dan Diego Bay Unit of the San Diego National Wildlife Refuge, San Diego County, CA (see **Exhibits 1 and 2**).
Project Description:	Restoration of a 34.6 acre disturbed upland site and restoration/conversion of a 90.9 acre salt pond to tidal wetlands. The proposed restoration project will mitigate for impacts associated with the operation of the Poseidon Carlsbad Desalination Facility as required by Special Condition 8 of CDP E-06-013.
Staff Recommendation:	Approval with conditions

SUMMARY OF STAFF RECOMMENDATION

Poseidon proposes to restore the 34.6-acre Otay River Floodplain Site and the 90.9-acre Pond 15 Site, located within the South San Diego Bay Unit of the San Diego National Wildlife Refuge (**Exhibits 1 and 2**), to coastal salt marsh habitat. The proposed project, formally called the Otay River Estuary Restoration Project (ORERP), would achieve restoration though excavation of material from the upland Otay site and fill of the subtidal Pond 15 site to create elevations and contours necessary to support coastal salt marsh habitat followed by the introduction of tidal flows (**Exhibits 3-8**). The proposed project would serve as mitigation for impacts to marine resources associated with operation of the Poseidon Carlsbad Desalination Plant.

Design and implementation of the proposed wetland restoration project is driven by requirements included in the Marine Life Mitigation Plan (MLMP) approved under Special Condition 8 of CDP E-06-013 for the Poseidon Carlsbad Desalination Plant (**Exhibit 9**). As described further in the staff report, ORERP meets the goals and objectives of the MLMP, including providing maximum overall ecosystem benefits, adequate buffers and adjacent upland areas, habitat to support sensitive species and requiring minimum maintenance. Furthermore, the proposed project provides sufficient restored wetland acreage to meet Poseidon's mitigation requirements and mitigate impacts to existing wetlands associated with the proposed project.

To ensure ORERP is successful in restoring coastal marine and wetland resources, **Special Condition 5** requires that Poseidon submit a Final Wetland Restoration Plan that includes site, grading and planting plans, a discussion of the anticipated accuracy of the proposed construction methods and a discussion of how sea level rise is incorporated into a dynamic wetland design (**See Exhibits 5 and 8**). Once constructed, **Special Condition 6** requires Poseidon to submit as-built plans including a report detailing discrepancies with the design. Under the MLMP and **Special Condition 7**, Poseidon is also required to fund an independent monitoring program to evaluate the performance of the mitigation wetlands for a 30-year period.

To address impacts related to construction of the restored wetlands: **Special Condition 4** incorporates several mitigation measures from the EIS related to mitigation of temporary wetland impacts, implementation of a project-specific stormwater pollution prevention plan (SWPPP), paleontological, archeological and tribal monitoring, water quality protections, noise minimization, eelgrass monitoring and mitigation, and maintenance of recreational resources; **Special Condition 9** requires Poseidon to submit a Plan describing how erosion and turbidity will be minimized during introduction of tidal flows to Pond 15 and the Otay site; and **Special Condition 10** requires Poseidon to implement biological pre-construction surveys and monitoring to protect sensitive species during construction. With these protections in place, construction will be carried out in a manner than minimizes impacts and protects valuable coastal resources.

For the reasons summarized above, and with implementation of the Special Conditions, the Commission staff recommends that the Commission **approve** CDP application 9-14-0731, as conditioned. The standard of review is Chapter 3 of the Coastal Act. The motion to approve with conditions is on page 4.

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I. MOTIONS AND RESOLUTIONS

Motion:

*I move that the Commission **approve** Coastal Development Permit No. 9-14-0731 pursuant to the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit 9-14-0731 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

I. STANDARD CONDITIONS

This permit amendment is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittees or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittees to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Adherence to Poseidon Coastal Development Permit #E-06-013. In addition to the special conditions set forth below, the Commission's approval of this coastal development permit is subject to all applicable conditions of Coastal Development Permit No. E-06-013, and especially Special Condition 8 and the Commission-approved Marine Life Mitigation Plan that was required, developed, and approved by the Commission pursuant to that Special Condition (included herein as **Exhibit 9**).

2. Other Permits and Approvals: PRIOR TO THE START OF CONSTRUCTION, the applicant shall provide to the Executive Director copies of all other local, state, and federal permits required to perform project-related work. These permits and approvals include:

A. Regional Water Quality Control Board: final approved 401 water quality certification.
B. U.S. Army Corps of Engineers: Clean Water Act Section 404 Individual Permit.
C. San Diego Unified Port District: Coastal Development Permit, Right-of-Entry Permit

3. Assumption of Risk, Waiver of Liability and Indemnity. By acceptance of this permit, the Permittee acknowledges and agrees (i) that the site may be subject to hazards, including but not limited to public use of navigable waters around and over the project site, as well as waves, storms, and other ocean hazards, which may worsen with future sea level rise; (ii) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

4. Environmental Impact Statement Mitigation Measures. This permit incorporates those mitigation measures identified in the Final EIS for the Otay River Estuary Restoration Project concerning wetlands, marine resources, biological resources, water quality, public access and recreation, cultural resources and hazards that are attached to this report as **Exhibit 10.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the following Plans, required as part of this condition, shall be submitted to the Executive director for review and written approval:

a. A project-specific stormwater pollution prevention plan (SWPPP) (MM-GEO-1)
b. A post-construction erosion control plan (MM-GEO-2)
c. A revegetation plan for slope protection (MM-VIS-1)

d. A hazardous substance management, handling, storage, disposal, and emergency response plan (MM-HYD-3)

5. Final Wetland Restoration Plan. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Applicant shall submit for review and written approval of the Executive Director a Final Wetland Restoration Plan for the Otay and Pond 15 sites, including mitigation for all wetland impacts associated with the proposed project. The Plan shall be in substantial conformance to the Draft Restoration Plan submitted in May 2011 as part of the CDP application and incorporating changes described in the final EIS and in the Project Revisions Document submitted to staff on April 8, 2019. At a minimum, the Plan shall include:

a. A detailed site plan of the proposed restoration and wetland impact areas that substantially conforms to the project details presented in the EIS as revised by the April 8, 2019 submittal and as shown generally on **Exhibits 3-8**. The Plan shall include a map that delineates all restored habitat types and buffer areas and clearly identifies all areas of permanent and temporary impact to existing wetlands as described in Section E of the staff report. The map shall include exact acreages and elevations for each area, buffers, as well as the types of impact.

b. Graphics depicting the design of the different habitat areas (i.e., subtidal, mudflat, low, mid and high marsh) and habitat acreage tables within each restoration site for a series of sea level rise scenarios starting at current sea level and increasing by one foot increments to 10 feet above current sea level. The Plan shall also include a discussion of how sea level rise is incorporated to develop a dynamic wetland design (see Section F of the staff report).

c. Applicable wetland mitigation ratios. Wetland impacts associated with implementation of the approved project shall be mitigated at the following ratios:
    i. Permanent conversion of wetland to upland shall be mitigated at a 4:1 ratio (restored area:impact area).
    ii. Permanent conversion of one wetland type to another shall be mitigated at a 1:1 ratio.
    iii. Conversion of wetland to high tide refugia areas shall be mitigated at a 1:1 ratio.
    iv. Temporary impacts to existing wetlands shall be restored at a 1:1 ratio to the initial condition within one year of the end of construction.

d. A final grading plan for all project areas that is in substantial conformance to the grading plan described in the EIS.

e. A discussion of the anticipated accuracy of final grading based on proposed construction methods. This discussion should include measures Poseidon will implement to minimize discrepancies between the approved design and the as-built condition.

f. A Plan for monitoring and remediation of all wetland areas that will be temporarily impacted by project construction. This plan shall include:
    i. Documentation of the boundary and condition of the wetland area, including data on existing elevation and vegetation cover and species.
    ii. A description of the temporary impact, including volumes of fill and proposed elevation changes.

iii. Description of post-construction restoration actions.
iv. Description of monitoring protocols and timelines to assess the restoration of each impacted site.
v. Provision for submittal of a final post-construction report to be submitted to the Executive Director within 60 days of the one year anniversary of the completion of construction. This report shall assess the success of the recovery at each impacted site as compared to pre-construction conditions, as determined by comparing pre and post-construction data on vegetation species and cover.
vi. Success Criteria. A wetland area that has been temporarily impacted shall be considered fully recovered, if, after one year, the vegetation cover has recovered to 85% of the pre-construction vegetation cover and has at least 90% of the species present before construction commenced.

g. A description of the goals of the restoration plan. The goals should also include, as appropriate, any changes to site topography, hydrology, vegetation types, presence or abundance of sensitive species, and wildlife usage, and any anticipated measures for adaptive management in response to sea level rise or other climatic changes. In addition, the goals shall describe how the wetlands mitigation requirement (described in Section IV.D of the staff report) will be met within the larger restoration site.
h. A description of planned site preparation and invasive plant removal.
i. A planting plan including the planting palette (seed mix and container plants), planting design, source of plant material, methods and timing of plant installation, erosion control measures, duration and use of irrigation, and measures for remediation if success criteria (performance standards) are not met. The planting palette shall be made up exclusively of native plants that are appropriate to the habitat and region and that are grown from seeds or vegetative materials obtained from local natural habitats to protect the genetic makeup of natural populations. Horticultural varieties shall not be used. The planting palette shall also include California box-thorn (*Lycium californicum*), Estuary seablite (*Suaeda esteroa*) and Wooly seablite (*Suaeda taxifolia)* consistent with the requirements of EIS mitigation measure MM-BIO-5, incorporated into this CDP under Special Condition 4.
j. A provision for commencing construction with six months of the approval of the Final Restoration Plan.

The Permittee shall undertake development in conformance with the approved plans unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally required.

6. Submittal of post-construction "as-built" plans.

a. Prior to the commencement of construction and again at the completion of construction, the Permittee shall submit to the Executive Director for review and written approval finalized plans and digital files (i.e., ArcView, ArcMap and Autocad) of project components that will allow for the independent assessment of the accuracy of the "as built" plans to determine compliance with the requirements of CDP E-06-013. The Permittee shall document the physical and biological "as built" condition, including measurements of actual impacts to wetlands habitat, within 30 days of completion of construction at each site.

b. The "as-built" plans shall be accompanied by a report that identifies, quantifies and assess the significance of any discrepancies between the design and the "as-built" condition.
c. If the "as-built" plan shows any greater impacts than are approved under this CDP, the Permittee shall submit an application to amend this CDP to account for the additional impacts within 90 days, unless the Executive Director determines that an amendment is not legally required.
d. Within 6 months of the completion of construction, the Permittee shall submit any necessary changes to the graphics and tables depicting anticipated habitat area changes under various sea level rise scenarios (required under Special Condition 5.b), based on the actual "as-built" wetland condition.

7. **Independent Wetland Performance Monitoring Program.** This special condition is a reiteration of the provisions of the MLMP, required by Special Condition 8 of CDP E-06-013 (**Exhibit 9**), requiring construction phase monitoring and post-restoration performance monitoring of the required mitigation site independent of Poseidon and is included here as a requirement of this Permit as well.

In accordance with the provisions of Special Condition 8 of CDP E-06-013 and the approved MLMP, monitoring, management (including maintenance), and remediation shall be conducted over a 30-year period, which corresponds to the estimated operating life of Poseidon's Carlsbad Desalination Plant. An independent monitoring program, carried out under the direction of the Executive Director and funded by Poseidon, shall be conducted to measure the success of the wetland in achieving restoration goals specified in the Final Restoration Plan and performance standards specified in the MLMP. The Monitoring Plan shall measure performance against a dynamic wetland design that reflects anticipated changes in habitat due to sea level rise. Poseidon shall be fully responsible for any failure to meet the goals and performance standards during the monitoring period. In accordance with provisions of Special Condition 8 of CDP E-06-013 and the MLMP, upon the Executive Director's determination that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with Poseidon, which shall be immediately implemented by Poseidon with direction from Commission staff and the Science Advisory Panel.

The independent wetland post-restoration monitoring shall be implemented in accordance with a monitoring plan that will be prepared by Commission staff and contract scientists in consultation with Poseidon and appropriate wildlife agencies, and approved by the Executive Director. (See Section IV.F. for discussion of independent monitoring plan).

Independent monitoring shall be performed under the direction of the Executive Director during and immediately after each stage of construction of the wetland restoration project to ensure that the restoration work is conducted according to the approved plans. Such construction phase monitoring shall be performed in accordance with a biannual work program to be approved by the Commission pursuant to the requirements of the MLMP, and shall be coordinated with Poseidon. This independent construction phase monitoring is separate from the applicants' responsibilities to ensure that the restoration project is constructed according to approved plans (Special Condition 5), to conduct biological

monitoring (Special Condition 10), or to fulfill monitoring requirements imposed by other permitting agencies, such as, but not limited to, biological and water quality monitoring.

8. Maintenance and Management. Maintenance and management of the restoration project components shall be the responsibility of Poseidon for the duration of the minimum 30-year performance monitoring period as required in the MLMP. Once the performance monitoring period concludes, Poseidon shall transfer maintenance and management responsibilities to the USFWS. Maintenance and management shall be performed as follows:

a. Both wetland and upland areas of the restoration shall be maintained to control invasive plants and to assure that native plants become established.
b. If performance monitoring indicates that the Otay River channel, Otay site inlet channel, Pond 15 inlet channel or other location is either accumulating sediment or eroding to the extent that it is adversely affecting performance of either the Otay or Pond 15 sites, Poseidon shall be responsible for addressing the problem. Any proposed development necessary to address sediment in the Otay River channel or Pond 15 inlet shall require additional approval from the Commission.

9. Pollution Prevention Plan for Introducing Tidal Flows to Pond 15 and the Otay site. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Applicant shall submit to the Executive Director for review and written approval a Pollution Prevention Plan (PPP) for Introducing Tidal Flows to Pond 15 and the Otay site. The Plan shall describe how tidal flows will be introduced into the two wetland sites, and how the existing berms separating Pond 15 from San Diego Bay and the Otay site from the Otay River will be breached and what measures shall be in place to ensure that the habitat and water quality within San Diego Bay and the Otay River are not adversely affected during or after the berm is breached. The Plan shall be developed in consultation with the USFWS and the RWQCB and shall incorporate the requirements of EIS mitigation measures MM-HYD-1 and MM-HYD-2. In addition, the Plan shall include the following components:

a. A detailed methodology and timeline for excavation of the breaches in the existing berm and introduction of tidal flows into the newly restored areas. The Plan should specifically address phasing of the proposed breaches and include provisions for sequential timing of the breaches with time in between for post-breach monitoring.
b. A staging plan, including types and locations of equipment, stockpiles, and proposed travel routes for construction equipment entering and exiting the breach areas.
c. A description of all sediment control measures to be implemented before, during and after the berm is breached in each location. The Plan should include a site plan map indicating the location of all measures. These measures shall include the following:
    i. Silt fences, silt curtains, coffer dams and/or other sediment control devices shall be deployed near the breaches to prevent any sediment from flowing into the Slough. If the silt fences are not adequately containing sediment, construction activity shall cease until remedial measures are implemented that prevents sediment from entering the surrounding waters.

ii. Sediment sources shall be controlled using fiber rolls, silt fences, sediment basins, and/or check dams that shall be installed prior to or during grading activities and removed once the site has stabilized.

iii. Erosion control may include seeding, mulching, erosion control blankets, silt fences, plastic coverings, and geotextiles that shall be implemented after completion of construction activities.

iv. The use of erosion and sediment control products (such as fiber rolls, erosion control blankets, mulch control netting, and silt fences) that incorporate plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers) is prohibited in order to minimize wildlife entanglement and plastic debris pollution.

v. Appropriate energy dissipation devices shall be used to reduce or prevent erosion as tidal flows are introduced into newly restored areas.

d. A detailed monitoring plan that includes protocols for:

i. Baseline water quality monitoring. The Permittee shall conduct monitoring of baseline conditions in the Bay and the Otay River channel, including turbidity, pH, temperature, dissolved oxygen and other appropriate water quality parameters. Monitoring shall be conducted at different points in the tidal cycle and over a sufficient time period to adequately characterize the variability in baseline water quality conditions in the Bay and Otay River channel.

ii. Monitoring of turbidity, pH, temperature, dissolved oxygen and other appropriate water quality parameters in the Bay and the Otay River channel and the newly restored wetland areas immediately before, during and after tidal flows are introduced into newly restored areas. Monitoring shall continue throughout the site stabilization period to ensure that water quality is not being degraded. The Plan shall identify thresholds for turbidity and other water quality parameters such that waters with measurements of turbidity and/or other parameters exceeding a certain threshold shall be contained and prevented from being discharged into receiving waters. The Plan shall also identify monitoring protocols. The turbidity and other water quality thresholds shall be developed in consultation with the RWQCB and USFWS and explained in the Plan. If sediment is not being contained adequately, as determined by visual observation or turbidity measurements, the activity shall cease until corrective measures are taken to remedy the situation.

e. A description of remedial actions that can be taken immediately by the Permittee if monitoring results indicate that water quality parameters are on a trajectory to exceed established thresholds or have exceeded established thresholds.

f. If monitoring results indicate that water quality thresholds in receiving waters are exceeded, the Permittee shall immediately stabilize the site, stop work, and notify the Executive Director, USFWS, and RWQCB. After consulting with the Executive Director and other agency staff, the Permittee shall implement remedial measures and continue monitoring all water quality parameters. Before continuing work, the Permittee shall submit a Supplemental Pollution Prevention Plan to the Executive Director for review and written approval describing what project-related activities

lead to the exceedance, what sediment control measures were in place, what remedial measures were implemented after the exceedance was discovered and what measures will be implemented in the future to ensure another exceedance is avoided.

g. The Permittee shall submit a Final Report within 60 days of the completion of monitoring activities associated with breaching the existing berm and reintroducing tidal flows to newly restored areas. The report shall include a description of all related construction activities and sediment control measures, results of all monitoring activities, and a detailed discussion of any water quality parameter exceedances.

The Permittee shall undertake development in conformance with the approved plans unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally required.

10. Biological Resource Protection Plan. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director a Biological Resource Protection Plan. The purpose of the Plan is to document biological resources on each site, including sensitive habitat areas and special-status species and provide for biological monitoring during construction.

a. Pre-Construction Surveys. NO MORE THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF PROJECT ACTIVITIES AT A GIVEN SITE, pre-construction surveys shall be conducted by a qualified biologist approved by the Executive Director for special-status plant and wildlife species and nesting birds protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code section 3503 and to document the boundaries of existing wetlands and other sensitive habitat areas identified by the biologist. Surveys shall incorporate the following:

   i. Appropriate survey methods and timeframes shall be established by the consulting qualified biologist and described in the Plan.

   ii. If work on a project site ceases for a period of 30 days or more, a new pre-construction survey shall be conducted prior to continuing with construction or decommissioning activities.

   iii. Pre-construction surveys for special-status species shall target estuary seablite, wooly seablite, California box-thorn, Belding's savannah sparrows, Ridgeway's rails, California least terns, western snowy plovers, burrowing owls and other sensitive species observed as reported in the EIS. If these or any other listed species are encountered, the Permittee shall consult with the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW) and the Executive Director before continuing with work.

   iv. A site plan shall be prepared for each site that depicts wetlands, vegetation, special-status species and any nests detected. The Plan shall include staging areas, ingress and egress routes at both a site scale and on a smaller scale for each pipeline segment and oil infrastructure removal areas.

   v. NO MORE THAN 15 DAYS AFTER COMPLETION OF THE SURVEY, a pre-construction survey report shall be submitted to the

Executive Director for review and written approval. The report shall include the site plan, a narrative description of each site and work area, results of the survey including species richness and percent cover, and acreage of rare species. The report shall include a description of the potential impacts that will occur from the proposed work including impacts caused by ingress and egress, excavation, and/or re-contouring and whether the impacts will likely be temporary or permanent.

b. Nesting Birds. Construction shall be avoided during the nesting season (February 15 through September 30) to the greatest extent feasible, but if construction must occur during this time and is authorized by the San Diego Bay NWR Refuge Manager, NO MORE THAN 14 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES, a qualified biologist, approved by the Executive Director, shall conduct a pre-construction survey for the presence of nesting birds. If an active nest of any bird including a Federal or State-listed threatened or endangered bird species, bird species of special concern, or any species of raptor is identified during such preconstruction surveys, or is otherwise identified during construction, the Permittee shall notify all appropriate State and Federal agencies within 24 hours, and shall develop an appropriate action plan specific to each incident that shall be consistent with any recommendations of those agencies. The Permittee shall notify the Executive Director in writing within 24 hours of identifying such a nest and consult with the Executive Director regarding the determinations of the State and Federal agencies. At a minimum, if the active nest is located within 300 feet of construction activities (within 500 feet for raptors), the Permittee must ensure that noise levels do not exceed 65 dB at the nest and that nesting birds are not disturbed by construction-related activities, and shall submit a plan to the Executive Director, for review and written approval, demonstrating how construction activities will be modified to avoid, minimize and mitigate impacts to nesting birds, including, but not limited to, such measures as buffer zones around nests, sound blocking BMPs, limits on duration of construction activities, and limits on the location of construction-related machinery and activity. If construction activity noise levels exceed a peak of 65 dB at the nest site(s), sound mitigation measures such as sound shields, blankets around smaller equipment, use of mufflers, and minimizing the use of back-up alarms shall be employed. If these sound mitigation measures do not reduce noise levels, construction within 300 ft. (500 ft. for raptors) of the nesting areas shall cease and shall not commence again until either new sound mitigation can be employed or until the nest(s) is vacated, juveniles have fledged and there is no second attempt at nesting.

c. Biological Monitoring. The Permittee shall employ or have under contract a biologist(s), approved by the Executive Director, during the duration of approved construction and restoration activities. The Permittee shall ensure that the biologists(s) conducts monitoring during any project activities involving mobilization, ground disturbance, grading, soil movement, or any other activities that could affect biological resources including special-status species, wetlands, coastal waters and marine species in accordance with the following:

    i. Based on results of the pre-construction survey required in part (a) above**,** the biologist shall clearly mark all sensitive biological resources located within 25 feet of any project-related activity. The biologist shall maintain

a 10-foot buffer around any individual special-status plant unless otherwise approved in this permit or by the Executive Director under part (a).

ii. Conduct worker training with all project-related personnel to identify the location and types of sensitive biological resources on and near the project site and the measures to be taken to avoid impacts to these resources.

iii. Daily surveys for the presence of rails and other sensitive bird species shall be conducted at the Otay River crossing, in the Palomar channel, and in other potential rail habitat areas in the vicinity of the project. If sensitive species are present, an air horn or cracker shells shall be deployed to move the birds off the site prior to commencement of construction activities. If noise proves ineffective, physical presence may be used to haze birds and move them to safer parts of the San Diego Bay NWR. Such monitoring shall continue throughout the day to discourage rails and other birds from moving back into the project site, particularly during periods when construction equipment is not operational, such as during breaks.

iv. The biologist(s) shall require a halt to any project activities when he or she determines that continuing the activities would result in an unauthorized adverse impact to coastal waters, wetlands, and other biological resources. The biologist(s) shall inform the Permittee what measures are needed to address the impact and may allow activities to resume after necessary measures are implemented.

v. An annual summary report, including monitoring results and avoidance measures implemented shall be submitted to the Executive Director before December 31 of each year that construction activities are ongoing.

vi. If biological monitoring results indicate fill or dredging or any other adverse impacts to any wetland areas or sensitive biological resources that are not approved under this permit, the Permittee shall submit an application to amend this permit to address these impacts and fully restore any disturbed wetlands or sensitive biological resources to its pre-project condition, unless the Executive Director determines that no such permit amendment is legally required.

The Permittee shall undertake development in conformance with the approved plans unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally required.

11. Liability for Costs and Attorneys' Fees. By acceptance of this permit, the Applicant/Permittee agrees to reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys' fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys' fees that the Coastal Commission may be required by a court to pay -- that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Applicant/Permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such

action against the Coastal Commission. WITHIN 45 DAYS OF COMMISSION ACTION, the Permittee shall enter into a separate written agreement with the Executive Director agreeing to reimburse the Coastal Commission for all court costs and attorney's fees, consistent with the requirements of this condition.

IV FINDINGS AND DECLARATIONS

A. PROJECT BACKGROUND AND PERMITTING HISTORY

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 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 caused by the facility's use of estuarine water and entrainment of marine organisms. The MLMP, developed jointly by staff and Poseidon, was approved by the Commission on August 8, 2008 (see **Exhibit 9**). On November 3, 2009, after a determination by staff that the prior to issuance conditions had been met, CDP E-06-013 was issued.

Marine Life Mitigation Plan and Site Selection

The approved MLMP establishes minimum standards and objectives needed to ensure adequate mitigation for marine life impacts caused by the Carlsbad desalination facility. Specifically, it requires restoration of 66.4 acres of estuarine wetland habitat within the Southern California Bight.[1] The Plan also includes performance standards, timing restrictions, monitoring requirements, and other elements needed to ensure successful and adequate mitigation. In addition, 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.

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 1 and 2**) 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.

After being granted a one-month extension, Poseidon submitted materials on its proposed mitigation site and preliminary restoration plan on September 13, 2010. 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

[1] 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, for a total of 66.4 acres.

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.[2]

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.

After this approval, Poseidon conducted a series of site-specific studies in support of development of restoration alternatives (see Sections F and H for additional detail). Based on new information gathered from these studies, Poseidon proposed a revised mitigation site and preliminary restoration plan that reduced the footprint of proposed restoration at the Otay River Floodplain and added restoration of a nearby salt pond. On December 11, 2013, the Commission approved the revised mitigation site and preliminary restoration plan. On May 5, 2014, as required by CDP E-06-013,[3] Poseidon submitted a CDP application for the mitigation project.

Over the next four and a half years, Poseidon's CDP application remained incomplete as Poseidon worked with the U.S. Fish and Wildlife Service (USFWS) to develop the technical studies and analysis for the Environmental Impact Statement (EIS) required under the National Environmental Protection Act (NEPA). The Draft EIS was issued on October 21, 2016. This was followed by the Final EIS, issued on May 18, 2018 and the Record of Decision, which was posted to the Federal Register on October 31, 2018.

[2] The RWQCB later determined that is requirement was satisfied by the additional 11 acres of mitigation Poseidon agreed to add to the original 55.4 acre requirement.

[3] The original deadline for submitting the CDP application for the mitigation project was within two years of issuance of the Carlsbad desalination facility CDP or November 2011. Poseidon was granted two extensions of this deadline by the Commission's Executive Director: (1) a one year extension in November 2011 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, and (2) an additional 18 month time extension in October 2012 to allow Poseidon to explore the potential of incorporating additional salt pond restoration in South San Diego Bay into the mitigation project. With these two extensions, the deadline for CDP application submittal was May 3, 2014.

Project Site

As described above, Poseidon proposes to fulfill its mitigation requirement through creation and substantial restoration of two sites within the South San Diego Bay Unit of the San Diego NWR (**Exhibits 1 and 2**). Although the USFWS manages the entire site, it owns just part of the land. The western portion of the site was purchased by the State Lands Commission (SLC) using Port district airport user fees and is leased to USFWS for its use as part of the San Diego Bay NWR. The SLC has the authority to enter into 49-year leases and has done so for other mitigation sites (including the one currently held by the USFWS). The SLC can consider entering into subsequent 49-year leases when the original lease expires. As part of the EIS process, the SLC submitted a letter on December 5, 2016 to the USFWS confirming its jurisdiction over the Otay and Pond 15 sites as well as the existing lease issued to the USFWS for the creation and continued maintenance of the South San Diego Bay Unit of the San Diego NWR, which will expire on April 30, 2048. The letter also stated that SLC staff had reviewed the proposed project and determined that it did not require further lease approval.

Commission Oversight and independent monitoring

In addition to minimum standards and objectives required to achieve adequate mitigation of impacts to marine resources, the MLMP also establishes an administrative structure for operation and funding of independent monitoring and technical oversight of the mitigation project (**Exhibit 9**). The MLMP specifically: (1) enables the Commission to retain contract scientists and technical staff to assist the Commission in carrying out its oversight and monitoring functions, (2) provides for a scientific advisory panel to advise the Commission on the design, implementation, monitoring, and remediation of the mitigation projects, (3) assigns financial responsibility for the Commission's oversight and monitoring functions to the Permittee and sets forth associated administrative guidelines, (4) provides for periodic public review of the performance of the mitigation projects, and (5) requires that all scientific data collected as part of the project be available to the public through a publicly-accessible database.

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. The SAP has provided valuable insight and guidance to staff during the review and development of Poseidon's proposed mitigation project and will continue this role during the post-project monitoring and compliance phase. The SAP includes Dr. Richard Ambrose, Professor in the Department of Environmental Health Sciences, University of California Los Angeles, Dr. Peter Raimondi, Professor in the Department of Ecology and Evolutionary Biology, University of California, Santa Cruz and Dr. Brett Sanders, Professor of Civil and Environmental Engineering, Urban Planning and Public Policy, University of California, Irvine.

B. PROJECT DESCRIPTION

Poseidon proposes to restore the 34.6-acre Otay River Floodplain Site and the 90.9-acre Pond 15 Site, located within the South San Diego Bay Unit of the San Diego National Wildlife Refuge (**Exhibits 1 and 2**), to coastal salt marsh habitat. The proposed project, formally called the Otay River Estuary Restoration Project (ORERP), would achieve restoration though excavation of material from the upland Otay site to lower the elevation and create contours necessary to support coastal salt marsh habitat followed by the introduction of tidal flows to the site from the adjacent Otay River. Material excavated from the Otay site would be transported to the Pond 15 site and used as fill to raise the elevation of the existing subtidal salt pond to levels suitable to support coastal salt marsh habitat, followed by introduction of tidal flows into the site through breaching of the northern berm that separates Pond 15 from San Diego Bay (**Exhibits 3-8**).

More specifically, at the Otay site, Poseidon proposes to excavate approximately 320,000 cubic yards of soil to create 34.56 acres of subtidal, intertidal mudflat, intertidal salt marsh, transitional marsh and upland habitat areas (**Exhibits 3-5**). **Table 1** provides the acreage breakdown for each habitat area. Material would be excavated and initially transported to the staging area using a combination of bulldozers, front loaders, backhoes, graders, scrapers, excavators and trucks (**Exhibit 11**). Approximately 280,000 cubic yards of this excavated material would be used beneficially as fill to increase the elevations in Pond 15 and as fill for dikes and levees. Material would be moved by truck along the route generally depicted in **Exhibit 12** but incorporating a post-EIS change that results in the trucks entering Pond 15 on the north end instead of the southeast end. The EIS estimates approximately 56,000 truck trips will be necessary to move material approximately 7 miles between the Otay site and the Pond 15 site. The remaining excavated material (30,000 – 40,000 cubic yards) would be spread over contaminated soils on the site to the east of the Otay site to serve as an exposure reduction cover (see Section F for additional details).

At the Pond 15 site, Poseidon proposes to create 90.9 acres of subtidal, intertidal mudflat, intertidal salt marsh, transitional marsh and upland habitat areas (**Exhibits 6-8**). **Table 1** provides the acreage breakdown for each habitat area. Poseidon proposes to begin construction work by dewatering the existing salt pond. Approximately 140 million gallons of high salinity water would be pumped from Pond 15 into adjacent active salt Ponds 24 and 25. Once the site is dewatered, approximately 50,000 to 60,000 cubic yards of material would be excavated from the Pond 15 site and then reused, along with fill material from the Otay site to raise the elevation of the existing salt pond to elevations appropriate for tidal salt marsh habitat. Fill would first be placed within the site at the base of the levees and then spread outward from the levees toward the center of the pond. Once the fill reaches the approximate proposed ground elevations for tidal marsh, construction equipment will be used to grade the site to the desired contours and slope variations.

In addition, the proposed project includes several elements necessary to implement ORERP (**Exhibit 2**):

- Southern Otay River Floodplain Levee Relocation. An existing earthen levee along the southern bank of the Otay River on the north side of the Otay site would be relocated to

the southern boundary of the site. The levee would provide the same level of flood protection to areas south of the Otay site that is provided by the existing levee.

- Internal Levee Modifications to Salt Ponds 13, 14, and 15. To facilitate restoration of Pond 15, modifications to the existing water flow connections and levee system are proposed to remove Pond 15 from the solar salt operation and establish new connections between primary Ponds 13 and 14 and the secondary pond system. This will be accomplished, in part, by closing and reinforcing the levees between Ponds 15 and 14, Ponds 15 and 13, and Ponds 13 and 14 (Features 11 and 12 on **Exhibit 2**). All salt pond levees disturbed by construction will be restored to conditions appropriate for accommodating salt works maintenance vehicles, where applicable, and for supporting seabird and shorebird nesting.
- External Levee Modification to Pond 15. Poseidon proposes to breach the northern Pond 15 levee to hydraulically connect Pond 15 with San Diego Bay. Breaching the levee would require excavation of approximately 9,000 cubic yards of material to create a 160 foot channel within a 1.74 acre area. Approximately 1.3 acres of the proposed channel is on land managed by the Port of San Diego and will require approval from the Port (see Section C for additional details). Breaching of the levee would be conducted after all earthwork in Pond 15 is completed. Excavation would likely be conducted from west to east using land-based equipment such as a long-reach backhoe situated on top of the levee.
- Raised Levee between Pond 22 and Pond 23. Poseidon proposed to increase the top elevation of the levee between Ponds 22 and 23 from 11 to 13 feet NAVD88 using approximately 11,300 cubic yards of fill material (Feature 13 on **Exhibit 2**). The levee would be raised to avoid any potential flooding impacts from a significant flood event. All salt pond levees disturbed by construction will be restored to conditions appropriate for accommodating salt works maintenance vehicles, where applicable, and for supporting seabird and shorebird nesting.
- Otay Channel Protection. To protect the Otay River channel and the westernmost Bayshore Bikeway Bridge abutment from erosion, Poseidon proposes to place 650 cubic yards of riprap in a 5,500 square foot area on the bottom and southern slope of the channel under the Bayshore Bikeway Bridge (Feature 1 on **Exhibit 2**). Posiedon also proposes to place approximately 2,440 cubic yards of rock in the banks of the Otay river adjacent to Pond 48 (Feature 2 on **Exhibit 2**). This channel protection is necessary to avoid erosion during a 100-year flood.
- Staging area and Temporary construction routes. A temporary staging area would be established on the east site of Nestor Creek on the uplands portion of the Otay River Floodplain site. Existing non-native vegetation would be removed and appropriate surface material (i.e., non-expansive soil or gravel) would be installed to facilitate vehicle movement and reduce the potential for wind and eater erosion. Erosion control measures would be installed to minimize runoff from the site. Following the completion of the project, the staging area would be restored to prior site conditions and revegetated with native plants. In addition to the staging area, Poseidon proposes to construct temporary access routes to facilitate transportation of material from the Otay site to the Pond 15 site. These temporary construction access routes include: (1) Nestor Creek crossing (Feature 5 on **Exhibit 2**), (2) Access route from Frontage Road onto the Otay site (Feature 6 on **Exhibit 2**), (3) Otay River crossing (Feature 7 on **Exhibit 2**), (4) Bike path reroute

(Feature 8 on **Exhibit 2**), (5) Access route from Bay Boulevard to the Pond 15 site (Feature 10 on **Exhibit 2**), and (6) Palomar Channel crossing (Feature 9 on **Exhibit 2**). All temporary access routes would be fully removed after the completion of construction, returned to initial site conditions and revegetated with native vegetation if applicable.

- Exposure Reduction Cover (ERC). Poseidon proposes to spread up to 36,000 cubic yards of excess material from the Otay site over an area east of Nestor Creek that contains elevated concentrations of contaminants, primarily DDT (Feature 14 on **Exhibit 2**). The ERC would be between 1 and 1.5 feet in thickness and would cover approximately 23.11 acres. Once installed, the ERC would be revegetated with native Diegan coastal sage scrub species.

Once earthmoving activities are complete, the two sites would be planted with appropriate native vegetation. Wetland areas, including low, mid and high marsh areas will be planted with tidal salt marsh vegetation including California cordgrass (*Spartina foliosa*), saltwort (*Batis maritima*) and saltgrass (*Distichilis spicata*). Transitional areas and high tide refugia will be planted with high salt marsh vegetation species including Parish's glasswort (*Arthrocnemum subterminale*) and fourwing salt-bush (*Atriplex canescens*). Until vegetation is established, irrigation would be provided to transitional areas using a temporary overhead irrigation system or a pressurized water truck.

No construction activities will occur within the core nesting season (February 15 through September 30) of each year unless specifically authorized by the San Diego Bay NWR Refuge Manager. Thus, with breaks during the nesting season, construction of the proposed project is estimated to take approximately two and a half years.

C. OTHER AGENCY APPROVALS

San Diego Unified Port District (Port)

A portion of the proposed channel connecting Pond 15 with San Diego Bay is within the Port's jurisdiction. The project will require a Coastal Development Permit, Right-of-Entry Permit, and development of a long-term agreement governing construction and future maintenance of the channel. Poseidon submitted applications for these approvals in December 2018.

State Water Resources Control Board (SWRCB)

Poseidon submitted an application to the SWRCB for a CWA Section 401 Water Quality Certification on December 2018. A decision is expected in summer 2019.

United States Fish and Wildlife Service (USFWS)

The USFWS prepared an Environmental Impact Statement (EIS) for the proposed project under the National Environmental Protection Act (NEPA). The Notice of Intent to Issue and EIS was published on November 14, 2011, and a second notice was published on January 8, 2013. The Draft EIS was published on October 21, 2016 and the final EIS was published on May 18, 2018. The Record of Decision for the project was published on October 31, 2018.

U.S. Army Corps of Engineers (USACE)

Poseidon anticipates submitting an application to the USACE for a Clean Water Act Section 404 Individual Permit in May 2019. Issuance of the 404 permit is dependent on issuance of the 401 permit by the SWRCB and the CDP to satisfy Coastal Zone Management Act federal consistency requirements. If these approvals are granted, the USACE is expected to issue the 404 permit in summer 2019.

D. COMPLIANCE WITH CONDITIONS OF POSEIDON CARLSBAD DESALINATION PLANT PERMIT (CDP # E-06-013)

The standard of review for permitting the Otay River Estuary Restoration Project is conformity with the policies of Chapter 3 of the Coastal Act. However, the restoration project also is proposed and designed to comply with the Commission-approved MLMP required under Special Condition 8 of the Poseidon Carlsbad Desalination Plant permit (CDP # E-06-013). The MLMP requires that the wetland mitigation meet minimum standards and objectives and that the Final Restoration Plan contain certain elements and substantially conform to the Preliminary Plan approved by the Commission (**Exhibit 9**).

As described in Section A, the Commission approved Poseidon's revised proposed site and preliminary wetland restoration plan on December 11, 2013. The Commission found that Preliminary Plan would result in the creation of substantial restoration of a minimum of 66.4 acres within the framework provided by the MLMP. In May 2014, Poseidon submitted a Draft Restoration Plan as part of the CDP application. During the EIS process, several elements of the Draft Restoration Plan were revised to maximize restoration benefits and minimize project impacts. The proposed project reflects these revisions. To ensure that these revisions are accurately reflected in the Final Restoration Plan, **Special Condition 5** requires Poseidon to submit a Final Restoration Plan to the Executive Director for review and written approval that conforms to the proposed project as described in the EIS and in this staff report, prior to issuance of the CDP.

In evaluating the proposed project against the minimum standards and objectives and the required elements for the Final Restoration Plan, the Commission finds that the proposed project substantially conforms to the preliminary restoration plan approved by the Commission in 2013. The proposed project meets the minimum standards and objectives and includes the required elements, as specified in the MLMP, as summarized below.

Minimum Standards

The required minimum standards and the basis for the finding of conformity of the proposed project and accompanying Coastal Permit Application documents with the preliminary restoration plan is summarized below.

a. Location within Southern California Bight.

The project consists of restoration of coastal wetland habitat within the Southern California Bight.

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

The restoration project will be created through the excavation, fill, grading, and planting of two areas that historically consisted of large areas of tidal wetland habitat that were transformed either to upland habitat or diked solar salt ponds by anthropogenic processes (i.e., filling and dredging). Both sites are not currently subject to tidal exchange although both sites are immediately adjacent to tidally influenced waters; therefore, the project will provide great potential for tidal wetland restoration with extensive intertidal and subtidal habitat areas as well as associated transitional and upland areas and nesting habitats.

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; NOTE: In September 2009, based on re-evaluation of the project's likely impingement impacts, Poseidon voluntarily agreed to add 11 acres to the amount required in the MLMP, with at least 5.5 acres to be included in Phase I and the balance to be included in Phase II, bringing the total acreage requirements to 66.4 acres.*

The proposed restoration components proposed to fulfill the Poseidon mitigation requirements will involve the creation or substantial restoration of a total of 93.99 acres of wetland habitat the Otay and Pond 15 sites within the San Diego Bay NWR (**Exhibit 2**). These areas will consist of subtidal, frequently flooded mudflat, frequently exposed mudflat, low, mid and high coastal salt marsh. The proposed project will also restore adjacent transitional and upland areas to serve as buffers to the wetland areas, although these areas are not included in the total acreage. The restoration design for each site includes both wetlands and uplands. The demarcation between tidal wetlands and uplands was determined by Commission staff and the SAP, in consultation with Poseidon and the USFWS to be 6.6ft NGVD. This determination was based on the frequency of tidal inundation at differing elevations within the site. Areas above 6.6 ft NGVD in elevation are not expected to receive enough tidal influence to be considered tidal wetlands as required by the MLMP.

The proposed project is expected to provide the mitigation required in the MLMP including additional mitigation required to offset construction-related impacts. **Table 2** shows the mitigation requirements for each element of the proposed project, resulting in a total requirement of 19 acres. When added to the MLMP requirement of 66.4 acres, the resulting wetland mitigation requirement is 85.4 acres. **Table 3** provides a breakdown of the available mitigation area within each site. At the Otay site, the footprint of restored area is approximately 34.56 acres. However, approximately 4.53 acres of this footprint is designed as transition and upland berm areas as well as high tide refugia areas within the wetland. Once this acreage is removed, the total available *wetland* restored area available for mitigation credit is 30.03 acres.

Similarly, at the Pond 15 site, the overall restoration footprint is approximately 90.9 acres. 8.47 acres of the total footprint will be transition and upland berm areas as well as high tide refugia areas. When these upland areas and areas outside the project boundary are subtracted from the total acreage, the proposed restored wetland acreage is 80.96 acres. However, because existing Pond 15 habitat meets the definition of a wetland under the Coastal Act and provides habitat value for several bird species, Poseidon will not receive full credit for restoring Pond 15. To determine the appropriate level of credit, Commission staff and the SAP worked with Poseidon, the USFWS and other state and federal agencies to develop an approach to determine the

functional lift provided by Poseidon's proposed restoration activities. **Appendix B** includes a Technical Memorandum prepared by Poseidon's consultant and a letter from Commission staff outlining the agreed-upon approach. The conclusion of this analysis is that Poseidon should receive credit for 75% of the total restored wetland acreage. Thus, based on a total restored wetland area of 80.96 acres, Poseidon will receive 60.72 acres of tidal wetland credit at the Pond 15 site. When this is added to the available wetland acreage credit at the Otay site and an adjustment is made to account for restored areas outside the footprint of the Otay and Pond 15 sites (i.e., excavation of the berm to create a new connection between Ponds 13 and 14 and the Pond 15 inlet), Poseidon will have 93.99 acres of available tidal wetland credit from implementation of ORERP, resulting in a 10% contingency above the mitigation requirement of 85.4 acres.

Therefore, the proposed restoration project will provide the required mitigation in conformance with Minimum Standard 1.c.

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 restoration provides a buffer zone that is at least 100 feet wide as measured from the upland edge of the transition area. As stated in the EIS, the proposed restoration project is expected to provide a buffer zone of an average of 300 feet wide, and not less than 100 feet wide, as measured from the upland habitat edge. The existing pedestrian trail is from 75 to 125 feet from the restoration site, but would be separated by a flood control levee along the Otay River. In addition, the trail is considered a resource-dependent use, and thus can be allowed within wetland buffers and environmentally sensitive habitat areas.

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

Soil and water quality testing conducted as part of the environmental review process indicated that the project site did not contain any significant levels of contamination. However, the site immediately to the east of the Otay site does contain significant levels of contamination, specifically DDT and PCBs The proposed project includes several measures designed to ensure that contamination on the adjacent parcel does not hinder the proposed restoration. See Section F for a more detailed discussion of this issue.

a. 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.

As described above, Poseidon proposes to fulfill its mitigation requirement through creation and substantial restoration of two sites within the South San Diego Bay Unit of the San Diego NWR. Although the USFWS manages the entire site, it owns just part of the land. The Otay site was purchased by the State Lands Commission (SLC) using Port district airport user fees and is leased to USFWS for its use as part of the San Diego Bay NWR. The SLC has the authority to enter into 49-year leases and has done so for other mitigation sites (including the one currently held by the USFWS). The SLC can consider entering into subsequent 49-year leases when the original lease expires. As part of the EIS process, the SLC submitted a letter on December 5,

2016 to the USFWS confirming its jurisdiction over the Otay and Pond 15 sites as well as the existing lease issued to the USFWS for the creation and continued maintenance of the South San Diego Bay Unit of the San Diego NWR, which will expire on April 30, 2048. The letter also stated that SLC staff had reviewed the proposed project and determined that it did not require further lease approval, thus indicating the proposed activity is consistent with the terms of the existing lease. Thus, as the project site is owned and held in trust by the State of California for the benefit of all people, and is included in a National Wildlife Refuge that is managed by the USFWS, the likelihood that this site would be managed for anything other than habitat is sufficiently low as to be negligible. Thus, site preservation into the future is guaranteed and the proposed project is consistent with this MLMLP requirement.

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

As required by the MLMP, Poseidon will be required to monitor, maintain and remediate, if necessary, the proposed restoration site for a 30-year period. At the end of this period, management of the mitigation site will be transferred to the USFWS and will be managed as part of the NWR.

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

The proposed project will result in a net gain of wetlands.

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

The environmental review that was conducted for the restoration project concluded that the project will not result in significant, long-term, adverse impacts on endangered species. As described in more detail in Section G, impacts to small patches of special-status vegetation, such as estuary seablite, wooly seablite and California boxthorn will be mitigated by including these species in the planting palette for new wetland areas. Biological observers will monitor construction activities to minimize the risk of short-term constructed-related impacts to endangered wildlife species. If potential impacts are identified then the biological observers will redirect construction activities to locations away from the endangered species or their habitat. Once completed, the proposed restoration project will result in significant long-term benefits to endangered species due to the expansion of available wetland habitat. For example, Belding Savannah Sparrows are expected to nest in the high coastal salt marsh habitat and California Least Terns are expected to forage in the subtidal and intertidal areas. It is anticipated that the proposed restoration will increase and enhance habitat available to endangered species.

Objectives

The required objectives as well as the basis for the finding of conformity of the proposed project with the preliminary restoration plan is summarized below.

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).

As part of the project development and EIS process, several alternative restoration sites and designs were evaluated. The USFWS, in consultation with Commission staff and other state and federal agencies, concluded that the proposed project provides the maximum overall ecosystem benefits as compared to other feasible alternatives. The restoration project achieves the optimum balance of upland buffer, transition areas, fish habitat, and regionally scarce habitat with the least amount of impact to existing habitat and infrastructure. Introduction of tidal influence to the site and creation of subtidal and intertidal areas will provide habitat for fish, benthos, and aquatic vegetation. The creation of a relatively large amount of coastal salt marsh will provide aggregate increases in regionally scarce habitat and enhance habitat for some endangered or sensitive species. The project also includes sufficient upland buffers to support wetland habitat functions in perpetuity. Creation of high tide refugia areas will also provide habitat for sensitive and endangered species.

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

The proposed project incorporates an ecologically balanced mix of tidally influenced subtidal and intertidal habitats where no one exist today. Studies within Southern California have shown that in addition to subtidal habitat, intertidal habitat (i.e., marshes, tidal creeks, and shallow mudflats) provides vital habitat and production sites for estuarine fish.

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 stated in the EIS, the proposed restoration project is expected to provide a buffer zone of an average of 300 feet wide, and not less than 100 feet wide, as measured from the upland/transitional habitat edge. The existing pedestrian trail is from 75 to 125 feet from the restoration site, but would be separated by a flood control levee along the Otay River. In addition, the trail is considered a resource-dependent use, and thus can be allowed within wetland buffers and environmentally sensitive habitat areas.

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

The proposed project incorporates over 6 acres of transition and upland habitat. The restoration design incorporates a gradual transition to upland habitat to allow for habitat migration with sea-level rise. In addition, these areas will provide refugia habitat for species during high tides and storm events and are important for many sensitive plant and animal species. Much of the undeveloped land that surrounds the restoration project is owned by the State of California and managed for both wetland and upland habitat. Thus, the project will provide substantial upland transitional areas.

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

Although the project sites do contain some existing wetlands, these areas cannot be described as "functioning wetlands" or sensitive habitat. The surrounding areas within the Refuge, however, do contain some functional wetland areas and provide critical habitat to several sensitive bird species. Potential adverse impacts to these habitats associated with construction of the restoration project were identified as part of the environmental review process. Mitigation

measures were developed to minimize the effects of any potentially significant construction-related impacts. Mitigation measures include implementation of Best Management Practices, flagging of sensitive areas, limitations on timing of construction operations, implementation of traffic control measures, and restoration of any impacted habitat. In addition, biological, cultural, and paleontological monitoring will be conducted during construction to minimize impacts to these resources.

Any long-term impacts to existing wetland habitat that is converted to a different wetland habitat during construction will be mitigated at a one to one ratio. Any long-term impacts to existing wetland habitat that results in a conversion to upland habitat will be mitigated at a four to one ratio.

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

The proposed project was developed in full consideration of the site-specific goals established by the Commission. In addition, the proposed project conforms to the goals and objectives of the CCP and 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.

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

The restoration project was designed to provide a diverse mixture of wetland habitats including subtidal, mudflat, coastal salt marsh, and transitional and upland habitat, instead of focusing primarily on one or two habitat types. The diverse habitat mix was selected to produce and support a wide variety of wetland-dependent resources such as aquatic vegetation, fish, benthos, coastal salt marsh vegetation, and birds.

h. Provides rare or endangered species habitat.

The restoration project is designed to provide habitat for numerous rare and endangered species including California Least Tern, Western Snowy Plover, Light-footed Clapper Rail, Belding's Savannah Sparrow, burrowing owl and several others (see Section G for additional details).

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

A number of sensitive plant species are found within the project area including the estuary seablite, wooly seablite, California boxthorn. Special Condition 5 requires that these species be included in the planting palette. In addition, the proposed restoration will create additional habitat areas that will benefit these species.

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

Since the restoration project is located within the Southern California Bight and the project consists of the restoration of coastal wetland habitat, project implementation will result in an increase in the aggregate acreage of wetland in the Southern California Bight.

k. Requires minimum maintenance.

Once project construction is completed and the vegetation is established, the restoration project will require minimal maintenance to improve the functional performance of the restored ecosystem. Detailed hydrologic modeling indicates that tidal connections to each site have been designed to adequately support the proposed wetland acreage without the need for regular maintenance (i.e., dredging). The project was also designed to minimize impacts associated with both terrestrial and tidal flooding. Furthermore, the design incorporates anticipated changes to the habitats as sea levels rise, and **Special Condition 8** requires Posiedon to conduct maintenance or remediation as necessary. Periodic removal of exotic species will be required for the restored vegetated wetland and upland areas.

l. Restoration project can be accomplished in a timely fashion.

Although it has taken longer than anticipated for the project to be fully developed and for the environmental review to be completed, there are no structural issues (e.g. site contamination, insufficient area) that preclude restoration being concluded in a timely manner. Once fully permitted, construction is anticipated to take approximately two and a half years and, as required by the MLMP and Special Condition 5, must commence within six months of approval of the Final Restoration Plan.

m. Site is in proximity to the Carlsbad desalination facility.

The restoration project is located in South San Diego Bay, California, which is located approximately 35 miles south of the Carlsbad desalination facility. During the site section process, Poseidon investigated several sites in Northern San Diego County that were closer in proximity to the Carlsbad desalination facility. However, these sites did not meet one or more of the MLMP's minimum thresholds for appropriate mitigation sites and were thus rejected.[4]

E. DREDGE AND FILL OF WETLANDS

Coastal Act Section 30233(a) states:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*

[4] See Final Adopted Findings for Condition Compliance for CDP Np. 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 approved by the Commission on February 9, 2011.

(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(6) Restoration purposes.

(7) Nature study, aquaculture, or similar resource dependent activities.

As discussed in Section B above, the proposed project involves the establishment of new tidal salt marsh habitat on two sites within the San Diego Bay NWR. The proposed project would result in 115.83 acres of new wetlands areas. To achieve this restoration goal, both dredging and placement of fill within wetlands and coastal waters are necessary. In addition to this permanent impact, project-related construction will also result in temporary impacts to coastal waters and wetlands. Activities include excavation and placement of fill within an existing salt pond, excavation of existing wetlands to restore habitat, placement of fill on wetlands to create a berm, introduction of tidal flows into the new wetlands areas, and construction and use of access roads and staging areas, all of which could result in disturbance to existing wetlands and open water habitat. In addition, the proposed project will result in indirect impacts to wetland areas from construction including dust, noise, and stormwater runoff.

At the Otay site, the proposed project will result in the establishment of 34.56 acres of functional tidal salt marsh and buffer areas, including mudflats, low, mid and high marsh and transitional/upland habitat. Of the 34.56 acres of new wetlands and associated uplands, 28.04 of those acres will be created by excavating existing upland areas, and 5.96 acres will be created by converting existing low-functioning, seasonal wetlands to high-functioning coastal salt marsh. 0.56 acres of existing low-functioning, seasonal wetlands will be filled to create a berm on the southern boundary of the site (see **Table 2**, **Exhibit 13**).

At the Pond 15 site, the proposed project would result in permanent conversion of the site from a commercial salt pond to tidal salt marsh and surrounding buffer areas. Within the existing salt pond footprint, 85.06 acres have been delineated as wetlands or open coastal waters under the Coastal Act definition. Of those 85.06 acres, 82.43 acres will be restored to tidal wetlands,[5] 1.19 acres will be converted into uplands and 1.44 acres will be converted into high tide refugia within the wetland (see **Table 2**, **Exhibit 14**).

[5] 80.96 acres of this restored area are within the San Diego Bay NWR and 1.47 acres are within the Port of San Diego's Jurisdiction.

In addition to impacts associated with establishment of new tidal wetland areas, the proposed project would result in additional impacts to existing wetlands or open coastal waters from project features necessary to implement the proposed project. These features include installing channel protection to the Otay channel, constructing temporary construction routes and channel crossings and making modifications to salt pond levees (**Exhibit 2**).

Coastal Act Section 30233(a) imposes three tests on projects that include dredging and/or fill of wetlands and open coastal waters. The first test requires that the proposed activity must fit into one of the seven categories of enumerated uses. The second test requires that there be no feasible less environmentally damaging alternative. The third test requires that feasible mitigation measures be provided to minimize the project's adverse environmental effects.

Allowable Use Test

As described in Section B, the purpose of the proposed project is to restore tidal salt marsh habitat within the San Diego Bay National Wildlife Refuge. This will create new tidally influenced wetland habitat within the Refuge and will provide extensive benefits to marine resources such as sensitive fish, bird and estuarine plant species that rely on this important and rare habitat. Proposed dredging and fill on the two sites is specifically designed to bring the elevations of the existing land surface to a level that is suitable for tidal marsh habitat. Furthermore, the proposed project will provide mitigation for adverse impacts to marine species as required by CDP E-06-013. Special Condition 8 of that permit, as incorporated under Special Condition 1 of this CDP, requires that Poseidon fund an independent monitoring program to ensure that the restoration is successful and the impacted resources are fully mitigated. Thus, the Commission finds that the proposed restoration is consistent with the definition of restoration and constitutes filling and dredging for restoration purposes consistent with Section 30233(a)(6).

Alternatives

The second test set forth by the Commission's diking/dredging/filling policies provides that the proposed diking/dredging/filling project must have no feasible less environmentally damaging alternative. As part of the project development process, several alternative restoration sites were identified and evaluated for feasibility and ability to achieve the objectives of the MLMP.

After the MLMP was approved by the Commission in 2008, Poseidon started its site selection process by contacting about 70 different state and local agencies, non-profits and consulting firms to obtain input on potential suitable mitigation sites. Based on the responses received and with input from Commission staff, Poseidon evaluated 15 potential restoration sites within the Southern California Bight. Each site was evaluated for consistency with the MLMP's objectives, criteria and timeline, including opportunity for substantial tidal restoration for fish habitat, buffer and upland transition zone sufficient to protect restored areas, land availability and possibility for timeline constraints. Poseidon identified the Otay River floodplain in the South San Diego Bay Unit of the San Diego National Wildlife Refuge (NWR) as its preferred mitigation site. 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 evaluate the proposed site and develop preliminary restoration alternatives. In 2011, the Commission concurred with the

selection of the Otay River floodplain as the proposed mitigation site and approved the preliminary restoration plan, finding that the plan was consistent with the requirements, objectives and restrictions outlined in the MLMP.[6]

After the site and preliminary restoration plan were approved, staff, the SAP, and representatives from other state and federal agencies including the USFWS (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, a 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 beneficially reused by transferring it to one or more of the salt ponds located about a half mile north of the Otay Site within the NWR (**Exhibit 2**). 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.

Other studies revealed potential site constraints within the Otay River Floodplain. While performing a cultural resource survey on the site, a 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 a portion of the Otay site. To address concerns raised by the results of the survey, Poseidon and the USFWS agreed to adjust the boundary of the project site to avoid these resources altogether.

Additionally, results of a soil contamination study 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. A significant portion of the contamination area contains soils that exceed California's environmental health screening thresholds for DDT, DDE, and DDD (see **Exhibits 15 and 16**). 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 16**). 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.

[6] See condition compliance findings for E-06-013 from October 15, 2010 and February 9, 2011 for additional details.

Based on 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 – the MLMP Workgroup including the USFWS and Poseidon recommended that the size of the mitigation footprint at the Otay site be decreased to avoid potential impacts. They also recommended that the overall project be expanded to include restoration of one or more salt ponds to meet the requirements of the MLMP. In December of 2013, the Commission concurred with the MLMP Working Group's recommendation and approved the revised restoration site.

After the Commission's decision to accept the Poseidon's proposed mitigation site in December 2013, the USFWS launched the development of an EIS under NEPA. As part of the NEPA process, several alternatives were developed and evaluated. These alternatives include: (1) the "no project" alternative (2) the subtidal alternative; and (3) alternate construction methods.

"No-Project" Alternative
Under this alternative, the Otay River Floodplain site would not be restored to tidal salt marsh and the site would remain a degraded upland site consisting of exotic ruderal weeds, limited stands of coastal native scrub habitat and a few acres of highly disturbed wetlands. The Pond 15 would also not be restored to tidal salt marsh habitat and would instead remain part of the existing commercial salt pond operation. Thus, the "no project" alternative would maintain the status quo of both sites in their current ecologically degraded condition with no comprehensive restorative actions to improve and restore its hydraulic and ecosystem functions. Although the "no project" alternative would avoid permanent impacts to existing low-functioning wetlands, salt pond areas and open coastal, construction-related impacts related to air and water quality, as well as temporary and short-term impacts to wetlands and other biological resources, such non-action would fail to restore critical tidal salt marsh habitat needed to maintain and enhance marine resources and the biological productivity of coastal waters necessary to maintain healthy populations of marine organisms, as is mandated by the requirements of Coastal Act Sections 30230 and 30231. The "no project" alternative would also not provide mitigation for the losses to marine resources from operation of the Poseidon Carlsbad Desalination Plant as required by CDP E-06-013. Therefore, the no project alternative is not a less environmentally damaging alternative to the proposed project, as conditioned.

Subtidal Alternative
The subtidal alternative, referred to as Alternative C in the EIS, would result in a similar number of newly restored tidal wetlands acres at both the Otay and Pond 15 sites and would be implemented using similar construction methods and project features. The principal difference between the subtidal alternative and the proposed project is that the subtidal alternative would result in a larger proportion of subtidal habitat as compared to the proposed project. Approximately 370,000 cubic yards of material would be excavated to create subtidal, intertidal and associated upland habitat as compared with 320,000 cubic feet of excavation under the proposed alternative. The additional excavation would require increased construction vehicle trips to transport the material leading to increased fuel consumption, greenhouse gas emissions and fugitive dust generation. Furthermore, the subtidal alternative would result in a restored wetland with generally lower elevations in the channels and portions of the marsh plain, thus

creating habitat that is more vulnerable to inundation due to sea level rise. Thus, the subtidal alternative is not s feasible, less environmentally damaging alternative to the proposed project.

Alternative Construction Methods
The EIS evaluated three potential construction methods for transporting excavated material from the Otay site to the Pond 15 site. Truck transport is the proposed construction method. Under this method, Poseidon would establish and maintain a construction haul route between the Otay site and Pond 15. **Exhibit 12** shows the proposed truck route. The EIS estimates the round trip distance between the two sites at about 7 miles, which would take approximately 36 minutes to complete, including loading and dumping. It will take approximately 56,000 truck trips using trucks with a capacity of 12 cubic yards.

One alternative to truck transport is the slurry method. This would involve adding water to the excavated material to make a slurried mixture of water and sediment and then pumping this slurry to Pond 15 through a pipeline. This alternative was rejected early in the process because it would add up to five years to the construction process. Once the slurry reached Pond 15, it would take between one and five years to consolidate enough to allow the site to be contoured to achieve the designed elevations. This longer construction period would result in a significant delay in providing the required habitat and achieving the goals and requirements of the MLMP, and is thus inconsistent with the intent of CDP E-06-013. Thus, this alternative is not a feasible, less environmentally damaging alternative to the proposed project.

A second alternative to truck transport is the conveyor belt method. This method would involve transporting the excavated material from the Otay site to Pond 15 via a series of conveyor belts. The conveyor belts would use the existing levee system as support and would extend approximately 1.5 miles. The conveyor system would have to be removed during the nesting season in between the two construction periods to accommodate nesting birds. The conveyor belt system would result in a decrease in air emissions, including emissions of greenhouse gases. However, the conveyor belt system has a much higher likelihood to impact existing wetlands and bird nesting habitat along the salt pond levees within the San Diego NWR. The conveyor belts are not enclosed and it would be possible, if not likely, that some of the material would fall off the belt, or be carried by the wind, into the surrounding salt ponds. This could adversely affect the active salt production operation, requiring the salt pond operator to remediate one or more of the ponds. If a significant amount of material is lost, it could also result in a shortfall of material needed to create the desired contouring to support the proposed habitats at the Pond 15 site. In addition, placing conveyor belts along several of the levees could cause structural damage to the levee or damage to the nesting bird habitat on top of the levees. Repairing this damage could be costly and could also result in delays in availability of the nesting habitat. Finally, installing and then removing the conveyor belt system multiple times will add time to the proposed construction schedule, potentially leading to delays in achieving the goals and requirements of the MLMP. For these reasons, the conveyor belt system is not a feasible, less environmentally damaging alternative to the proposed project.

In summary, several alternatives to the proposed project have been evaluated both during a rigorous site selection and project development phase and as part of the EIS for the proposed project. However, alternative restoration sites, restoration designs and construction methods

would result in additional environmental impacts and/or would make it more difficult to achieve the goals and requirements of the MLMP as required by CDP E-06-013. Accordingly, for the reasons described above, the Commission finds that the proposed project is the least environmentally damaging feasible alternative and therefore meets the second test of Coastal Act Section 30233(a).

Mitigation

The final test set forth by the above-cited policies is whether feasible mitigation measures have been provided to minimize adverse environmental effects. As described earlier in this section, the proposed project would result in the creation of new tidal salt marsh habitat and associated buffer areas, but would also result in both permanent and temporary impacts to existing wetlands and open coastal waters. **Table 2** shows the type and acreage of wetland impacts that would result from different elements of the proposed project. At the Otay site, approximately 5.96 acres of permanent impacts to existing wetlands occur within the proposed restoration footprint and thus represent substantial restoration of low-functioning, isolated wetlands with limited habitat value to high-functioning, hydrologically connected wetlands with extensive habitat value. In addition, approximately 0.56 acres of existing wetlands will be converted to upland buffer areas necessary to hydrologically and ecologically support the proposed tidally influenced wetland habitat areas. At the Pond 15 site, the vast majority of the site, 80.96 acres, will be converted from hypersaline open water habitat to tidal salt marsh. This type of conversion from one type of aquatic habitat to another qualifies as substantial restoration because of the limited habitat value of the existing habitat and the significant increase in ecological function provided by the restored wetland. Thus, mitigation for wetland conversion is not warranted in this case. Approximately 1.44 acres of existing wetlands will be filled to create high tide refugia, a critical habitat for light-footed Ridgeway's rails and other wading birds and 1.19 acres of aquatic habitat within Pond 15 will be converted to uplands. Finally, approximately 0.7 acres of permanent impacts and 3.24 acres of temporary impacts are associated with various project features necessary to implement the proposed restoration project.

Under Section 30233(a) of the Coastal Act, each of these impacts must be mitigated to adequately minimize adverse environmental effects. Mitigation requirements for the wetland impacts described above are also included in **Table 2** and adhere to the following guidelines:

- Permanent conversion of wetland to upland shall be mitigated at a 4:1 ratio (restored area:impact area).
- Conversion of one wetland type to another, in the context of a comprehensive restoration effort, shall be mitigated at a 1:1 ratio.
- Conversion of wetland to high tide refugia areas shall be mitigated at a 1:1 ratio
- Temporary impacts to existing wetlands shall be restored to its initial condition within one year of the end of construction.

The requirements listed above for conversion of wetland to upland and for conversion from one wetland type to another is consistent with past Commission actions for similar mitigation and restoration projects. They are also consistent with EIS requirements captured in mitigation measures MM-BIO-2 and MM-BIO-3, incorporated into this CDP under Special Condition 4. Special Condition 5 requires that Poseidon submit a Final Wetland Restoration Plan for review

and approval by the Executive Director that describes how wetland impacts will be mitigated consistent with these requirements. As shown in **Table 2,** the total construction-related wetland mitigation requirement is 19 acres.

Creation of high tide refugia is a unique feature of this project and required a separate analysis to determine the appropriate mitigation ratio. High tide refugia are described in the EIR as follows:

> *…the transitional areas and high tide refugia areas will be an important habitat element integral to the ecological functions of the restored wetland by providing habitat for light-footed Ridgway's rails and other wading birds. The inclusion of high tide refugia, which is intended to optimally support the rail's full suite of life history needs, will consist of several linear berms and other irregular features that will be slightly higher in the tidal range relative to the elevation range within the bulk of the restoration area. The transitional features will slope from the high salt marsh to approximately 7.8 feet NAVD 88 in elevation. The high tide refugia features will continue to slope from the transitional features, and will provide necessary cover for birds such as the light-footed Ridgway's rails during high tides provide necessary cover for birds such as the light-footed Ridgway's rails during high tides.*

Creation of this habitat type will result in a conversion of existing subtidal habitat within Pond 15 to upland habitat. Not part of the original design, Poseidon included high tide refugia features in the proposed project at the request of the USFWS to provide important habitat for light-footed Ridgway's rails and other wading birds. In addition to the ecological value these areas will provide to important tidal wetlands species, these areas also create available habitat areas for migration of salt marsh habitat as sea levels rise. Thus, because the sole purpose of the conversion is to provide nesting habitat to a critical wetland species, and in recognition of the value of this higher-elevation habitat for sea level rise adaptation, it is appropriate to consider impacts to existing habitat incurred from the creation of high tide refugia as self-mitigating. Thus, Special Condition 5 requires that Poseidon mitigate these impacts at a 1:1 ratio.

Special Condition 5 also requires that temporary impacts to existing wetlands be adequately mitigated. Temporary impacts have been determined in previous Commission action to be impacts from disturbance or partial vegetation removal that do not involve excavation or permanent fill and are no longer observable after one year. Special Condition 5 requires that Poseidon document the pre-construction condition of the wetland, implement measures to reduce impacts, conduct post-construction monitoring and any necessary remediation and then submit a final report documenting that all temporary impacts have been resolved and the wetland returned to its initial condition. If temporary impacts to existing wetlands remain one year after the completion of construction, Poseidon will be required to submit an amendment to this CDP that proposes additional mitigation for these impacts that is adequate to compensate for the temporal loss of habitat from the proposed project.

To address indirect impacts associated with construction, the proposed project includes several mitigation measures designed to minimize impacts associated with stormwater runoff and human intrusion. To ensure that increased sedimentation associated with construction-related runoff is

avoided, EIS Measure MM-GEO-1, incorporated into this CDP under Special Condition 9, requires Poseidon to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify best management practices to be implemented through construction to protect water and sensitive resources and avoid temporary impacts. To minimize impacts associated with human intrusion, EIS measure MMBIO-4, incorporated into this CDP under Special Condition 4 requires that Poseidon delineate all project site boundaries, install silt fencing to protect marsh and provide biological monitoring. Special Condition 10 builds on this requirement by requiring training to all construction workers, installation of protective orange fencing around sensitive habitat and wetlands areas, pre-construction biological surveys and biological monitoring during all project-related construction activities to ensure that biological resources including wetlands, sensitive habitat areas and special status species are protected. With these measures in place, indirect impacts to wetlands will be minimized and will not result in significant or long-term degradation of the habitat function.

With these conditions incorporated, the proposed project provides feasible mitigation for impacts related to dredging and fill of coastal waters, and thus, the Commission finds that the third test of Coastal Act section 30233(a) has been met.

For the reasons described above, the Commission finds the project, as conditioned, consistent with Coastal Act Section 30233(a).

F. MARINE RESOURCES AND WATER QUALITY

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30232 states:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or*

> *transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

The Otay River Estuary Restoration Project is located within the 2,300-acre South San Diego Bay Unit of the San Diego NWR. The San Diego NWR is managed by the U.S. Fish and Wildlife Service (Service) in conformity with the San Diego Bay NWR Comprehensive Conservation Plan (USFWS 2006a). The South San Diego Bay Unit includes portions of San Diego Bay, an active solar salt evaporation pond operation operated by the South Bay Salt Works, which includes the Pond 15 Site; and the western end of the Otay River drainage basin, which includes the Otay River Floodplain Site. According to the EIS,

> *The San Diego Bay NWR provides protection for and management of a large number of endangered, threatened, migratory, and native species and their habitats. Nesting, foraging, and resting sites are managed for a number of species of shorebirds, colonial seabirds, and wintering waterfowl. Waterfowl and shorebirds over-winter or pass through, using the area for foraging and resting as they migrate along the Pacific Flyway. Enhanced and restored wetlands, including the San Diego Bay NWR Ponds 10, 10a, and 11 Wetland Restoration Project completed in December 2011, provide high-quality habitat for fish, birds, and plants.*

Although once part of a vast network of coastal salt marsh, intertidal mudflats and shallow subtidal habitats, over the past 100 years, human development in the southern portion of the Bay resulted in the conversion of most former wetland areas to solar salt ponds or agricultural lands. The Otay site, a former tidal salt marsh, was filled in and converted to uplands and used for farming, water treatment, and salt production, although it has not been in active use for many years. Currently, the Otay site is dominated by non-native species and is described in the EIS as follows:

> *Within the Otay River Floodplain Site, non-native weeds and exotic grasses dominate the upland portions of the site. The freshwater wetland habitat in the upstream portions of the Otay River contains components of southern willow scrub habitat and a variety of exotic, invasive wetland species such as giant reed (Arundo donax), salt cedar (Tamarix ramosissima), and castor bean (Ricinus communis). This freshwater wetland habitat transitions into salt marsh habitat approximately 1,300 feet upstream of the point where Nestor Creek empties into the Otay River channel.*

The EIS describes the primary vegetation communities or land covers on the site including brackish water, disturbed habitat, former salt pond and borrow area, Isocoma scrub, and Southern coastal salt marsh. These vegetation communities provide some habitat for migratory birds, common upland species and foraging habitat for raptors.

The Pond 15 site is part of the active solar salt pond operation that consists of diked open water cells of varying salinity. The EIS describes the primary vegetation communities or land covers on the Pond 15 site as bay, beach, disturbed habitat, open water, salt pond levee, Southern coastal salt marsh and disturbed Southern coastal salt marsh. The salt pond cells provide roosting habitat for migratory birds, foraging habitat for various shorebirds, and nesting habitat

for a number of ground-nesting seabirds (USFWS 2006a). The birds feed on dense populations of invertebrates adapted to the high saline conditions within the ponds (e.g., brine flies, brine shrimp). Surveys in 1993-1994 and 2012-2013 found that Pond 15 attracted large numbers of foraging phalaropes, as well as roosting gulls, terns, double-crested cormorant (*Phalacrocorax auritus*), bufflehead (*Bucephala albeola*), American wigeon (*Anas americana*), ruddy duck (*Oxyura jamaicensis*), and eared grebes (*Podiceps nigricollis*). Although not present within Pond 15, the EIS reports that eelgrass is present approximately 850 feet from the northern portion of Pond 15, along the southern edge of the Chula Vista Wildlife Reserve.

Restoration of Tidal Wetland Habitat

The proposed project seeks to create and restore approximately 30.03 acres of tidal wetland habitat on the Otay site and 80.96 acres on the Pond 15 site to mitigate for adverse impacts to marine resources from operation of the Carlsbad Desalination Plant. The proposed project has been designed to achieve the wetland restoration goals and objectives outlined in the MLMP, as discussed in detail in Section D, including:

- 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.
- Provides substantial fish habitat compatible with other wetland values at the site(s).
- Restoration involves minimum adverse impacts to existing functioning wetlands and other sensitive habitats.
- Provides rare or endangered species habitat

These project goals and objectives are certainly consistent with Coastal Act requirements to restore marine resources and coastal streams and wetlands and maintain healthy populations of marine organisms. However, it is important to ensure that (1) the proposed mitigation project is successful in restoring coastal marine and wetland resources, (2) adverse impacts to marine resources from construction of the proposed project do not impair the biological productivity and quality of coastal waters, and (3) long-term implementation of the proposed project does not result in adverse impacts to marine resources.

1. Ensuring Restoration Success

In addition to providing goals and objectives for the proposed mitigation project, the MLMP provides for the monitoring, management and remediation of the wetland mitigation project including specific performance criteria the restored areas must meet to receive mitigation credit and a provision for an independent monitoring program to assess compliance with those performance criteria over a 30 year period. Implementation of the required independent monitoring program and compliance assessment will ensure that the mitigation project achieves the stated restoration goals and objectives and provides adequate marine and wetland resources to compensate for losses due to operation of the Carlsbad Desalination Plant. **Special Condition 7** memorializes these MLMP requirements in this CDP.

The MLMP allows for the Executive Director to retain independent contract scientists to implement the mitigation monitoring program. The first task of the contract scientists will be to develop a detailed Monitoring Plan to guide the monitoring work. The Monitoring Plan will be developed in consultation with the members of the Scientific Advisory Panel (convened by the Executive Director to provide guidance to the Commission on the design, implementation and

monitoring of the Poseidon mitigation project), Poseidon, the USFWS and other state and federal resource agencies.

The wetland performance and independent monitoring requirements included in the MLMP were modeled after requirements included in the CDP authorizing construction and operation of the San Onofre Nuclear Generating Station (SONGS) (CDP 6-81-330-A (formerly 183-73). Thus, the Monitoring Plan for the proposed project will also be modeled after the SONGS Mitigation Monitoring Plan for the San Dieguito Wetland Restoration Project. The most recent version of the Monitoring Plan can be found here:
http://marinemitigation.msi.ucsb.edu/documents/wetland/index.html

The Monitoring Plan will include a description of each performance standard and the methods that will be used to determine whether the various performance standards have been met. The performance standards that will be used to measure the success of the wetland restoration project fall into two categories. The first category includes long-term physical standards relating to topography (erosion, sedimentation), water quality (e.g., oxygen concentration), tidal prism, and habitat areas. The second category includes biological performance standards relating to biological communities (e.g., fish, invertebrates, and birds), marsh vegetation, *Spartina* canopy architecture, reproductive success of marsh plants, food chain support functions, and exotic species. The successful achievement of the performance standards will in some cases be measured relative to reference wetlands, which are specified in the MLMP to be relatively undisturbed, natural tidal wetlands within the Southern Bight. Management issues relevant to the Poseidon wetland mitigation requirement will also be discussed in the Monitoring Plan. These issues include inlet maintenance, if necessary, excessive changes in topography, and exotic species. Although Commission staff and contract scientists are not responsible for managing the wetland restoration, their monitoring efforts will measure several parameters that can be used in adaptive management to ensure the success of the restoration project.

In addition to the independent monitoring program required in the MLMP and by Special Condition 7, this CDP also includes several measures ensuring that the restoration project will achieve the objectives for which it is intended. Special Condition 5 requires Poseidon to submit a Final Restoration Plan that reflects the proposed project as described in the EIS and this staff report. The Plan must also address construction-related impacts and include grading, site preparation and planting plans. Special Condition 6 requires Poseidon to submit as-built plans to the Executive Director for review and approval along with a report that identifies, quantifies and assess the significance of any discrepancies between the design and the "as-built" condition. Further, Special Condition 8 requires Poseidon to implement appropriate maintenance and management of the restoration project components for a 30-year period. With these conditions in place, and with the requirement to implement an independent monitoring program, the proposed project will be constructed as proposed with a robust framework in place to ensure that the restoration of tidal wetland habitat at the Otay and Pond 15 sites is successful.

2. Construction-related impacts

The proposed project will significantly improve and expand habitat available for marine species. However, construction of the proposed project could have short-term adverse impacts on existing marine habitats and species due construction staging, traffic and noise, degraded water quality

from increased erosion or release of hazardous materials. Each of these is discussed in more detail below.

Construction staging, traffic and noise
Construction-related activities, including staging, traffic and noise could adversely impact marine habitats and species. Native vegetation and habitat could be lost or degraded due to necessary widening of levees, reinforcement of slopes and installation of temporary construction features such as channel crossings. In addition, construction noise could result in disturbance of native species, including nesting birds. To address these concerns, the EIS included mitigation measures MM-BIO-1, MM-BIO-7 and MM-NOI-1, all incorporated into this CDP under Special Condition 4. MM-BIO-1 requires Poseidon to restore all native habitat or plant communities that are impacted by project features such as levee widening, channel crossings and slope reinforcement to pre-construction conditions. This includes decompaction, recontouring and revegetation of disturbed areas associated with staging, access routes or other project components. To minimize impacts to nesting birds, Poseidon proposes to avoid any construction during the nesting season, including demobilization of all equipment from the site. To ensure the protection of nesting habitat, EIS Mitigation Measure MM-BIO-7, incorporated into this permit under Special Condition 4 and Special Condition 10 require Poseidon to avoid construction between February 15 and September 30, unless work outside this period is necessary and authorized by the San Diego Bay NWR Refuge Manager. In the event that construction is authorized during the nesting season, Special Condition 10 requires Poseidon to conduct surveys for nesting birds and if found, submit an action plan to the Executive Director demonstrating that adequate measures are in place, including buffer zones and limits on construction, to ensure impacts to nesting birds are minimized. Finally, MM-NOI-1 limits construction to daylight hours and requires Poseidon to implement noise reduction measures for all construction equipment. Thus, with this measure in place, construction-related impacts to marine resources from construction staging, traffic and noise will be short-lived and minor.

Water Quality – Increased Erosion
Although the proposed project will result in a significant net gain of marine habitat, construction-related activities could result in an increase in suspended sediment concentrations that could adversely affect receiving waters including San Diego Bay, the Otay River channel and Nestor Creek. Elevated levels of suspended sediment or other pollutants can cause mortality, illness or injury of fish species by interfering with feeding, growth, and habitat. To avoid these adverse impacts, it is critical to control the erosion at the source. To minimize impacts from these types of construction-related discharges, the EIS included three water quality measures, all incorporated into this CDP under Special Condition 4. MM-GEO-1 requires that a Stormwater Pollution Plan (SWPP) be prepared and approved by the USFWS and RWQCB that includes identification and implementation of appropriate Best Management Practices (BMPs), thresholds for structural BMPs, and requirements related to inspection and repair of BMPs. MM-GEO-2 requires Poseidon to develop a post-construction erosion control plan that identifies the type and location of specific erosion and sedimentation control measures to be implemented once the restoration areas are in place. MM-HYD-4 requires that Poseidon implement appropriate measures to prevent the release of excavated material and dust into adjacent upland, wetland and open water habitat. These mitigation measures, as written, are sufficient to ensure that the biological productivity and quality of marine waters is maintained. To ensure that the resulting

SWPP and post-construction erosion-control plan sufficiently protect marine resources under the Coastal Act, Special Condition 4 requires Poseidon to submit both of these plans to the Executive Director for review and approval. With these conditions in place, impacts to marine resources from erosion and stormwater-related discharge during construction and operation of the proposed restoration project will be minor.

In addition to potential erosion-related impacts due to general construction activities, breaching of the berms to facilitate a tidal connection to each of the restoration areas presents an elevated potential for adverse impacts associated with increased turbidity. After the berm is breached, there is a potential for increased concentrations of suspended sediment to increase turbidity in area surrounding the breach site. However, as described in the EIS, when the berm was breached to introduce tidal influence into newly restored western salt ponds, turbidity did not significantly decrease. Nevertheless, to ensure that potential impacts associated with increased turbidity after a berm breach are minimized, the EIS included mitigation measures MM-HYD-1, MM-HYD-2 and MM-BIO-8, incorporated into this CDP under **Special Condition 4**. MM-HYD-1, MM-HYD-2 relate specifically to minimizing turbidity impacts by setting a threshold for turbidity within Pond 20 before commencing the breach, requiring monitoring of turbidity levels to determine if scour or resuspension of sediment is occurring within Pond 15 during the berm breach or excavation of the inlet/outlet channel, and requiring that a silt curtain be installed during excavation of the inlet/outlet channel. MM-BIO-8 requires that a qualified biologist visually monitor area surrounding the Pond 15 breach location as the levee is breached. Although these measures provide important protections, they do not go far enough to ensure that the biological productivity of coastal waters is maintained. Thus, the Commission is requiring **Special Condition 9**, which requires Poseidon to submit a Pollution Prevention Plan to the Executive Director for review and approval that is specific to the proposed berm breaches and excavation of the inlet/outlet channel at Pond 15 and at the Otay site. The Plan must include a detailed methodology and timeline for excavation of the breaches and introduction of tidal flows, a staging plan, a description of all sediment control measures, a detailed monitoring plan and a description of potential remedial actions. With these measures in place, impacts to marine waters from construction-related erosion associated with introducing tidal flows into the newly restored areas will be minimized.

Increased sedimentation also has the potential to affect eelgrass areas in the vicinity of the restored areas. As described in the EIS, an eelgrass survey conducted in San Diego Bay in 2014 documented eelgrass along the southern edge of the Chula Vista Wildlife Reserve, about 850 feet to the west of the proposed breach site in Pond 15. Due to high variability of eelgrass habitat and changing condition in south San Diego Bay, the specific acreage of eelgrass that will be present during project construction is hard to predict. To ensure that any adverse impacts to eelgrass habitat from breaching of the Pond 15 berm, the EIS included mitigation MM-BIO-9 which requires pre- and post-construction eelgrass surveys in accordance with the Southern California Eelgrass Mitigation Policy (CEMP). MM-BIO-9 also requires that any impacts to eelgrass from project construction activities be mitigated in compliance with CEMP. Furthermore, the turbidity reduction measures described above, including Special Condition 9, will minimize suspended sediment concentrations that could adversely impact eelgrass habitat. This, with these measures in place, impacts to eelgrass will be minimized and fully mitigated, if applicable.

Water Quality – Hazardous Materials
The proposed project could lead to the release of hazardous materials that could migrate into sensitive coastal areas and marine waters due to use of motor vehicles and equipment. If contaminants such as fuel oils or grease enter receiving waters, they could result in acute toxic effects or abnormalities in fish and other aquatic organisms. To address this concern, the EIS required MM-HYD-3, incorporated into this CDP under Special Condition 4, requiring the preparation of a hazardous substance management, handling, storage, disposal, and emergency response plan for all phases of construction. This plan must address storage and fueling of vehicles, prevention and response measures to avoid and reduce the consequences of an accidental release of hazardous materials, identification of the worst-case spill scenario, and description of equipment and materials available to address any spill. To ensure that the resulting plan sufficiently protects marine resources under the Coastal Act, Special Condition 4 requires Poseidon to submit this plan to the Executive Director for review and approval. With these conditions incorporated the proposed project will protect against the spillage of hazardous materials and ensure that adequate containment and cleanup resources are available in the unlikely event of a spill.

3. Long-term implementation of the proposed project

Habitat Conversion
Implementation of the proposed project will lead to a temporary loss of existing bird habitat as well as the longer-term conversion from one habitat type to another. The San Diego Bay NWR provides important habitat for a wide variety of shorebirds, colonial seabirds, and wintering waterfowl. Although the upland Otay site does not support a significant population of marine birds, the Pond 15 site currently provides foraging, loafing, and rafting habitat for wintering waterfowl, migratory and wintering shorebirds, migratory seabirds, and other year-round waterbirds and summer visitors. According to the EIS, "Although the number of birds on the salt pond can be high, species richness is low, especially compared to the adjacent San Diego Bay where species richness is very high, as different species forage in response to the tidal cycles and the alternating of exposure and inundation of mudflats." Conversion of the enclosed hypersaline subtidal habitat to tidal influenced intertidal and subtidal habitat would not change the overall acreage of habitat available but could result in changes in the type, number and diversity of birds using the pond. In addition, the two-year construction period would result in a temporary loss of foraging and nesting habitat in Pond 15. However, ample salt pond habitat is available within the NWR to support migratory and resident bird species, both in the short and longer term. Furthermore, according to the EIS, once Pond 15 is converted to tidally-influenced wetland habitat, "the habitat quality would increase and new foraging opportunities would develop over time, providing a net benefit to a wide range of bird species."

Existing Site Contamination
As described in Section ??, as part of the project development process, Poseidon, in coordination with the USFWS, conducted soil investigations at both the Otay and Pond 15 sites. At the Otay site, as fully described in Section 3.2.10 of the EIS, Poseidon collected multiple samples at four locations as shown on **Exhibit 17**: (1) the northern portion of former Salt Pond 20A (S1); (2) the former agricultural land to the east of Nestor Creek (S2, S5); (3) the site of a former agricultural storage and supply area (S3); and (4) the site of a former wastewater treatment pond (S6A and

S6B) . Soil and sediment composite samples were analyzed for grain size, total solids, TOC, metals, pesticides (i.e., DDT compounds (DDT, DDD, DDE), toxaphene, dieldrin), TPH, PCBs, and SVOCs. Results of the sampling analysis revealed several findings:

- Metals were detected in all samples but were elevated in the sampling locations east of Nestor Creek.
- TPH and PAHs were not detected in any samples, and phenols were generally not detected.
- No pesticides or PCBs were detected at sampling locations west of Nestor Creek.
- Samples from east of Nestor Creek contained measurable concentrations of DDT, toxaphene, dieldrin, and PCBs.
- In general, contaminant concentrations were greatest at the surface and decreased with depth.

Based on sampling results, pesticide concentrations in the top 1 foot of portions of the area to the east of Nestor Creek were determined to exceed the Title 22 (22 CCR 66700) Total Threshold Limit Concentration (TTLC) for total DDTs (**Exhibits 15 and 16**).

At the Pond 15 site, ten sampling locations were analyzed as part of a sediment characterization study specifically designed to address potential contaminant-related issues for salt pond restoration. Results of the study indicated that pesticides, PCBs, and PAHs were detected infrequently or at low concentrations. Most metals were detected, but at levels below screening levels. Arsenic and lead were detected at concentrations that exceeded the most conservative screening level, but were similar to levels detected in adjacent Bay sediments and less than Southern California regional background level for soil of 12 mg/kg as reported in the EIS. Concentrations of mercury and nickel exceeded the most conservative screening level in a few samples, but the Pond-wide mean concentrations were below the most conservative level and thus below levels of concern for aquatic organisms or aquatic-dependent wildlife. Copper concentrations were detected at levels of concern at a few individual stations but the pond-wide mean copper concentrations do not exceed levels of concern.

The proposed project would involve excavation of the soils within the Otay site (west of Nestor Creek) and beneficial reuse of some of the excavated material to fil in the Pond 15 site. Results of the analysis described above resulted in a decision early in the project development process to limit restoration of tidal wetlands to the area west of Nestor Creek, in part to avoid excavation of contaminated soil east of Nestor Creek. However, the potential for mobilization of contaminants, specifically DDT, still remains as a result of erosion of DDT-contaminated soils from the eastern portion of the Otay River floodplain into the Otay River channel and San Diego Bay during a significant flood event. According to the EIS:

> *This is a concern because sediment-borne DDT and its metabolites (especially p,p'-DDE) can be toxic to directly exposed benthic organisms, and to indirectly exposed aquatic-dependent wildlife. Sediment-borne DDT and metabolites are known to enter and accumulate in the tissues of aquatic food web organisms. Through bioaccumulation and biomagnification (with trophic transfer), concentrations of DDT and metabolites can reach levels in tissues of aquatic food*

chain organisms that are unsafe for wildlife that rely on the aquatic biota for food.

To determine the potential for adverse impacts associated with mobilization of DDT-laden sediments east of Nestor Creek, consultants for Poseidon collaborated with USFWS experts in fate and transport of environmental contaminants to conduct a study that combines a soil characterization and erosion analysis, sediment transport and deposition analysis and biological impact assessment. The study, called the Sensitivity Analysis of Potential DDT Deposition in the Otay River Estuary Restoration Plan (ORERP) Post-100 Year Flood, is included in **Appendix C**. The study, as reported in the EIS, found that under the worst-case scenario, which corresponded to maximum erosion of 3 ft of contaminated soils from the east side of Nestor Creek:

…the post-100-year flood would result in the deposition of less than 1 millimeter to as much as 8 millimeters of partially consolidated mud in the restored tidal basin, with an average dry bulk DDT concentration of 42 µg/kg dw to 790 µg/kg dw, depending on whether the calculations assume the mixing of clean sediments from upstream with the contaminated sediments on the site and on the depth of erosion that occurs. If unmixed with upstream sediments, the DDT concentrations in the muds deposited in the basin could range between 310 µg/kg dw and 790 µg/kg dw, but the deposition thicknesses would reduce to only fractions of a millimeter once these muds become consolidated. Using a depth-proportional exposure approach, and assuming that all exposure occurs within the top 20 millimeters under worst-case conditions, the DDT concentration experienced by the benthic biota would range from approximately 13 µg/kg dw to 29 µg/kg dw initially and would decrease with compaction and consolidation to a final 20-millimeter-based dry bulk concentration of 4.2 µg/kg dw to 7.9 µg/kg dw.

The study found that these concentrations of DDT would not be likely to have a measurable effect on benthic species that serve as the prey base for marine bird species. Based on the results of this study, the EIS determined that:

…impacts to benthic organisms could occur occasionally during the short term; however, given the likelihood of effects combined with the short-term nature of this condition, population-level impacts are expected to be limited in nature and extent. Once post-flood muddy deposits have compacted and consolidated in the restored areas, the DDT concentrations in the top 20 millimeters of muddy sediment would be very close to the ERL, and even lower for the top 40 millimeters and top 80 millimeters of sediment; therefore, negative effects are expected to be rare. This condition is not likely to have a measurable effect on the prey base for aquatic-dependent species. Further, impacts on aquatic-dependent birds are unlikely to result from the anticipated deposition of sediments following either a 100-year or a 50-year flood event.

Given the complexity and importance of this study, Commission staff requested that Poseidon fund an independent review of the study. Poseidon agreed and Commission staff, in consultation

with Poseidon, the USFWS and the SAP, chose two experts to review two different aspects of the study. The final report for each of these reviews is included in **Appendix C** and summarized in the comment letter submitted to the USFWS on the draft EIS, also included as **Appendix C**. In general, both reviewers found that the study's methodology and approach was appropriate. However, one reviewer found that uncertainty in the dispersion modeling was not well described or quantified. The reviewer of the ecotoxicology component of the study found that several assumptions were not adequately justified and in some cases, result in sediment screening levels that are not adequately protective. This review's overall conclusion was that for Light-footed Ridgeway Rails, the species of greatest vulnerability and management interest, there may be some toxic risk from DDT bioaccumulation in the short term after a 50 or 100 year flood event. However, the risk appears to be very small in the long term. Thus, the benefits of the project to the Rail population as a whole would appear to outweigh impacts from potential DDT contamination. Based on the reviewer's findings, Commission staff concluded that in the event of a major 50 to 100 year flood, there may be a risk that DDT laden sediment deposited in the proposed ORERP wetlands could result in adverse impacts to wildlife. In light of this conclusion, Commission staff requested that the USFWS explore additional measures to reduce the risk of impacts associated with mobilization of DDT contamination.

In response to staff's request, the USFWS, in coordination with Poseidon, added an additional element to the proposed project. Instead of stockpiling excavated material not needed for restoration of Pond 15, that material would be spread evenly over an area of approximately 23.11 acres, creating a one to 1.5-foot thick exposure reduction cover. The cover would be revegetated with appropriate native upland vegetation and would further reduce the potential for mobilization of contaminated sediments. To ensure that the exposure reduction cover was incorporated, Poseidon amended the CDP application to include this component as part of the proposed project. With the inclusion of the exposure reduction cover, the unlikely event that contaminated sediments will be eroded and redistributed over the tidal basin becomes even more unlikely. In the highly unlikely event that DDT contamination does make its way into the restored area, the independent monitoring program would detect any long-term effects to marine resources including birds, fish and invertebrates. If adverse effects are detected, they are likely to inhibit Poseidon's ability to meet the performance criteria outlined in the MLMP and Poseidon would be required to implement corrective action to address the problem. Thus, based on the finding described above, and the inclusion of the exposure reduction cover as part of the proposed project, impacts to the restored wetlands areas and surrounding marine habitats from exposure to existing contamination on the site to the east of Nestor Creek, are highly unlikely. In the very unlikely event that DDT contamination is mobilized, impacts would be short-term and minor.

Sea Level Rise

Another potential concern is the effect of sea level rise on the proposed project. The State of California has undertaken significant research to understand how much sea level rise to expect over this century and to anticipate the likely impacts of such sea level rise. Updated projections suggest sea levels are expected to rise between 2.1 and 6.7 feet by 2100 at the Los Angeles tide gauge, depending on future greenhouse gas emissions. These projections also include an extreme scenario (termed the "H++" scenario) of 9.9 feet of sea level rise by 2100 based on recent

modelling efforts that look at possible sea level rise associated with rapid ice sheet loss.[7] The proposed project involves the restoration of tidal wetland habitat at two locations in South San Diego Bay. In general, tidal wetlands can increase the resiliency of a coastal area to sea level rise by buffering more frequent and higher waves and storm surge and providing storage for increased tidal and terrestrial flooding. However, if the rate of natural sediment accretion that occurs in tidal wetlands is outpaced by sea level rise, tidal wetland habitat can become inundated, resulting in a conversion of rare and ecologically valuable intertidal salt marsh habitat to subtidal habitat. While shallow subtidal habitat is also ecologically important, the loss of associated intertidal habitat reduces the overall productivity of the entire system and results in devastating impacts for many species of vegetation and wildlife.

The proposed project will serve to mitigate the adverse effects to marine resources from the operation of the Poseidon Carlsbad Desalination Plant. As a result, it is critical that the resources provided by the proposed tidal wetland habitat persist into the future to ensure full compensation is achieved. Furthermore, Poseidon is required under the MLMP to meet performance criteria at the Otay and Pond 15 sites for a minimum of 30 years, a timeframe within which a significant increase in sea levels is likely. In anticipation of potential impacts associated with sea level rise, Commission staff worked with Poseidon, the USFWS and other state and federal agencies to incorporate sea level rise planning into the design and analysis of the project from the beginning. As a result, the initial design phase for both the Otay site and the Pond 15 site included analysis of the effects of sea level rise on each potential design (See **Exhibits 5 and 8**). This included assessing how the designed mix of habitats (i.e., subtidal, mudflat and low, mid and high marsh) would change over a range of sea levels from current conditions to 5.5 feet[8] of sea level rise. This analysis informed the selection of the alternatives analyzed in the EIS and led to the inclusion of several features that will increase the resiliency of the proposed mitigation project over time. These resiliency features include:

- Maximizing transition and upland buffer areas
- Ensuring adequate mid and high marsh areas
- Limiting subtidal habitat

Inclusion of these features will ensure that: (1) the wetland has space to migrate to higher elevations as sea levels rise, and (2) the design maximizes the habitat value both under current conditions and as sea levels rise by anticipating conversion of low marsh to subtidal habitat and mid and upper marsh to low marsh and ensuring adequate acreage of all habitats through time.

[7] Griggs, G, Árvai, J, Cayan, D, DeConto, R, Fox, J, Fricker, HA, Kopp, RE, Tebaldi, C, Whiteman, EA (California Ocean Protection Council Science Advisory Team Working Group). Rising Seas in California: An Update on Sea-Level Rise Science. California Ocean Science Trust, April 2017. Also, OPC State of California Sea-Level Rise Guidance, 2018 Update: http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

[8] During the design phase for the project in the 2011-2014 timeframe, current projections indicated that the upper end of sea level rise for the year 2100 was 5.5 feet. Although the designs considered up to 5.5 ft of sea level rise, the EIS only assessed up to 24 inches of sea level rise, thus **Exhibits 5 and 8** (taken from the EIS) show habitat area changes with only 24 inches of sea level rise.

To address the practical issue of how to account for sea level rise in the evaluation of performance of the wetland, the restoration plan will incorporate anticipated changes in the habitat mix as sea levels rise. The MLMP includes a physical performance standard that requires that the area of different habitats shall not vary by more than 10% from the areas indicated in the restoration plan. As sea levels rise and the habitat mix at the wetland changes in response, the wetland could wind up being out of compliance with this standard through no fault of the restoration project itself. To address this potential concern, the design of the wetland, including the habitat mix, that serves as the baseline for future comparison, needs to be dynamic instead of a static "as-built" condition. In practical terms, this means that the expected acreage of each habitat area will change in any given year to reflect current sea level. Thus, the designed mix of habitat in Year 30 is likely to be substantially different than the designed mix of habitat in Year 1. Incorporation of sea level rise into the restoration plan in this manner will ensure that the mitigation project is held to a fair standard that accounts for anticipated changes. To ensure that this approach is applied, Special Condition 5 requiring Poseidon to submit a Final Restoration Plan to the Executive Director for review and approval includes a provision that the Plan incorporate a dynamic wetland design that addresses anticipated changes due to sea level rise. With this measure included, the proposed project includes elements that increase the resiliency of the proposed wetlands to sea level rise and ensures that future performance evaluation accounts for potential changes in expected habitats.

For the reasons discussed above, the Commission finds that the proposed project, as conditioned, will be carried out in a manner that maintains marine resources and sustains the biological productivity and quality of coastal waters and protects against the spillage of hazardous substances into the marine environment and is therefore consistent with Coastal Act Sections 30230, 30231 and 30232.

G. ENVIRONMENTALLY SENSITIVE HABITAT AREA (ESHA)

Coastal Act Section 30240 states:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

The project area supports several special-status terrestrial species of both flora and fauna. According to the EIR, three special-status plant species have been observed on the project sites, including California box-thorn (*Lycium californicum*), Estuary seablite (*Suaeda esteroa*) and Wooly seablite (*Suaeda taxifolia)* (**Exhibits 18 and 19**). In addition, special-status wildlife species that have been observed on the site include burrowing owl (*Athene cunicularia*), short-eared owl, (*Asio flammeus*), Light-footed Ridgeway's rail (*Rallus obsoletus levipes)*, Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), California least tern (*Sternula [=Sterna] antillarum browni*) and several other bird species, and the San Diego black-tailed

jackrabbit (*Lepus californicus bennettii*). Several other species of birds, mammals, and reptiles have a moderate to high potential to occur on the site.

Although in the long term, the proposed project will create more potential habitat for these species, construction activities associated with the restoration could result in adverse impacts to special-status plants and wildlife. According to the EIS, site preparation involving excavation and contour grading would result in the removal of 15 individuals of California box-thorn, 225 individuals of estuary seablite, and 8 individuals of woolly seablite, and approximately 1.26 acres of habitat (southern coastal salt marsh) that supports these species. To minimize impacts to these plant species, the EIS included MM-BIO-5, incorporated into this CDP under Special Condition 4, which requires that all three species be included in the planting palette for the restoration site and that estuary seablite be planted at a 2:1 ratio, and wooly seablite and California box-thorn be planted at a 1:1 ratio in the newly created mid to high marsh areas. The EIS also include mitigation measure MM-VIS-1, also incorporated into this CDP, which requires that a Revegetation Plan be developed should slope armoring be necessary that includes a monitoring plan and success criteria for these species.

To further ensure that sensitive species and ESHA areas are protected against significant disruption of habitat values, **Special Condition 10** requires pre-construction biological surveys to identify and map any special-status plant or wildlife species on the two project sites, including the presence of nesting birds, if applicable. Following the survey on each site, a report including survey results, a map of all sensitive habitat areas and special status species, and a list of recommended mitigation measures and/or monitoring protocols shall be submitted to the Executive Director for review and approval. **Special Condition 10** also requires that biological monitoring be conducted during project-related activities to ensure that biological resources including wetlands, sensitive habitat areas and special status species are protected. Furthermore, EIS mitigation measure MM-BIO-6, incorporated into this CDP under Special Condition 4, requires daily surveys for the presence of rails and other sensitive bird species at the Otay River crossing, in the Palomar channel, and in other potential rail habitat areas in the vicinity of the project. If sensitive species are present, this measure requires that loud noises or physical presence be deployed to move the birds off the site prior to commencement of construction activities.

With these measures in place, ESHA will be protected against any significant disruption of habitat values. In instances where impacts to ESHA are necessary to restore the surrounding habitat, impacts will be minimized and fully mitigated. Furthermore, proposed activities include sufficient measures to ensure that impacts to ESHA are avoided.

H. CULTURAL AND TRIBAL RESOURCES

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Coastal Act Section 30244 states that reasonable mitigation measures shall be required where development would adversely impact archaeological resources. These resources may include sacred lands, traditional cultural places and resources, and archaeological sites, including places or objects that possess historical, cultural, archaeological or paleontological significance and include sites, structures, or objects significantly associated with, or representative of earlier people, cultures and human activities and events. As described in the Commission's Tribal Consultation Policy, adopted on August 8, 2018, tribal cultural resources are not confined to the boundaries of archaeological sites, but instead can encompass landscapes that are significant to Native American tribal groups because of habitation or use for cultural practices.

Cultural and Historic Resources

The project area has the potential to contain archeological or paleontological resources. As part of the NEPA process, the USFWS conducted a records search, pedestrian surveys, geotechnical monitoring, and significance evaluations. From the EIS:

> *A records search was completed for the project site and a 0.25-mile radius around the project site ("study area") in April 2012 in support of archaeological monitoring of geotechnical soil sampling completed shortly thereafter. An intensive pedestrian survey was completed in August 2012, confirming the location and condition of resources identified in the records search, and subsequently recording two new prehistoric archaeological resources. Six cultural resources have been recorded within the study area.*

Of the six identified resources, two were recommended as eligible for listing in the National Register of Historic Places (NRHP), including a Prehistoric habitation with a likely association with the enthnohistoric village of La Punta, and the Western Salt Company Salt Works. Paleontological resource assessments of the region have identified the bay point formation, the soft alluvial/bay deposits that underlay the Otay River floodplain and the Pond 15 site, including the Otay site, as having a high potential for paleontological resources and, according to the EIS, "is known to produce Pleistocene age, scientifically significant paleontological resources throughout the South Bay."

The EIS assessed the potential for impacts to archeological or paleontological resources. The proposed project would not affect the identified Prehistoric habitation as it is outside the footprint of both the Otay and Pond 15 sites. The proposed project would affect the Western Salt Company Salt Works, although impacts to this historic resource have been addressed under an MOA between the USFWS and the State Historic Preservation Officer (SHPO) that was initiated for a prior project but was intended to mitigate adverse effects to all earthen levees associated with the salt ponds. The MOA stipulated that the USFWS: (1) record historic properties to Historic American Landscape Survey (HALS) standards and prepare a HALS written report and (B) provide interpretation of the solar salt industry at the South San Diego Bay Unit. The HALS report was completed in 2001 and addresses impacts associated with the proposed project. In addition, the USFWS completed additional photodocumentation and will provide additional interpretation of the resource. To address the potential for the impacts to unknown paleontological resources, the EIS included mitigation measure MM-PAL-1, incorporated into this CDP under Special Condition 4, that requires Poseidon to retain a qualified paleontologist to

monitor all rough grading and other significant ground-disturbing activities in depths greater than 10 feet below ground surface. With this condition in place, impacts to cultural resources, including archeological and paleontological resources will be minor.

Tribal Resources and Consultation

The project area also has a potential to contain tribal resources. Prior to the commencement of the NEPA process, the USFWS reached out to the California Native American Heritage Commission (NAHC) in 2011 to obtain information about known cultural and Tribal cultural resources and to request a list of Native American tribal members who have indicated an affiliation with the Project area. Based on the list provided by the NAHC, the USFWS contacted 21 tribal members included on the NAHC contact list. The NAHC response also noted that Native American cultural resources were identified within the project area, and that the USFWS should contact the tribal members on the NAHC contact list for more information about potential sites within the project area.

As part of the NEPA process, consultants for Poseidon conducted an intensive archeological survey for the entire Otay River Floodplain site. Initially, the Otay Floodplain site was larger than it is now. During the survey, partial human remains were discovered on the floodplain. Identification and treatment of remains followed the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA). The USFWS worked with tribal monitors and initiated Tribal Consultation with the Kumeyaay tribe, identified as the Most Likely Descendants resulting in the repatriation of the remains to the Kumeyaay Cultural Repatriation Committee. However, the potential for additional resources on the floodplain remains.

In 2013, Poseidon, in consultation with the USFWS, Commission staff and the SAP, revised the boundaries of the Otay site to eliminate portions of the floodplain site. This revision was undertaken to address concerns related to contamination found in the eastern portion of the Floodplain but also in part to address concerns related to the potential for adverse impacts to tribal resources from the proposed project. Although this change eliminated the potential for impacts to known tribal resources, proposed excavation of the Otay site could still result in adverse impacts to unknown tribal resources. To address this impact, the EIS included mitigation measures MM-CUL-3, MM-CUL-4 and MM-CUL-5, incorporated into this CDP under Special Condition 4. MM-CUL-3 requires that a qualified archaeologist and a qualified Kumeyaay cultural monitor be present for all grading and subsurface disturbance within the project's area of potential effect. The measure includes protocols in the event that a resource is discovered, specialized monitoring techniques for monitoring of ground disturbance in wet areas, and a provision for a final report at the conclusion of construction activities. MM-CUL-4 and MM-CUL-5 include protocols and standards Poseidon must follow in the event that archeological resources or human remains are discovered.

During the CDP review process, staff reached out to several tribal members for the purpose of consultation and coordination on the proposed CDP. Staff contacted 19 individuals included on the Tribal Consultation List provided by the NAHC in a letter dated April 5, 2019. Staff received one message from a tribal member requesting that tribal monitoring be required during ground disturbance activities. Staff did not receive any additional information or requests for consultation from tribal members or groups. The request for tribal monitoring is addressed with

the inclusion of MM-CUL-3, M-CUL-4 and MM-CUL-5, incorporated into this CDP under Special Condition 4.

The Commission finds that with the early changes to the Project description to avoid Tribal cultural resources and measures in place to address previously unknown cultural resources that may be encountered during construction activities, the project will not adversely impact archaeological, paleontological or tribal resources, and is therefore, as conditioned, consistent with Section 30244 of the Coastal Act.

I. HAZARDS

Section 30253 of the Coastal Act states, in applicable part, as follows:

New development shall do all of the following:

(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs…

The project site is located in an area of high geologic and flood hazards. According to the EIS, the project site is underlain with soils and groundwater conditions that put these areas at risk for impacts related to seismic ground shaking, seismically induced liquefaction, and settlement. The Pond 15 site is also vulnerable to inundation from tsunami in the event of a large magnitude earthquake. However, the proposed project would not increase the existing risk and would not place structures or people in areas susceptible to these hazards. Another potential concern is the risk for slope, levee, and/or riverbank instability or failure and increased erosion. To address these concerns, the proposed project incorporates reinforcement and widening, as necessary, of any levees needed for construction access. The levees around Pond 15 would be reinforced before dewatering to ensure soil stability during construction and once tidal influence is restored to the site. Proposed revegetation of all disturbed slopes would also increase the stability and decrease erosion from all levees and berms. Erosion control measures are further discussed in Section F.

The proposed project involves restoring tidal habitat that would result in significant changes to the tidal and terrestrial flooding regime of the Otay River Floodplain and the northern portion of the salt pond complex. To evaluate concerns related to the potential for increased flooding and erosion in the project vicinity, Poseidon developed a flood and erosion impact analysis to assess, according to the EIS, "the impacts of flooding associated with the 100-year flood, focused on changes to flow patterns and water elevations during flood conditions." The erosion impact analysis "evaluated project-induced velocity changes as a surrogate for erosion (scour) potential." Results of this modeling effort show that the proposed project would not affect flood elevations upstream of the I-5 bridge.

Downstream of the I-5 bridge, modeling shows that the proposed project would result in minor changes to the flooding regime. For example, the direction of flood flows during a 100-year event would change (**Exhibit 20**). Instead of immediately spilling uniformly into the lower salt

ponds, flood flows would first be routed to the east and west sides of the salt pond complex before spreading across the full width of the salt pond complex. This would result in increased flooding in many of the salt ponds although Pond 15 and the restored salt ponds on the western end of the complex would experience decreased flooding. In addition, the proposed project would not result in substantial changes to the potential for flooding of the Bayshore Bikeway during the 100-year event but would reduce the potential for flooding during smaller events. Finally, modeling showed that in a 100-year event, flooding is expected in an area located south of the Otay River in the vicinity of Bayside Park in Imperial Beach, both under existing conditions and after implementation of the proposed project. To decrease the potential and magnitude of flooding in this area, Poseidon is proposing as part of the project description to raise the levee between Ponds 22 and 23 by 2 feet. This action would divert flood flows away from the Bayside Park area and toward the northern salt ponds. As described above, the proposed project could result in increased flooding in some of the salt ponds. However, flooding in these areas would not affect sensitive areas such as urban development or environmental resources. For these reasons, the proposed project would minimize risks to life and property associated with flooding.

For the reasons described above, the Commission finds that the proposed project, as conditioned, would minimize risks to life and property from seismic and flooding hazards and assure stability and structural integrity, and is therefore consistent with Coastal Act Sections 30253(a) and (b).

J. PUBLIC ACCESS AND RECREATION

Section 30210 of the Coastal Act states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30213 of the Coastal Act states:

> *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.*

San Diego Bay is an important destination for tourists and residents to access and enjoy the California Coast. Although public access to the Pond 15 and Otay sites are restricted, there are numerous areas in the vicinity that provide opportunities to experience South San Diego Bay, including boating, fishing, wildlife observation, biking and hiking. The Bayshore Bikeway runs along the northern edge of the Otay River and offers opportunities to observe wildlife on the project site and the surrounding areas. In addition to providing recreational opportunities, the Bikeway also serves commuters. The region also includes a City of San Diego bike path and the Otay River Valley Regional Trail, both on the eastern boundary of the Otay River Flooplain site.

Although Pond 15 is generally inaccessible to the public, the USFWS does conduct occasional birding tours along the salt pond levees.

In general, the proposed project would enhance public access and recreational opportunities in the project vicinity by restoring tidal wetlands. The restored areas will support a diverse array of vegetation and wildlife that will enhance views and wildlife observation opportunities from the surrounding public trails and waterways. Construction of the proposed project could result in temporary impacts to public views and enjoyment of the site and traffic circulation in the area. However, the long-term benefits to public access and recreation from restoration of the two sites far outweigh any temporary impacts the public will experience during construction. To further minimize construction-related impacts, the EIS included mitigation measure MM-VIS-1, incorporated into this CDP under Special Condition 4. This measure requires that in the event that slope armoring along the Otay Channel is needed, Poseidon will implement a revegetation plan and accompanying monitoring plan to provide vegetative screening for the affected area. Furthermore, mitigation measure MM-NOI-1, also incorporated into this CDP under Special Condition 4, imposes limits on construction hours and requires measures to reduce noise from fixed and mobile construction equipment.

The proposed project could result in occasional, short-term disruptions to the Bayshore Bikeway during construction activities. Construction vehicles transporting material from the Otay site to the Pond 15 site would need to cross the Bikeway and the City of San Diego bikepath, resulting in potential conflicts with bicyclists. To address these concerns, the EIS included mitigation measures MM-REC-1 and MM-REC-2, incorporated into this CDP under Special Condition 4. MM-REC-1 requires Poseidon to install warning and notification signs along the Bayshore Bikeway to alert riders to construction activities and the potential for delay, provide flaggers to control truck and bicycle traffic on the Bikeway during construction, and install bicycle-friendly protective material on the Bikeway to limit damage to the path from truck traffic. MM-REC-2 requires Poseidon to reroute the City of San Diego bikepath for the duration of project construction. With these measures in place, impacts to public access and recreation during construction will be temporary and minor.

Construction of the proposed project could also result in impacts related to increased traffic congestion in the project vicinity. The main roads affected by transport of material from the Otay site to the Pond 15 site are two-lane collector streets and one local street, many of which are operating above capacity. To minimize impacts associated with increased traffic, Poseidon has proposed a haul route that avoids conflicts with traffic exiting I-5, the main source of traffic in the vicinity. To further reduce traffic-related impacts, the EIS included mitigation measures MM-TRA-1 and MM-TRA-2, incorporated into this CDP under Special Condition 4. MM-TRA-1 requires Poseidon to develop a construction area traffic control plan that includes provisions for warning signs, lights, flaggers, pedestrian detours, parking restrictions and restrictions on timing of lane closures. MM-TRA-2 requires Poseidon to schedule all deliveries of large equipment during off-peak traffic hours. Thus, as conditioned, the proposed project will minimize impacts to public access associated with construction traffic.

Therefore, for the reasons described above, the Commission finds the proposed project, as conditioned, will not have a substantial negative effect on the public's ability to access and enjoy

the coast, and the project is consistent with the public access and recreation policies of the Coastal Act.

K. AIR QUALITY

Coastal Act section 30253 states:

> *New development shall be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.*

Proposed project activities would result in construction-related air emissions associated with soil excavation and transport, fugitive dust and combustion pollutants from on-site construction equipment. The EIS included air emission calculations for VOC, NO_x, CO, SO_x, PM_{10} and $PM_{2.5}$ for construction activities spread out over two and a half years. The analysis concluded that daily construction emissions would not exceed the San Diego Air Pollution Control District (SDAPCD) daily thresholds (denoted in pounds per day) or the annual General Conformity de minimis thresholds (denoted in tons per year) for all criteria pollutants and thus concluded that the proposed project would not result in significant impacts related to air quality.

The EIS also evaluated greenhouse gas emissions associated with construction of the proposed project. Total construction emissions for the two and a half year construction period were estimated at 2,359 metric tons of CO_2 emissions. This estimate is significantly less than the SCAQMD suggested threshold for significance of 10,000 MT CO_2/year. For these reasons, the EIS concluded that the proposed project met all applicable air quality standards and does not result in a significant air quality impact. Based on this conclusion, the Commission finds that the proposed project is consistent with requirements imposed by the applicable air pollution control district and is thus consistent with Coastal Act Section 30253.

L. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the Commission's administrative regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts that the activity may have on the environment.

The Unites States Fish and Wildlife Service approved a final Environmental Impact Statement under the National Environmental Protection Act on October 31, 2018. In addition to covering required sections under NEPA, the EIS also included analysis of impacts required under CEQA. Several sections, including growth inducement, energy, and mineral resources, that do not address Coastal Act issues, are included in the EIS and were adequately analyzed in that document.

The proposed development has been conditioned to be found consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures, including conditions addressing wetlands, marine resources, water quality, environmentally sensitive habitat areas, cultural and Tribal resources, and public access, will ensure that the project does not result in any unmitigated significant adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

Table 1: ORERP Proposed Habitat

Habitat Type	Otay River Floodplain Site (acres)	Pond 15 Site (acres)
Subtidal	0	10.36
Mudflat - frequently flooded	4.37	16.42
Mudflat - frequently exposed	0.68	1.96
Low salt marsh	8.96	15.57
Mid salt marsh	11.62	34.88
High Salt Marsh	4.4	6.24
Total Created Wetland Habitat	**30.03**	**85.43**
Transitional	0.36	0.15
High Tide Refugia	0.24	1.44
Upland	3.93	3.88
Total Site Acreage	**34.56**	**90.9**

Table 2: Wetland Impacts Associated with ORERP

Impact Type	Impact Area (acres)	Mitigation Ratio	Mitigation Requirement (acres)
Otay site			
Conversion to tidal salt marsh	5.96	1:1	5.96
Conversion to uplands	0.56	4:1	2.24
Pond 15 Site			
Conversion to tidal salt marsh	80.96	N/A[1]	
Conversion to high tide refugia	1.44	N/A[2]	
Conversion to uplands	1.19	4:1	4.76
Project features - permanent	0.7	4:1	2.8
Project features - temporary	3.24	1:1	3.24
Total Project-Related Mitigation Requirement			19
Poseidon mitigation requirement (Special Condition 8 of E-06-13)			66.4
TOTAL Mitigation Requirement			**85.4**

1 Conversion of salt pond to tidal salt marsh is considered substantial restoration that Poseidon will receive credit for. Thus, although listed as an impact, it does not require additional mitigation.

2 Conversion of salt ponds to high tide refugia is considered substantial restoration that Poseidon will not receive credit for. Thus, although it is listed as an impact, it does not require additional mitigation.

Table 3: Available Mitigation Area Within the Project Sites

Project component	Acreage
Otay Site	
Total restored area	34.56
HTR, transition and berm	4.53
Available mitigation area	30.03
Pond 15 Site	
Total restored area	90.9
HTR, transition and berm	9.94
Total restored wetland area	80.96
Acreage available for credit based on 75% functional lift	60.72
Acreage available outside of Otay and Pond 15 (includes acreage for berm breaches between Ponds 13 and 14)	2.47
Total Available Mitigation Area	**93.22**

Appendix A: Substantive File Documents

California Coastal Commission. "Adopted Findings and Conditions for CDP E-06-013" Approved August 6, 2008.

California Coastal Commission. "Approved Marine Life Mitigation Plan" Approved August 8, 2008.

California Coastal Commission. "Staff Report for 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." September 22, 2010.

California Coastal Commission. "Staff Report for 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.

California Coastal Commission. "Staff Report for 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." December 9, 2013.

Cannon, David. "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.

Jenkins, Scott, Poon, Ying, Zeeman, Catherine and Carol Roberts. "Sensitivity Analysis of Potential DDT Deposition in the Otay River Estuary Restoration Plan (ORERP) Post-100 Year and 50-Year Floods." October 28, 2015.

Native American Heritage Commission. Letter Re: Otay River Estuary Resotration Project, San Diego County. Dated April 5, 2019.

Poseidon Resources, "Application for Coastal Development Permit 9-19-0025," originally submitted May 5, 2014.

Poseidon Resources. Letter to Alison Dettmer, Tom Luster and Kate Huckelbridge from Satn Williams 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.

Poseidon Resources, "Response to 6/4/2014 Notice of Incompleteness," dated August 24, 2018.

Schwarzbach, Dr. Steven, “A Review of Sensitivity Analysis of Potential DDT Deposition in the Otay River Estuary Restoration Plan (ORERP) Post 100 year and 50 Year Floods.” December 1, 2016.
Stolzenbach, Dr. Keith, “Technical Memorandum Re: Review of DDT dispersion Calculations.” December 1, 2016.

U.S. Fish and Wildlife Service, “Otay River Estuary Restoration Project, Final Environmental Impact Statement. February 2018.

Email Correspondence from Poseidon on 1/5/2017, 9/10/2018, 1/25/2019, 3/8/2019, 4/3/19, 4/8/19, 4/10/19, 4/11/19, 4/15/18, and 4/16/18.

Email Correspondence from USFWS on 12/12/2017, 6/29/2018, and 10/31/2018.