MITIGATED NEGATIVE DECLARATION

CABRILLO POWER I LLC ENCINA MARINE OIL TERMINAL DECOMMISSIONING PROJECT

December 2015

Lead Agency:
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, California 95825

Applicant:
Cabrillo Power I LLC
4600 Carlsbad Boulevard
Carlsbad, CA 92008
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<td>$\mu$Pa</td>
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<td>A</td>
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<td>asbestos-containing materials</td>
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<td>MPO</td>
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<td>parts per million</td>
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<td>permanent threshold shift</td>
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<td>Regional Air Quality Strategy</td>
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Abbreviations and Acronyms

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<td>Southern California Bight</td>
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<td>South Coast Information Center</td>
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<td>San Diego Natural History Museum</td>
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<td>State Endangered</td>
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<td>sound exposure level</td>
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<td>SEL_cum</td>
<td>cumulative sound exposure level</td>
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<td>State Implementation Plan</td>
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<td>SLIC</td>
<td>Spill, Leak, Investigation, and Cleanup Site</td>
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<td>SMARA</td>
<td>Surface Mining and Reclamation Act</td>
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<td>sulfur dioxide</td>
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<td>sulfur oxides</td>
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<td>semi-volatile organic compounds</td>
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<td>total petroleum hydrocarbon</td>
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<td>temporary threshold shift</td>
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EXECUTIVE SUMMARY

This Mitigated Negative Declaration (MND) has been prepared by the California State Lands Commission (CSLC), as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), to analyze and disclose the environmental effects associated with the proposed Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project). The Project would authorize Cabrillo Power I LLC (Applicant) to decommission the non-operational Encina Marine Oil Terminal (MOT), a component of the Encina Power Station (EPS), in accordance with the terms and conditions of the Applicant’s existing CSLC Lease PRC 791.1.

The proposed Project is located in and offshore of the City of Carlsbad, San Diego County. The tidelands and submerged lands under lease from the CSLC lie immediately west and offshore of Carlsbad State Beach south of Agua Hedionda (Figure ES-1), and encompass a mooring area and pipeline corridor (Figure ES-2). The offshore leased lands are located within the area represented on the San Luis Rey, California, U.S. Geological Survey 7.5-minute quadrangle map, Township 12S, Range 4W, San Bernardino baseline and meridian.

The EPS, which is located at 4600 Carlsbad Boulevard, is fronted by Carlsbad Boulevard and Carlsbad State Beach and houses the onshore termination of an approximately 3,855-foot-long fuel oil submarine pipeline and a beach valve pit (the fuel oil submarine pipeline is the only subsea pipeline at the EPS that will be decommissioned as part of this Project; the subsea intake and discharge pipelines for the EPS and adjacent Poseidon desalination plant are not part of this Project). From the EPS, the pipeline crosses under Carlsbad Boulevard through an underpass conduit and underpass end structure and below Carlsbad State Beach and a riprap groin to its offshore termination in approximately 60 feet of water. An onshore and beach site map is shown in Figure ES-3 (see also Figure A1-1 in Appendix A for a large-scale site map).

The CSLC prepared an MND because, while the Initial Study identified potentially significant impacts related to the decommissioning of the MOT, after analysis of all the facts and circumstances, CSLC staff believes that measures have been incorporated into the Project proposal and agreed to by Cabrillo Power I LLC that avoid or mitigate those impacts to a point where no significant impacts would occur.

PROPOSED PROJECT

The Project is primarily comprised of the 10 decommissioning elements listed below. Onsite decommissioning activities are expected to occur over two construction seasons and are currently scheduled to begin in September 2016 and end in January 2018.
Figure ES-1. Project Site Location
Figure ES-2. Mooring Area Detail
Figure ES-3. Onshore and Beach Site Map
Executive Summary

1. Removal of the entire fuel oil submarine pipeline, two 14,000-pound Danforth pipeline end anchors, and any remaining components of the pipeline termination marker buoy;
2. Decommissioning of the beach valve pit and all associated electrical and piping components;
3. Decommissioning of the underpass conduit;
4. Decommissioning of the underpass end structure;
5. Temporary removal of the riprap groin and restoration of the groin after the underlying fuel oil submarine pipeline has been removed;
6. Restoration of the beach;
7. Removal of the remaining seven-point mooring system (chains and anchors);
8. Removal of the remaining single-point mooring (chain and anchor);
9. Removal of the remaining navigation buoy (chain and clump); and
10. Removal of all seafloor debris associated with the MOT operations.

For planning purposes, Project facilities are divided into four discrete segments of work (onshore, beach, surf zone, and offshore segments) based on their location. The 3,855-foot fuel oil submarine pipeline passes through all four segments, with each segment requiring specific methods and equipment to perform the decommissioning work.

Onshore Segment

The onshore segment begins at the beach valve pit inside the EPS and extends approximately 110 feet to the underpass end structure on the eastern edge of the beach. Facilities located within this segment include a section of the fuel oil submarine pipeline and fill line; the beach valve pit (including a reinforced concrete rectangular vertical vault and horizontal shaft); the underpass conduit; the underpass end structure (including a reinforced concrete rectangular vertical vault and horizontal shaft); all the piping and electrical components; and appurtenances inside or attached to the outside of these structures. Decommissioning work for this segment would be performed by land-based crews and equipment and would include the following activities.

a) The entire fuel oil submarine pipeline would be removed from inside the beach valve pit, the underpass conduit, and the underpass end structure. This section of the pipeline would be extracted from the underpass through the beach valve pit and into the existing EPS facility.

b) The fill line would be plugged with cement slurry. Once the cement slurry plug in the fill line solidifies, the flanged end and pipe stub of the fill line (at the east wall
Executive Summary

of the beach valve pit) would be removed and a permanent steel plate cap would be welded on the cut end of the fill line.

c) At the beach valve pit, soil samples would be taken from underneath the floor. If contaminated soil exceeding allowable limits is found, the floor of the beach valve pit would be demolished and the underlying contaminated soil would be remediated to comply with regulatory requirements. If the soil samples are not contaminated, or if any contamination is less than allowable limits, the bottom portion (5 feet below grade or deeper) of the beach valve pit would be left intact, and the top portion (from the surface to 5 feet below grade) would be demolished and broken down to 5 feet below existing contours or to the top of the horizontal shaft of the beach valve pit, whichever is greater. The beach valve pit would then be backfilled and compacted with native soil to existing grade.

d) The underpass conduit would be filled with a cement slurry plug and abandoned in place.

e) The vertical vault portion of the underpass end structure would be excavated, demolished, and removed in its entirety up to the transition point to the horizontal shaft portion of the underpass end structure.

f) The horizontal shaft, wing walls, and a concrete footing of the underpass end structure (located below the existing westerly sidewalk and westerly southbound lane within the Carlsbad Boulevard right-of-way) would be abandoned in place.

g) The beach would be restored at the underpass end structure by backfilling the excavation with native sand to current beach contours.

h) All recovered pipe, concrete, and steel debris would be disposed of or recycled off-site.

i) All electrical and piping fixtures and appurtenances would be removed from inside the beach valve pit, the underpass conduit, and the underpass end structure, and abatement or removal of any contaminates including lead, asbestos, and hydrocarbons that exceed allowable limits would be conducted.

Beach Segment

The beach segment begins at the west side of the underpass end structure and extends approximately 220 feet into the intertidal zone near the mean low water line. Facilities located within the beach segment include a section of the fuel oil submarine pipeline and a riprap groin covering the pipeline. In order to excavate and remove the fuel oil submarine pipeline, the riprap groin would need to be permanently or temporarily removed. To determine potential near-field effects of removing the riprap groin (also referred to as the South Beach Groin), Jenkins (2013) conducted a shoreline evolution analysis (see Appendix L) to predict shoreline evolution over 20-year-long historic periods of waves, tides, currents, and dredge disposal. The study showed that, although
removal would have no apparent short-term effect on shoreline change, long-term (10 to 20 years) cumulative impacts, generally erosional in nature, to the shoreline would occur. Therefore, to retain the width of the existing shoreline, the riprap groin would be restored to pre-Project contours following the removal of the fuel oil submarine pipeline.

Decommissioning work for this segment would be performed by land-based crews and equipment, but limited to extreme low tide conditions when working in the intertidal zone. Work in the beach segment would be accomplished as follows.

a) The riprap groin would be temporarily moved to expose the underlying fuel oil submarine pipeline and stored on the beach during the pipeline removal process.

b) The fuel oil submarine pipeline would be removed in its entirety across the beach. As the pipeline is excavated and exposed, it would be cut into sections and trucked off-site, along with any associated debris, for disposal.

c) All excavations would be backfilled with native sand and the groin would be restored to pre-project contours.

Surf Zone Segment

The surf zone segment begins at the approximate mean low water line and extends approximately 750 feet offshore to the -15 foot bathymetric contour. Facilities located within the surf zone segment include a section of the fuel oil submarine pipeline and riprap groin. Excavation and removal of the submarine pipeline in the surf zone would involve both land- and offshore-based crews and equipment. Land-based work would be limited to extreme low tide conditions when working in the surf zone, and offshore-based work would be limited by the shallowest depth (-15 foot bathymetric contour) at which a barge or other floating support equipment can safely operate near the surf zone. Work in the surf zone segment would be accomplished as follows.

- The riprap groin would be temporarily moved to expose the underlying fuel oil submarine pipeline and stored on the beach during the pipeline removal process.
- The fuel oil submarine pipeline would be removed in its entirety. The pipeline would be excavated and exposed from beneath the beach sand and riprap groin and either removed using conventional, low-impact methods (Option 1) or dynamic pipe ramming (Option 2). Both options are described in further detail in Section 2.5.3.1. If either option is successful, this section of pipeline would be pulled offshore and raised to the surface, cut into truckable sections to be transported by barge to shore, and trucked to off-site disposal or recycling facilities. If both options fail, the remaining segment would be abandoned in place and the ends of the remaining pipeline would be opened to fill with sand.
- All required excavation would be backfilled with native sand and the groin would be restored to pre-project contours.
Offshore Segment

The offshore segment begins at the backside of the surf zone (approximately -15 foot bathymetric contour) and terminates approximately 2,525 feet offshore in approximately 60 feet of water. This segment includes the fuel oil submarine pipeline, remaining mooring and navigation components, and all seafloor debris associated with the tanker berth. Decommissioning work would be performed by offshore crews and equipment.

Work in the offshore segment would be accomplished as follows.

- The fuel oil submarine pipeline would be removed in its entirety. The pipeline would be raised onto the deck of the derrick barge and cut it into sections (Option 1), or cut on the seafloor by divers and recovered (Option 2). Both options are described in further detail in Section 2.5.4.2. In either case, this section of the pipeline would be cut into truckable sections and transported by barge to shore to be offloaded and trucked to off-site disposal or recycling facilities.

- The two 14,000-pound Danforth pipeline end anchors and mooring chains would be recovered, transported off-site, and recycled at appropriate facilities.

- All remaining components of the tanker berth’s seven-point mooring system, single-point mooring, and pipeline marker and navigation buoys would be completely removed, transported off-site, and recycled at appropriate facilities.

- All seafloor debris associated with the tanker berth and decommissioning operations would be recovered and transported off-site for recycling or disposal. Potential debris targets would be identified in the pre-decommissioning seafloor debris survey and inspected by divers to determine their identity.

EXISTING CONDITIONS

The MOT is partially abandoned and was placed in “caretaker” status after decommissioning/abandonment activities occurred in 2010. The 2010 decommissioning activities and existing conditions are described below.

- The fuel oil submarine pipeline was pigged and flushed three times with potable water to bring the hydrocarbon content of the water below non-detect limits. This pipeline was then charged with a mixture of potable water and Nalco EC6106A corrosion inhibitor to prevent internal corrosion of the pipeline. The pipeline has since been under vacuum.

- The fuel oil cargo hose, hose buoy, and steel pipe reducer were removed when the fuel oil submarine pipeline was pigged and flushed.

- Two 14,000-pound Danforth pipeline end anchors are located on either side of the fuel oil submarine pipeline to anchor it in position and no decommissioning work has been performed.
Prior to 2010, the fuel oil submarine pipeline end marker buoy was lost. The anchoring cable remains on the seafloor next to the end of the pipeline.

The beach valve was removed from the onshore end of the fuel oil submarine pipeline inside the beach valve pit, and the pipeline was blind flanged on both ends and fitted with a flushing port. The bypass piping, which attaches the fuel oil submarine pipeline to the fill line, remains intact and has also been blank flanged.

The beach valve pit, underpass conduit, and underpass end structure remain intact and in good condition and no decommissioning work has been performed.

The riprap groin remains intact; no decommissioning work has been performed.

The mooring buoys of the seven-point and single-point mooring systems were removed, but the chains and anchors remain on the seafloor.

The navigation buoy was removed, but its mooring chain and concrete clump remain on the seafloor.

ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

The environmental factors checked below in Table ES-1 would be potentially affected by this Project; a checked box indicates that at least one impact would be a “Potentially Significant Impact” except that the Applicant has agreed to Project revisions, including the implementation of mitigation measures (MMs), that reduce the impact to “Less than Significant with Mitigation,” as detailed in Section 3 of this MND. Table ES-2 lists proposed MMs designed to reduce or avoid potentially significant impacts. With implementation of the proposed MMs, all Project-related impacts would be reduced to less than significant.

Table ES-1. Environmental Issues and Potentially Significant Impacts

| ☒ Aesthetics | ☐ Agriculture and Forest Resources | ☐ Air Quality |
| ☒ Biological Resources (Terrestrial and Marine) | ☒ Cultural and Paleontological Resources | ☐ Geology and Soils |
| ☐ Greenhouse Gas Emissions | ☒ Hazards and Hazardous Materials | ☒ Hydrology and Water Quality |
| ☐ Land Use and Planning | ☐ Mineral Resources | ☒ Noise |
| ☐ Population and Housing | ☐ Public Services | ☐ Recreation |
| ☒ Transportation/Traffic | ☐ Utilities and Service Systems |
| ☒ Mandatory Findings of Significance |
| ☐ Other Major Areas of Concern: Commercial Fishing and Environmental Justice |
## Table ES-2. Summary of Proposed Project Mitigation Measures

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<td>MM AES-2: Night-Lighting Spillage Minimization</td>
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<td>MM BIO-2: Dynamic Pipe Ramming (DPR) Soft-Start and Ramp-Up Procedure</td>
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<td>MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris Removal</td>
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<td>MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal Cultural Resources are Discovered</td>
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<td>MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan</td>
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<td>MM CUL-5: Proper Disposition of Human Remains</td>
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<tr>
<td>MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA)</td>
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<tr>
<td>MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances</td>
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<td>MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil</td>
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<tr>
<th>Hydrology and Water Resources</th>
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<tr>
<td>MMs BIO-6, BIO-7, BIO-8, HAZ-3a, HAZ-3b, HAZ-4, and HAZ-5</td>
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<tr>
<td>MM NOI-1: Advanced Noticing</td>
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<td>MM NOI-2: Shielding of Stationary Equipment</td>
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<tr>
<td>MM NOI-3: Advanced Notice to Swimmers and Divers</td>
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<tr>
<td>MM NOI-4: Observation and Removal of Divers and Swimmers from Waters in Project Area</td>
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<tr>
<th>Transportation/Traffic</th>
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<td>MM TRA-1: Trucks Avoid Peak Hours</td>
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<td>MM TRA-2: Carpooling</td>
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<tr>
<td>MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC) Plan</td>
<td></td>
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<tr>
<td>MM TRA-4: Protect Infrastructure Improvements</td>
<td></td>
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<tr>
<td>MM TRA-5: Local Notice to Mariners</td>
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</tbody>
</table>
1.0 PROJECT AND AGENCY INFORMATION

1.1 PROJECT TITLE
Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project)

1.2 LEAD AGENCY AND PROJECT SPONSOR
California State Lands Commission (CSLC)
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825

Contact person:
Kelly Keen, Environmental Scientist
Division of Environmental Planning and Management
Kelly.Keen@slc.ca.gov
(916) 574-1938

Applicant:
Cabrillo Power I LLC
4600 Carlsbad Boulevard
Carlsbad, CA 92008

Contact person:
Jerry Carter, Plant Manager
NRG Cabrillo Power Operations
Jerry.Carter@nrgenergy.com
(760) 268-4011

1.3 PROJECT LOCATION
The proposed Project is located in and offshore of the City of Carlsbad, San Diego County. The Project would authorize Cabrillo Power I LLC (Applicant) to decommission the non-operational Encina Marine Oil Terminal (MOT), a component of the Encina Power Station (EPS), in accordance with the terms and conditions of the Applicant’s existing CSLC Lease PRC 791.1. The tidelands and submerged lands under lease from the CSLC lie immediately west and offshore of Carlsbad State Beach south of Agua Hedionda (Figure 1-1), and encompass a mooring area and a pipeline corridor (Figure 1-2; see also Figure A1-1 in Appendix A and Figure ES-3). The offshore lease lands are located within the area represented on the San Luis Rey, California, U.S. Geological Survey 7.5-minute quadrangle map, Township 12 South, Range 4 West, San Bernardino baseline and meridian. The EPS, which was built in 1953, is located at 4600 Carlsbad Boulevard and is fronted by Carlsbad Boulevard and Carlsbad State Beach (Figure 1-3).
Figure 1-1. Project Site Location
Figure 1-2. Mooring Area Detail
Figure 1-3. Original Construction Photograph
The EPS houses the onshore termination of an approximately 3,855-foot-long fuel oil submarine pipeline and a beach valve pit. From the EPS, this pipeline crosses under Carlsbad Boulevard through an underpass conduit and underpass end structure and below Carlsbad State Beach and a riprap groin to its offshore termination in approximately 60 feet of water.

1.4 ORGANIZATION OF MITIGATED NEGATIVE DECLARATION

This Mitigated Negative Declaration (MND) is intended to provide the CSLC, as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), and other responsible agencies with the information required to exercise their discretionary responsibilities with respect to the proposed Project. The document is organized as follows.

- **Section 1** provides the Project background, Agency and Applicant information, Project Objectives and anticipated agency approvals, and a summary of the public review and comment process.

- **Section 2** describes the proposed Project including its location, layout, equipment, and facilities. Section 2 also provides an overview of the Project's operations and schedule.

- **Section 3** provides the Initial Study (IS), including the environmental setting, identification and analysis of potential impacts, and discussion of various Project changes and other measures that, if incorporated into the Project, would mitigate or avoid those impacts, such that no significant effect on the environment would occur. The IS was conducted by the CSLC pursuant to section 15063 of the State CEQA Guidelines.

- **Section 4** includes an environmental justice analysis and discussion consistent with CSLC Policy.

- **Section 5** presents the Mitigation Monitoring Program (MMP).

- **Section 6** presents information on report preparation and references.

- **Appendices**. The appendices include specifications, technical data, and other information supporting the analysis presented in this MND.
  - **Appendix A**: Project Description Support Exhibits
  - **Appendix B**: Nalco EC6106A Material Safety Data Sheet

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1 The fuel oil submarine pipeline is the only subsea pipeline at the EPS that will be decommissioned as part of this Project. The subsea intake and discharge pipelines for the EPS and adjacent Poseidon desalination plant are not part of this Project.

2 The State “CEQA Guidelines” are found in Title 14 of the California Code of Regulations, commencing with section 15000.
1.5 PROJECT BACKGROUND AND OBJECTIVES

Use of State tidelands for the Encina MOT mooring facilities and fuel oil submarine pipeline is authorized under CSLC Lease PRC 791.1. This site was originally leased to San Diego Gas and Electric (SDG&E) in 1953 for 49 years. In that same year, the EPS and offshore MOT were built. The EPS was originally constructed as an oil burning, steam generating, electric power generation plant, with the MOT designed to transfer bunker fuel oil between ocean vessels and shore-side storage facilities; however, in the 1980s, the power plant was converted to use natural gas as a fuel source, while the MOT was retained to provide an alternative fuel source as required by the California Independent System Operator. This requirement is no longer in place (effective January 1, 2009), and the need to maintain the MOT has ceased.

In 1999, Cabrillo Power I LLC acquired the EPS and MOT from SDG&E. The original lease expired on March 23, 2002, but was continued in holdover status while an Environmental Impact Report for a companion project was being prepared for the extension of two rock groins protecting the entrance to Agua Hedionda Lagoon. That project was ultimately abandoned, thus requiring the negotiation of a replacement lease.
for the MOT to allow time to prepare a formal plan for removal or abandonment as an
independent project.

During the holdover period, the offshore MOT was placed into “caretaker” status after
decommissioning/abandonment activities occurred in 2010. On February 8, 2011, the
CSLC retroactively approved a 10-year lease that expired on March 23, 2012. Formal
abandonment planning lead to the issuance of a 3-year General Lease-Industrial Use to
Cabrillo Power I LLC beginning March 24, 2012, for the continued maintenance of
portions of the partially abandoned MOT. The current lease expired on March 23, 2015;
however, an application to extend the lease another 5 years is pending CSLC approval.

The 2010 decommissioning activities and existing conditions are described below.

- The fuel oil submarine pipeline was pigged and flushed three times with potable
  water to bring the hydrocarbon content of the water below non-detect limits. This
  pipeline was then charged with a mixture of potable water and Nalco EC6106A
  corrosion inhibitor to prevent internal corrosion of the pipeline. The pipeline has
  since been under vacuum.

- The fuel oil cargo hose, hose buoy, and steel pipe reducer were removed when
  the fuel oil submarine pipeline was pigged and flushed.

- Two 14,000-pound Danforth pipeline end anchors, which were not
decommissioned in 2010, are located on either side of the fuel oil submarine
  pipeline to anchor it in position.

- Prior to 2010, the fuel oil submarine pipeline end marker buoy broke loose and
  was lost. The buoy anchoring cable remains on the seafloor next to the end of
  the fuel oil submarine pipeline.

- The beach valve was removed from the onshore termination of the fuel oil
  submarine pipeline inside the beach valve pit. This pipeline was blind flanged on
  both ends and fitted with a flushing port. The bypass piping, which attaches the
  fuel oil submarine pipeline to the fill line, remains intact and has also been blank
  flanged.

- The beach valve pit, underpass conduit, underpass end structure, and riprap
  groin remain intact (no decommissioning work was performed).

- The mooring buoys of the seven-point and single-point mooring systems were
  removed, but the chains and anchors remain on the seafloor.

- The navigation buoy was removed, but its mooring chain and concrete clump
  remain on the seafloor.
The Project objective is to decommission the MOT components in a manner that satisfies the terms of CSLC Lease PRC 791.1 and other public agencies with jurisdictional authority over Project elements.

1.6 PUBLIC REVIEW AND COMMENT

In accordance with State CEQA Guidelines sections 15072 and 15073, the CSLC is releasing this MND for a minimum 30-day public review period to provide local and State agencies and the public the opportunity to review and comment on the document. In accordance with State CEQA Guidelines section 15074, subdivision (b), the CSLC will review and consider the MND, together with any comments received during the public review process and any modifications made in response to comments, prior to taking action on the MND and Project.

1.7 APPROVALS AND REGULATORY REQUIREMENTS

The CSLC’s authority is set forth in Division 6 of the California Public Resources Code and it is regulated by the California Code of Regulations, Title 2, sections 1900–2970. The CSLC has authority to issue leases or permits for the use of sovereign lands held in the public trust, including all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways, as well as certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust. As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion. For the proposed Project, the CSLC has received an application for decommissioning of the Encina MOT in accordance with the requirements of Lease PRC 791.1 and termination of the lease.

The CSLC must comply with CEQA when it undertakes an activity defined by CEQA as a "project" that must receive some discretionary approval (i.e., the CSLC has the authority to deny the requested lease, permit, or other approval) which may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment. CEQA requires the CSLC to identify the significant environmental impacts of its actions and to avoid or mitigate those impacts, if feasible.
In addition to the CSLC, the Project is subject to the review and approval of other Federal, State and local entities with statutory and/or regulatory jurisdiction over various aspects of the Project (see Table 1-1).

Table 1-1. Agencies with Review/Approval over Project Activities

<table>
<thead>
<tr>
<th>Permitting Agency</th>
<th>Anticipated Approvals/Regulatory Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local</strong></td>
<td></td>
</tr>
<tr>
<td>City of Carlsbad</td>
<td>Demolition Permit</td>
</tr>
<tr>
<td></td>
<td>Grading Permit</td>
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<tr>
<td></td>
<td>Roadway Encroachment Permit</td>
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<td></td>
<td>Development Permit (if necessary)</td>
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<td>Haul Route Permit (if necessary)</td>
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<td></td>
<td>Stormwater Pollution Prevention Plan (SWPPP)</td>
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<tr>
<td></td>
<td>Permit</td>
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<tr>
<td>County of San Diego Department of Environmental Health (SDDEH) - Voluntary Assistance Program</td>
<td>California Health and Safety Code sections 101480-101490 authorize the SDDEH to enter into voluntary agreements for the oversight of remedial action at sites contaminated by wastes</td>
</tr>
<tr>
<td>San Diego County Air Pollution Control District (APCD)</td>
<td>Rules compliance</td>
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<tr>
<td><strong>State</strong></td>
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<tr>
<td>California State Lands Commission (CSLC)</td>
<td>Lease</td>
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<td></td>
<td>Offshore Geophysical Survey Permit</td>
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<tr>
<td>California Coastal Commission (CCC)</td>
<td>Coastal Development Permit</td>
</tr>
<tr>
<td>California Department of Fish and Wildlife (CDFW)</td>
<td>California Fish and Game Code</td>
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<td></td>
<td>California Endangered Species Act</td>
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<tr>
<td>California Department of Parks and Recreation (State Parks)</td>
<td>Public Resources Code sections 5001-5019.5 Right-of-Entry Permit</td>
</tr>
<tr>
<td>Native American Heritage Commission (NAHC)</td>
<td>Tribal Consultation (see Appendix K)</td>
</tr>
<tr>
<td>San Diego Regional Water Quality Control Board (San Diego RWQCB)</td>
<td>CWA Section 401 Water Quality Certification</td>
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<tr>
<td><strong>Federal</strong></td>
<td></td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers (USACE)</td>
<td>Clean Water Act Section 404 (under Nationwide Permit No. 12)</td>
</tr>
<tr>
<td>U.S. Fish and Wildlife Service (USFWS)</td>
<td>Section 7 Consultation under Federal Endangered Species Act (if necessary)</td>
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<tr>
<td>National Marine Fisheries Service (NMFS)</td>
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<tr>
<td>U.S. Coast Guard (USCG)</td>
<td>Title 33 Code of Federal Regulations - Navigation and Navigable Waters</td>
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<td></td>
<td>Navigation consultation</td>
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<td></td>
<td>Notice to Mariners</td>
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Because Project components are proposed in the coastal zone within the jurisdiction of the California Coastal Commission, Table 1-2 identifies coastal-related Federal and State laws and programs that are relevant to the Project; specific policies are listed in Section 3, Environmental Analysis and Checklist, of this MND for each environmental issue area.
Table 1-2. Major Coastal Laws, Regulations, and Policies

<table>
<thead>
<tr>
<th>U.S.</th>
<th>California Coastal Act (Coastal Act) of 1976 (Pub. Resources Code, §§ 30000 et seq.)</th>
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<tbody>
<tr>
<td></td>
<td>CCC Federal Consistency Program/ California Coastal Management Program</td>
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<tr>
<td></td>
<td>Pursuant to the Coastal Act, the CCC, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. The Coastal Act includes specific policies (see Chapter 3) that address issues such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works. Development activities in the coastal zone generally require a coastal permit from either the CCC or the local government: (1) the CCC retains jurisdiction over the immediate shoreline areas below the mean high tide line and offshore areas to the 3 nautical mile State water limit; and (2) following certification of county- and municipality-developed Local Coastal Programs, the CCC has delegated permit authority to many local governments for the portions of their jurisdictions within the coastal zone. The CCC also implements the CZMA as it applies to federal activities (e.g., development projects, permits, and licenses) in the coastal zone by reviewing specified federal actions for consistency with the enforceable policies of Chapter 3 of the Coastal Act.</td>
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The CZMA recognizes a national interest in coastal zone resources and in the importance of balancing competing uses of those resources, giving full consideration to aesthetic, cultural and historic, ecological, recreational, and other values as well as the needs for compatible economic development. Pursuant to the CZMA, coastal states develop and implement comprehensive coastal management programs (CMPs) that describe uses subject to the CMP, authorities and enforceable policies, and coastal zone boundaries, among other elements. The CZMA also gives state coastal management agencies regulatory control (“federal consistency” review authority) over federal activities and federally licensed, permitted or assisted activities, if the activity affects coastal resources; such activities include military projects at coastal locations and outer continental shelf oil and gas leasing, exploration and development. The CCC and San Francisco Bay Conservation and Development Commission coordinate California’s federally approved CMPs and federal consistency reviews within their respective jurisdictions.
2.0 PROJECT DESCRIPTION

2.1 NEED FOR PROJECT

The proposed Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project) is needed to decommission the Marine Oil Terminal (MOT) components in a manner that satisfies the terms of California State Lands Commission (CSLC) Lease PRC 791.1 and other public agencies with jurisdictional authority over Project elements.

2.2 PROJECT LOCATION

The proposed Project is located in and offshore of the City of Carlsbad, San Diego County. The property under lease from the CSLC includes parcels of tidelands and submerged lands lying immediately west and offshore of Carlsbad State Beach south of Agua Hedionda. The leased land encompasses a mooring area and a pipeline corridor. (See Section 1.3, Project Location, and Figure A1-1 in Appendix A.)

2.3 ENCINA MOT COMPONENTS AND THEIR EXISTING DISPOSITION

2.3.1 Fuel Oil Submarine Pipeline

The fuel oil submarine pipeline extends approximately 3,855 feet\(^3\) from an onshore beach valve pit at the Encina Power Station (EPS), underneath Carlsbad Boulevard and Carlsbad State Beach, to its termination in approximately 60 feet water depth. It is comprised of a 20-inch-diameter by 0.5-inch wall welded steel pipe with a 2-inch external somastic and cement weight coating, and it terminates in a 300-pound, 20-inch-diameter flange. The pipeline is anchored on the seafloor with two 14,000-pound Danforth anchors that lie on either side of the line and are connected to the pipeline’s steel collar with 90-foot-long anchor chains (see Figure A2-1 in Appendix A). A plastic spar buoy, which served as the pipeline end marker buoy, was anchored to the seafloor with a steel cable attached to a small concrete clump.

In 2010, during initial EPS MOT decommissioning activities, a steel pipe reducer and a fuel oil cargo hose that were located at the offshore end of the fuel oil submarine pipeline were removed. The anchoring cable for the end marker buoy, which had broken loose and was lost prior to 2010, was found on the seafloor near the end of pipeline. The pipeline was pigged and flushed three times with potable water from its offshore termination to its onshore termination to bring the hydrocarbon level below 15 parts per

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\(^3\) An approximately 500-foot extension was added to the offshore end of the pipeline in about 1973, and a steel collar was later placed around the pipeline near its offshore termination (due to a change in MOT ownership, some facility records are unavailable, and dates of certain activities are inferred from available documents).
The flush water was sampled during each of the three pigging events and tested for hydrocarbon content; the final sample was tested and found to be at non-detect levels. The fuel oil submarine pipeline was then filled with 1,450 barrels (approximately 60,900 gallons) of potable water and 385 gallons of Nalco EC6106A corrosion inhibitor (for a total of approximately 61,285 gallons) containing a biocide ingredient approved by the CSLC (see Appendix B, Nalco EC6106A Material Safety Data Sheet). The pipeline was capped with a blind flange with a fitted flushing port and has since been under vacuum with no signs of leakage.

### 2.3.2 Beach Valve Pit

The beach valve pit is located inside the EPS facility alongside Carlsbad Boulevard. This reinforced concrete structure consists of a rectangular vault, a buried rectangular horizontal shaft, and miscellaneous pipes and electrical appurtenances (see Figure 2-1). The outside measurements of the rectangular vault are approximately 14 feet long, 12 feet wide, and 15 feet deep, including a sump. The beach valve pit is secured with a hand railing around the rim of the pit and is accessible via a welded steel ladder attached to the pit wall. Additionally, an awning is elevated over the beach valve pit. The rectangular horizontal shaft is a homogeneous part of the vault that extends in a west/southwest direction underneath the sidewalk and terminates underneath Carlsbad Boulevard where it connects to a reinforced concrete pipe underpass. The horizontal shaft portion of the beach valve pit is approximately 17 feet long from the westerly wall of the vault and is approximately 10 feet high by 10 feet wide (outside dimensions).

The beach valve pit houses the onshore termination of the fuel oil submarine pipeline, which was connected to (and could be isolated from) the fill line (to the tank farm) via a beach valve, but now terminates in a flanged connection (90-degree elbow) with a 2-inch-diameter sampling port fitted into the blind flange (see bottom photograph in Figure 2-1).

A 6-inch-diameter bypass pipe taps into the side of the fuel oil submarine pipeline termination and connects to the side of the fuel oil fill line to the tank farm. The fill line is comprised of 20-inch-diameter by 0.31-inch-thick wall, ASTM A-155 Grade B carbon steel pipe, with an external corrosion coating. The fill line extends approximately 18 inches through the east wall of the beach valve pit and continues approximately 380 feet underground to a second valve pit where it passes through a valve and continues beyond that point to the tank farm. The distance from the fill line’s point of origin in the beach valve pit to the end of the tank farm is approximately 1,650 feet. The beach valve pit remains intact and in good condition, and no decommissioning work has been performed on this structure.
Figure 2-1. Beach Valve Pit Photographs
2.3.3 Underpass Conduit

The underpass conduit is a reinforced concrete pipe that contains the fuel oil submarine pipeline. Buried approximately 2 to 3 feet underneath Carlsbad Boulevard (see Appendix C), the 8-foot-diameter underpass conduit measures approximately 73 feet in length, socket to socket, and is supported on the east and west end with concrete footings. The shoreward termination of the underpass conduit begins at its socketed connection to the horizontal shaft of the beach valve pit located underneath the east side of Carlsbad Boulevard. The underpass conduit extends underneath Carlsbad Boulevard and ties into the horizontal shaft of the underpass end structure (see Section 2.3.4, below) buried underneath the beach adjacent to the west of Carlsbad Boulevard.

At the westerly (seaward) end of the underpass conduit, where it connects to the horizontal shaft of the underpass end structure, reinforced concrete retaining wing walls were constructed. The wing walls extend approximately 10 feet in length at approximately 30-degree angles off the underpass centerline to the northwest and southwest of the underpass end structure. The wing walls were originally constructed to be approximately 5 feet above the top of the underpass conduit; however, the wing walls were cut and lowered to accommodate the widening of Carlsbad Boulevard and the existing sidewalk (see Figure A1-2 in Appendix A). As a result, the wing walls are not visible and their present status cannot be confirmed at this time.

Inside the underpass conduit, the fuel oil submarine pipeline is bedded on a layer of sand (approximately 1 foot in depth) placed on the inside floor of the underpass conduit. According to a hazardous materials survey performed by Royal Environmental Services, Inc. and reported on February 12, 2013 (see Appendix D), the sand inside the underpass near the beach valve pit was tested and found to contain total hydrocarbons at levels ranging from 1,300 milligrams/kilogram (mg/kg) to 35,000 mg/kg.

The underpass conduit remains intact and in good condition, and no decommissioning work has been performed on this structure.

2.3.4 Underpass End Structure

The underpass end structure consists of a reinforced concrete vertical vault and horizontal shaft that connects to the west end of the underpass conduit (see Figure 2-2 and Appendix C). The fuel oil submarine pipeline exits the underpass conduit and end structure through a port and is currently buried underneath the beach.

The horizontal shaft and vertical vault of the underpass end structure are homogeneous. The horizontal shaft is approximately 10 square feet and 10 feet deep (outside dimensions), and is connected to the underpass conduit via a formed socket filled with hot-poured para-plastic.
Figure 2-2. Underpass End Structure Photographs
The vertical vault is approximately 15.5 feet high, 10 feet wide, and 6.5 feet deep (outside dimensions). The top of the vertical vault contains a 30-square-inch manhole and a vent pipe that is approximately 18 inches in diameter and 7 feet high. The floor of the vertical vault consists of a gravel-filled sump or drain that is open to the beach on the bottom of the structure (beneath the gravel fill).

Compared to as-built plans, it appears that Carlsbad Boulevard was widened after the underpass end structure was constructed in 1954. As a result, the horizontal shaft appears to be covered by the existing sidewalk on the west side of Carlsbad Boulevard, while the vertical vault’s manhole and vent pipe are exposed at the edge of the sidewalk on the beach. The end structure remains intact and in good condition, and no decommissioning work has been performed on this structure.

2.3.5 Riprap Groin

A riprap groin protects the fuel oil submarine pipeline on the beach and in the surf zone. At its widest visible point, the groin measures approximately 55 feet and extends approximately 160 feet into the surf zone from the high water line; however, the actual width and length of the groin is unknown because much of it is buried beneath sand. Based on the as-built drawing of the underpass end structure, it is possible that the groin extends approximately 250 feet below the existing beach to the wing walls of the underpass end structure (see Appendix C). The depth of the fuel oil submarine pipeline underneath the groin is unknown. The riprap groin remains intact and in good condition, and no decommissioning work has been performed on this structure.

2.3.6 Seven-Point Mooring System

A seven-point mooring system was used to moor ships or barges offloading fuel oil into the MOT’s submarine pipeline. Each leg of this system consisted of: a single 30,000 pound (105 ton) Baldt Light Weight Type anchor; four to six shots (360 feet to 540 feet) of 2.75-inch to 3-inch anchor chain weighing approximately 119.8 tons; and one horizontal cylindrical painted steel mooring buoy (see Figure A2-2 in Appendix A). In operation, mooring wires from a tanker or barge were connected to the top of each mooring buoy and tensioned by the tanker’s or barge’s mooring winches to center the vessel near the end of the fuel oil submarine pipeline. The mooring buoy was removed during the EPS MOT 2010 decommissioning, but the anchors and chains of the seven-point mooring system remain on the seafloor at depths ranging from 42 feet to 78 feet.

2.3.7 Single-Point Mooring System

A single-point mooring was placed offshore of the tanker berth mooring for use by an attending tugboat. This single-point mooring consisted of: a single 14,000-pound Navy stockless anchor; approximately 450 feet of 2.75- to 3.25-inch anchor chain; and a
single horizontal cylindrical painted steel mooring buoy (West Coast can type). The mooring buoy for this single-point mooring was removed during the EPS MOT 2010 decommissioning, but the chain and anchor remain on the seafloor.

2.3.8 Navigation Buoy

A lighted navigation buoy fitted with a bell was used to mark the offshore entrance of the MOT. Located approximately 1,800 feet offshore of the fuel oil submarine pipeline termination, in approximately 110 feet of water, the buoy was anchored to the seafloor by a 1.5- to 2.75-inch-diameter anchor chain attached to a 64-cubic-foot concrete clump on the seafloor. The navigation buoy was removed during the EPS MOT 2010 decommissioning, but the anchor chain and concrete clump remain on the seafloor.

2.4 PROJECT OVERVIEW

2.4.1 Project Elements

The Project described herein is comprised of the following decommissioning elements:

1. Removal of the entire fuel oil submarine pipeline including the two 14,000-pound Danforth pipeline end anchors and any remaining components of the pipeline termination marker buoy;
2. Decommissioning of the beach valve pit and all associated electrical and piping components;
3. Decommissioning of the underpass conduit;
4. Decommissioning of the underpass end structure;
5. Temporary removal of the riprap groin and restoration of the groin after the underlying fuel oil submarine pipeline has been removed;
6. Restoration of the beach;
7. Removal of the remaining seven-point mooring system (chains and anchors);
8. Removal of the remaining single-point mooring (chain and anchor);
9. Removal of the remaining navigation buoy (chain and clump); and
10. Removal of all seafloor debris associated with the MOT operations.

2.4.2 Pre- and Post-Decommissioning Deliverables and Activities

Certain activities and deliverables would be performed or provided prior to or after the completion of decommissioning operations. These activities and deliverables are listed and described below.
2.4.2.1 Marine Safety and Anchoring Plan

A preliminary Marine Safety and Anchoring Plan (MSAP) was prepared for the Project (see Appendix E). The MSAP would be updated prior to Project commencement to reflect the most current ocean floor conditions in the Project area based upon a pre-decommissioning seafloor survey. The purpose of the MSAP is to provide a precise set of procedures and protocols that would be used by the decommissioning contractor when executing the marine decommissioning work. The primary concerns addressed by the MSAP are personal, environmental, and vessel safety.

2.4.2.2 Marine Wildlife Contingency Plan

A Marine Wildlife Contingency Plan (MWCP) was prepared for the Project and is provided in Appendix F. The purpose of the MWCP is to provide measures that would be incorporated into the Project that are designed to reduce or eliminate impacts of the proposed decommissioning activities on marine wildlife.

2.4.2.3 Oil Spill Response Plan

An Oil Spill Response Plan (OSRP) was prepared for the Project and is provided in Appendix G. The purpose of the OSRP is to present an overview of the measures incorporated into the Project design to minimize the potential for a hydrocarbon release and to outline the procedures and protocols that would be used in the event of an onshore or offshore oil spill resulting from Project activities.

2.4.2.4 Contractor Work Plan

A technical consultant and marine contractor would develop and submit a Contractor Work Plan (CWP) a minimum of 60 days prior to the start of decommissioning for review by the CSLC staff and other appropriate permitting agencies. The CWP would include engineered decommissioning plans and specifications provided by a licensed professional engineer and fully detail the contractor’s planned scope of work, methodologies, manpower, equipment, and schedule. Additionally, the CWP would incorporate all permit conditions and include critical operations and curtailment plans, a spill response and cleanup plan, a site safety plan, a dive safety plan, an emergency response plan, noise management plans, best management practices, and other essential plans and information pertinent to decommissioning operations.

2.4.2.5 Mitigation Compliance Plan

An environmental consultant would develop and submit an environmental Mitigation Compliance Plan (MCP) at least 60 days prior to the start of decommissioning operations. The MCP would be used by environmental monitors to assure that all Project operations comply with all permit conditions and reporting requirements.
2.4.2.6 Pre- and Post-Decommissioning Seafloor Debris Surveys

The offshore decommissioning work would begin and end with a seafloor debris survey. The survey would be completed by a marine surveyor, technicians, and an environmental monitor aboard a commercial survey boat (approximately 35 feet in length) with a side-scan sonar system (400% coverage) and fathometer (alternatively a 3D multi-beam sonar system), and a commercial grade differential global positioning system with sub-meter accuracy.\(^4\) The survey would encompass the entire underwater worksite bordered by the contractor’s planned derrick barge anchorages, which would be positioned to avoid rock outcroppings and kelp beds plus an offset of approximately 500 feet. The surveyor would produce a map to serve as the baseline for seafloor conditions at the underwater worksite prior to the start of decommissioning operations. After decommissioning is complete, a seafloor debris survey of the underwater worksite would be repeated with the same equipment to identify any debris introduced during Project operations. If debris is found at the worksite, all items would be removed by the contractor, transported off-site, and recycled at appropriate permitted facilities. The pre- and post-decommissioning survey map would be provided to CSLC staff and other permitting agencies for approval and sign-off of Project completion.

2.4.2.7 Pre-Decommissioning Fuel Oil Submarine Pipeline Flush

During the 2010 EPS MOT decommissioning, the fuel oil submarine pipeline was pigged, flushed to lower hydrocarbon levels to non-detect levels, and placed in storage with a mixture of potable water and Nalco EC6106A totaling approximately 61,285 gallons. As a precautionary measure, prior to the start of decommissioning work, the pipeline contents would be re-sampled for hydrocarbon content. If hydrocarbon levels of 15 ppm or higher are found in the pipeline, it would be pigged and flushed to bring the hydrocarbon level to a non-detect level. The Nalco EC6106A preservative currently in the pipeline contains a biocide ingredient (see Appendix B, Nalco EC6106A Material Safety Data Sheet), so the storage water would be displaced from the pipeline with a seawater flush prior to opening the pipeline to the ocean for decommissioning. The pipeline would be flushed from its offshore termination to its onshore termination at the beach valve pit, where the potable water and preservative mixture would be recovered and transported off-site for treatment and disposal.

The flushed water used to clean the interior of the fuel oil submarine pipeline would be chemically analyzed for the presence of volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260 (gas chromatography mass spectrometry) or for isopropanol by USEPA Method 8015M (flame ionization detection-
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direct injection), and for the presence of semi-volatile organic compounds (SVOCs) using USEPA Method 8270. Acceptable residual concentrations of VOCs, isopropanol, and SVOCs would be determined in coordination with the Regional Water Quality Control Board and would be in compliance with California Ocean Plan discharge requirements (State Water Resources Control Board [SWCRB] 2012). Alternatively, the pipeline contents may be displaced from the offshore termination to the onshore termination with air or nitrogen to lighten the fuel oil submarine pipeline for recovery using a reverse pipe lay removal method (discussed in Section 2.5.4, Offshore Decommissioning Activities). Depending on the method selected to remove the offshore segment of the pipeline, the offshore termination may be left open to the ocean after flushing to permit the water level inside the pipeline to fall to sea level.

2.4.2.8 Final Report and As-Built Drawings

A Project report would be prepared for submission to CSLC staff within 30 days of Project completion. This report would include: (1) an overview of the Project; (2) the final disposition of all facility components, a discussion of any major events that occurred during decommissioning, and lessons learned; (3) a scaled map showing the location and coordinates of any facilities abandoned-in-place and a description of those facilities; and (4) MCP documentation.

2.5 MOT DECOMMISSIONING PLANS AND PROCEDURES

This section provides the general plans and procedures that may be employed during MOT decommissioning; final plans and procedures would be provided in the CWP. For decommissioning planning purposes, the Project components and facilities have been divided into four discrete work segments (onshore, beach, surf zone, and offshore) based on the environment in which they are located, methods and equipment required to perform the decommissioning work, and seasonal work constraints. Although the MOT facilities and decommissioning activities are presented from east to west (onshore to offshore), the scheduled progression of these activities does not follow this order. The Project schedule is discussed in Section 2.6, Preliminary Decommissioning Schedule.

2.5.1 Onshore Decommissioning Activities

The onshore segment begins at the beach valve pit inside the EPS and extends approximately 110 feet to the underpass end structure adjacent to Carlsbad Boulevard on the eastern edge of the beach (see Figure 2-3). Facilities located within the onshore segment include a section of the fuel oil submarine pipeline and fill line, the beach valve pit, the underpass conduit, underpass end structure, and all piping, electrical components, and appurtenances located inside or attached to the outside of these structures. The decommissioning work for the onshore segment would be performed by land-based crews and equipment and accomplished as described below.
Figure 2-3. Onshore and Beach Site Map
2.5.1.1 Fuel Oil Submarine Pipeline

This section of the fuel oil submarine pipeline is approximately 110 feet long and weighs approximately 13.4 tons (dry weight). The entire pipeline would be removed from inside the beach valve pit, the underpass conduit, and the underpass end structure. This section of the pipeline would be extracted from the underpass conduit and end structure through the beach valve pit and into the EPS facility (see Figure A2-3 in Appendix A). The recovered pipeline would be disposed or recycled off-site.

Prior to removal, this section of pipeline would be flushed with seawater or purged with air or nitrogen to free any water inside the pipeline. To remove this segment, pipeline would be cut into sections using flame (oxy-acetylene) or saw cutting methods. If the flame cutting method is used, the somastic and cement weight coating on the pipeline would need to be removed at each cut point, and because the somastic coating contains small amounts of asbestos, an asbestos safety plan and asbestos trained crews would be required to remove, contain, and dispose of the somastic waste (see Appendix D, page 3). Once the pipeline is cut, a winch and rigging would be used to drag the pipeline sections one at a time from the underpass to the beach valve pit. A crane stationed alongside the beach valve pit would be used to raise the pipeline sections out of the beach valve pit and place them on trucks for off-site disposal and recycling.

2.5.1.2 Fill Line

The fill line would be filled with a Class G oilfield cement slurry plug\(^5\) and remain buried within the EPS facility to be decommissioned at a future date. Only the fill line termination point located inside the beach valve pit is within the scope of this Project. The blind flange inside the beach valve pit would be removed and a soft pig would be inserted in the fill line. The blind flange would then be fitted with a cement port and reinstalled. A cement hose would be attached to the port and cement slurry would be pumped into the fill line, pressing the soft pig in front of it. Approximately 20 feet of cement slurry would be placed in the fill line (1.5 cubic yards of slurry); however, the cement slurry may be installed the entire length of the fill line (a distance of approximately 380 feet) to the second valve pit within the EPS facility (28 cubic yards of slurry) (see Figure A2-4 in Appendix A). Once the cement slurry plug solidifies in the fill line, the flanged end and pipe stub would be cut (via flame or saw cutting) and removed (less than 300 pounds of recyclable steel), and a permanent steel plate cap would be welded on the cut end of the fill line. The flanged end and pipe stub would be placed on trucks for off-site disposal and recycling.

\(^5\) A Class G cement is intended for use as a basic cement from surface to 8,000 feet depth.
2.5.1.3 Beach Valve Pit

The beach valve pit houses the onshore termination of the fuel oil submarine pipeline and consists of a rectangular vault and a buried rectangular horizontal shaft. Soil samples would be taken from underneath the floor of the beach valve pit. If contaminated soil exceeding allowable limits is found, the floor of the beach valve pit would be demolished and the underlying contaminated soil would be remediated to comply with regulatory requirements. Should the soil samples reveal no contamination or levels less than allowable limits, the bottom portion (5 feet below grade and deeper) of the beach valve pit would be left intact, and the top portion (surface to 5 feet below grade) would be demolished and broken down to 5 feet below existing contours or to the top of the horizontal shaft, whichever is greater. The concrete walls would be broken down with concrete breakers mounted on excavators (or equivalent), creating approximately 8.7 cubic yards of concrete and reinforcing bar debris that would be recovered and shipped off-site for recycling or disposal. The beach valve pit would then be backfilled and compacted with approximately 87 cubic yards of native soil from off-site sources (see Figure A1-3 and Figure A2-5 in Appendix A). Native soil and sand backfill from off-site sources will have similar grain size characteristics and color to the surrounding soil and sand at the Project site, and will be derived from approved and permitted sources in accordance with the Surface Mining and Reclamation Act.

2.5.1.4 Underpass Conduit

The underpass conduit (and rectangular horizontal shafts of the beach valve pit and underpass end structure) would be filled with Class G oilfield cement slurry and abandoned in place. These components are buried under existing sidewalks and Carlsbad Boulevard.

Inside the underpass conduit, the fuel oil submarine pipeline rests on a 12-inch-deep bed of sand (15 cubic yards). A portion of this sand was checked and found to contain hydrocarbon contamination, but the bulk of this sand has not been surveyed for hydrocarbons. As such, samples would be taken to determine the level of hydrocarbon contamination. The sand would be removed and disposed or recycled off-site depending on the presence and quantity of contamination.

After the fuel oil submarine pipeline, vertical vault, and all sand bedding, electrical components, piping, and appurtenances have been removed, a cement slurry plug would be installed in the underpass conduit. To install the cement slurry plug, a temporary framework (wood or metal forms) would be constructed at each end of the underpass conduit. One form would be placed at the horizontal shaft opening on the west wall of the beach valve pit. The second form would be placed where the vertical vault of the underpass end structure was cut and removed from the horizontal shaft (see Section 2.5.2.5, Underpass End Structure). Cement slurry installation ports would be
installed in the forms, and tremie pipes may be required to distribute the slurry the full
length of the underpass conduit. Vent pipes would also be installed, as appropriate, to
ensure that the cement slurry completely fills the underpass conduit from floor to ceiling.
The total cement slurry volume is estimated at approximately 198 cubic yards. Detailed
engineered plans and specifications for the forms and cementing process would be
provided with the CWP. Once the cement plug has been installed and set, the
temporary forms would be removed (see Figure A1-4 and Figure A2-6 in Appendix A).

2.5.1.5 Underpass End Structure

Prior to demolition, the vent pipe, manhole, metal ladder, and any other appurtenances
located inside the vertical vault and horizontal shaft of the underpass end structure
would be removed. The vertical vault would then be excavated, demolished, and
removed in its entirety, separating it from the end structure horizontal shaft. In addition,
the gravel bed underneath the vertical vault (approximately 7.1 cubic yards) would be
removed, and the soil underneath the gravel bed would be tested for contaminants. If
the soil exceeds regulatory allowable limits, it would be excavated, transported off-site,
and properly disposed. The horizontal shaft, wing walls, and concrete footing of the
underpass end structure would be abandoned in place.

Because the vertical vault is completely buried underneath the beach, approximately
452 cubic yards of sand and possibly riprap would be excavated to expose the vertical
vault for cutting and demolition (assuming an excavation that is 18 feet deep with a 36-
foot radius and walls at a 2:1 slope) (see Figure A2-7 and Figure A2-8 in Appendix A).
The beach sand would be stockpiled on the beach and used for backfill after the vertical
vault is removed. As-built drawings indicate the possible presence of riprap (as much as
45 tons) below the beach at the underpass end structure; if riprap is found, it would be
stored onsite and used as backfill after the vertical vault is removed. Once excavated,
the vertical vault would be cut and separated from the horizontal shaft using abrasive
saws, concrete saws, diamond wire cutting, or other concrete cutting methods that
produce a reasonably smooth cut suitable to seal off the horizontal shaft with cement.
Once broken up, the vertical vault would be trucked off-site for recycling or disposal.

The horizontal shaft, wing walls, and concrete footing of the underpass end structure
would be abandoned in place. These structures are located below the existing westerly
sidewalk and southbound lane within the Carlsbad Boulevard right-of-way. If these
components were removed, both southbound lanes of Carlsbad Boulevard may need to
be temporarily shut down to facilitate excavation; therefore, limiting the removal of these
structures would ensure that the current roadway sub-grade and sub-base remain
undisturbed. However, removal of the vertical vault may require demolition and
replacement of the western sidewalk where it crosses the underpass end structure (see
Figure A1-5 in Appendix A).
The beach at the underpass end structure would be restored to pre-project contours by backfilling the excavation with native sand (approximately 452 cubic yards); however, the actual amount of sand required to backfill the excavation would depend on the amount of riprap, if any, found below the existing sand beach. Assuming approximately 45 tons of riprap is found and removed, approximately 127 cubic yards of sand would be required for backfill (see Figure A2-9 in Appendix A).

2.5.1.6 Electrical Components, Piping, and Appurtenances

All electrical components, piping, and appurtenances would be removed from inside the beach valve pit, the underpass conduit, and the underpass end structure. This would include removal of all above ground electrical components, the existing awning structure and slab that surrounds the top edge of the beach valve pit, the concrete block wall, and all handrails. Crews certified in the removal and containment of hazardous materials would abate all contaminants including lead, asbestos, and hydrocarbons that exceed regulatory allowable limits and transport them off-site for disposal. The volume of debris generated during this phase of demolition is estimated to weigh less than 1 ton.

2.5.2 Beach Decommissioning Activities

The beach segment begins at the west side of the underpass end structure and extends approximately 220 feet into the intertidal zone near the mean low water line. Facilities located within the beach segment include a section of the fuel submarine pipeline and the riprap groin. Decommissioning work for the beach segment would be performed by land-based crews and equipment, but limited to extreme low tide conditions when working in the intertidal zone. Work within the beach segment would be accomplished as described below.

2.5.2.1 Riprap Groin

In order to excavate and remove the fuel oil submarine pipeline, the riprap groin would need to be permanently or temporarily removed. To determine potential near-field effects of removing the riprap groin (also referred to as the South Beach Groin), Jenkins (2013) conducted a shoreline evolution analysis (see Appendix L) to predict shoreline evolution over 20-year-long historic periods of waves, tides, currents, and dredge disposal. The study showed that, although removal would have no apparent short-term effect on shoreline change, long-term (10 to 20 years) cumulative impacts, generally erosional in nature, to the shoreline would occur. Therefore, to retain the width of the existing shoreline, the riprap groin would be restored to pre-Project contours following the removal of the fuel oil submarine pipeline. The largest erosional impacts would occur at South Beach, where beach widths would be locally reduced by as much as 17 feet, 20 years after the groin is removed. Removal of the South Beach Groin would also reduce the median retention time of dredged sands placed on South Beach by 1 month.
Since dredging and beach disposal of the dredged sands typically occurs every 2 years, an average loss of 1 month of retention time adds up to a significant loss of beach sand volume over many years for the North Beach/Middle Beach/South Beach back-passing, sand re-cycling system. Therefore, to retain the width of the existing shoreline, the riprap groin would be temporarily removed to excavate the fuel oil submarine pipeline and restored to pre-Project contours following the pipeline removal process.

The riprap groin may extend under the beach to the west face of the underpass end structure and, if so, would require the excavation of overlying sand to reach and temporarily remove the groin to access the pipeline. To dismantle the groin, a bulldozer and front-end loader would push existing sand from the beach onto the groin to provide a temporary pad for a crawler crane to reach the seaward end of the groin. The crawler crane would be equipped with rock tongs or similar tools to remove the riprap, working from the seaward edge of the groin and moving shoreward. Because the groin may extend underneath the beach to the under-pass end structure, a bulldozer and front-end loader would excavate the sand to expose the groin. The maximum excavation depth is estimated at 10 feet, and the walls of all sand excavations would be cut back to a 2:1 slope for safety purposes. Temporary shoring may also be used to hold the sand excavation open to facilitate removal of this section of the pipeline. A front-end loader or equivalent equipment would be used to transport the riprap to a pre-designated storage area on the beach until the pipeline is removed. Once the underlying pipeline is removed, the groin would be restored to pre-project contours starting from the west end of the underpass structure and working seaward. Because the original riprap would be reused to restore the groin, no off-site rock disposal or additional rock and sand backfill is anticipated (see Figure A2-10 in Appendix A).

2.5.2.2 Fuel Oil Submarine Pipeline

This segment of the fuel oil submarine pipeline is approximately 220 feet long and weighs approximately 26.7 tons (dry weight). Prior to removal, the pipeline segment would be flushed with seawater to free any wastewater from inside this pipeline. The pipeline would be removed in its entirety across the beach. As the pipeline is excavated and exposed it would be cut into sections to facilitate removal. Cutting would be performed using flame (oxy-acetylene torches) or saw cutting methods. If the flame cutting method is used, the somastic and cement weight coating on the pipeline would need to be removed at each cut point, and because the somastic coating contains small amounts of asbestos, an asbestos safety plan and asbestos trained crews would be required to remove, contain, and dispose of the somastic waste. Once the pipeline is cut, a crane stationed alongside the pipeline would be used to raise the pipe sections onto a truck for off-site disposal and recycling. After the pipeline is removed, all required excavation would be backfilled with native sand and the riprap groin would be restored to pre-project conditions (see Figure A2-11 in Appendix A).
2.5.3 Surf Zone Decommissioning Activities

The surf zone segment begins at the approximate mean low water line and extends approximately 750 feet offshore to the -15 foot bathymetric contour. Facilities located within the surf zone segment include the fuel oil submarine pipeline and riprap groin. Excavation and removal of the pipeline in the surf zone would involve both land- and offshore-based crews and equipment. Land-based work would be limited to extreme low tide conditions when working in the surf zone, and offshore-based work would be limited by the shallowest depth (-15 foot bathymetric contour) at which a barge or other floating support equipment can safely operate near the surf zone. The riprap groin would be temporarily removed to accommodate removal of the pipeline and later restored as described above in Section 2.5.2.1, Riprap Groin. Fuel oil submarine pipeline decommissioning work in the surf zone segment would be accomplished as described below.

2.5.3.1 Fuel Oil Submarine Pipeline

This section of the fuel oil submarine pipeline is 750 feet in length and weighs approximately 91.1 tons (total dry weight), and would be removed in its entirety if feasible. In the surf zone, the pipeline is covered by an existing riprap groin, which would be temporarily removed and stored on the beach during the pipeline removal process. The depth of the pipeline underneath the groin is unknown; however, it is thought to be fairly shallow. There are two reasons for this assumption: (1) the pipeline was pulled offshore from the beach and never excavated and buried; and (2) groin protection over a pipeline is typically only required when a pipeline becomes exposed on the beach and seafloor. Additionally, past seafloor surveys revealed exposed portions of the offshore fuel oil submarine pipeline, which could mean that the pipeline may only have a shallow cover over it in the surf zone. If this is the case, it may be feasible to remove the entire surf zone section using conventional or low-impact methods (Option 1). Should the as-found disposition of the pipeline foil efforts for removal using the methods in Option 1, dynamic pipe ramming (DPR) technology would be employed in an attempt to vibrate and extract the pipeline from under the seafloor (Option 2). If Option 1 or Option 2 is successful, this section of the pipeline would be pulled offshore and raised to the surface, cut into truckable sections to be transported by barge to shore, and trucked to off-site disposal or recycling facilities. If both options fail to extract the surf zone section, the remaining portion of pipeline would be abandoned in place and the ends of the pipeline would be opened to fill with sand. After work in the surf zone is complete, the groin would be restored to pre-project contours. The removal methods for Option 1 and Option 2 are described in Table 2-1.

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6 Although DPR has not been previously used to remove pipelines in the surf zone, it has been successfully used to remove longer sections of pipeline stuck in horizontal directional drilling bores. Most recently, DPR was used to extract buried subsea pipelines in the Gulf of Mexico and Midwest.
Table 2-1. Surf Zone Fuel Oil Submarine Pipeline Removal Options

| Option 1 – Surf Zone Removal Using Conventional Crews and Equipment | Land-based crews and equipment would work from onshore into the surf zone, as far as low tide and surf conditions permit, to remove as much of the pipeline in the surf zone as possible. Marine-based crews and equipment would then work from offshore into the surf zone, as far as tides and surf conditions permit, to extract the remaining pipeline in the surf zone. At each cut-point on the pipeline, a bell hole would be dug underneath the pipeline and the somastic and cement weight coatings would be removed. If above water, the pipeline would be cut with oxy-acetylene; if underwater, it would be cut with an oxy-arc or a guillotine saw. Compared to an oxy-arc, a guillotine saw may eliminate the need to remove the somastic and cement weight coating and minimize the bell hole excavation. Both the oxy-arc and guillotine saw are handheld or hand-applied, and neither produces appreciable noise nor substantial waste or byproduct. During the removal process, floatation may be used in combination with the above methods to lighten the pipeline and pull the remaining section out of the surf zone. Once removed, the pipeline would be lightened with floatation or filled with air, then lifted onto the barge deck to be cut into sections for off-site recycling or disposal. |
| Option 2 – Surf Zone Removal by DPR | DPR may be ideally suited to remove this section of the pipeline because the pipeline is relatively short (750 feet), may be exposed on the seafloor or only moderately buried, and is of known composition, construction, and integrity. To remove this segment using DPR, a pneumatic ram (hammer), attached to the offshore end of the pipeline, would vibrate the pipeline out of the surf zone while the tension winch, stationed on the offshore support barge, would drag the recovered pipeline offshore (see Figure A2-12 in Appendix A). Pull forces necessary to extract the pipeline out of the surf zone would be calculated and analyzed by a California licensed professional engineer and provided in the CWP. A six-point anchor system would be required for the barge, with four of the six points acting as reaction anchors to keep the barge in place while the tension winch drags the pipeline out of the surf zone. Once removed, the pipeline would be lightened with floatation or filled with air and then lifted onto the deck of the barge to be cut for off-site recycling and disposal. |

2.5.4 Offshore Decommissioning Activities

The offshore segment begins at the backside of the surf zone (at approximately the -15 foot bathymetric contour) and terminates approximately 2,525 feet offshore in approximately 60 feet of water. This segment includes the fuel oil submarine pipeline and all of the remaining mooring and navigation components and seafloor debris associated with the tanker berth. Work within the offshore segment would be performed by offshore crews and equipment and accomplished as described below.

2.5.4.1 Fuel Oil Submarine Pipeline End Anchors

The two fuel oil submarine pipeline end anchors and their chains would be removed in their entirety from the seafloor. The anchors weigh 14,000 pounds each and are connected to the pipeline via a steel collar fastened to the pipeline end and attached with two 90-foot lengths of 2-inch stud link anchor chains. To remove the end anchors
from the pipeline, offshore crews and equipment would either cut the collar bolts and
remove the collar, or cut the 2-inch stud link anchor chain near the steel anchor collar.
The two end anchors would be raised to the surface using the 2-inch stud link anchor
chains, lifted to the deck of the derrick barge using the deck winch, and hauled onboard
for off-site recycling and disposal. No excavation would be necessary.

2.5.4.2 Fuel Oil Submarine Pipeline

The offshore segment of the fuel oil submarine pipeline is approximately 2,775 feet long
and weighs approximately 337.2 tons (dry weight). If the offshore section of the pipeline
is buried, underwater excavation would be required. Once the pipeline is freed from the
end anchors, the pipeline would be raised to the deck of the derrick barge and cut into
sections (Option 1), or the pipeline would be cut on the seafloor by divers and recovered
(Option 2). The latter option is less desirable as it requires extensive diver intervention
with inherent safety risks, while the former, and preferred, option requires substantially
less diver intervention and can be performed on the deck of the barge. In either case,
the offshore segment would be cut into truckable sections and transported by barge to
shore to be offloaded and trucked to off-site disposal or recycling facilities. The removal
methods in Option 1 and Option 2 are shown in Table 2-2.

| Option 1 – Reverse Pipe Lay Method | The reverse pipe lay method would keep the pipeline intact (with minimal loss of external coatings) while it is pulled aboard the barge and cut into sections, would avoid underwater cutting, and could be performed fairly rapidly assuming that the depth of cover over the pipeline is minimal or non-existent. Engineered plans and calculations for this method would be provided by a California licensed engineer and included with the CWP. Under this method, the end of the pipeline would be raised to the surface (possibly with the aid of flotation buoys and/or applied tension) and winched aboard the derrick barge through a stinger (projecting from the end of the barge) that transitions the pipeline out of the water and onto the deck. As the pipeline is brought aboard the derrick barge, the pulling operation would be periodically halted, and a sling or other rigging brake would be applied to the pipeline section near the gunwale of the barge. Tension would be applied to the active leg of the pipeline (floating/submerged section) by the barge’s reaction anchors and rigging brake to remove a band of somastic and cement weight coating. The pipeline would then be cut and hoisted onto a materials barge for transportation to shore to be offloaded and trucked to off-site disposal or recycling facilities. This process would be repeated until the offshore section of the pipeline is completely removed (see Figure A2-13 in Appendix A). Divers operating from the derrick barge or from a second support barge or vessel would work ahead of the recovery operation to expose the pipeline if buried. An airlift or other excavation device would be used to uncover the pipeline. To assist with lightening the pipeline during this removal process, the pipeline may need to be voided of water. If this is necessary, the open end of the pipeline would remain on the deck of the barge or would be sealed before being placed back in the ocean so it doesn’t refill with water. Voiding would require that the |

Table 2-2. Offshore Fuel Oil Submarine Pipeline Removal Options
Table 2-2. Offshore Fuel Oil Submarine Pipeline Removal Options

| Option 2 – Seafloor-Based Removal | Seafloor-based removal may be used to remove the pipeline or possibly used in tandem with the reverse pipe lay method, depending on if sections of the pipeline are exposed on the seafloor. Engineered plans and calculations for this removal method would be provided by a California licensed engineer and included with the CWP. Under this method, the pipeline would be excavated in short sections, probably 150 feet or less, which would depend on the limits of the diver’s dive umbilical, the operating radius of the crane boom with the excavation tool, and the size of the derrick barge and crane. The first pipeline section would be uncovered, with the support of a crane, using a large airlift (12-inch-diameter or larger steel or steel and plastic pipe) or a Toyo submersible pump-type dredging system. Bell holes would be excavated at predetermined intervals (cut points) along the excavated section of the pipeline to provide divers with circumferential access to cut and remove bands of somastic and cement weight coating at each cut point. An oxy-arc or guillotine saw would be used to cut the bands of coating. Both methods are handheld or hand-applied, and neither produces appreciable noise nor substantial waste or byproduct. Once, or as, the bands of coating are removed, divers would cut the pipeline into sections using the preferred cutting method. Slings would be applied to each section and hoisted to the surface by the derrick barge crane and placed on the materials barge or support boat for transportation to shore to be offloaded and trucked to off-site disposal or recycling facilities. This process would be repeated one section at a time, probably starting with the offshore end and working shoreward, until the offshore section of the pipeline is completely removed (see Figure A2-14 in Appendix A). |

1 2.5.4.3 Mooring and Buoy System Components

2 All remaining components of the tanker berth’s seven-point mooring system, single-point mooring, fuel oil submarine pipeline marker buoy, and navigation buoy would be removed in their entirety, transported off-site, and recycled at appropriate facilities. A derrick barge or deck barge with a four-point mooring system, crane, and pull winch would likely be used to recover the mooring system components. A dive team would work from the barge deck, and a tugboat would remain onsite to tend the barge and set and recover its anchors. All anchorages would be set in accordance with the anchor coordinates established on the anchor pre-plot that would be part of the approved CWP.

10 If the remains of a mooring leg are buried under the seafloor, additional effort would be required to locate and possibly expose and remove these components. In this case, the use of mooring buoy or anchor coordinates from previous surveys would be helpful to position a diver with a handheld magnetometer at the chain or anchor’s approximate location to locate the ferrous metal below the seafloor.
Once a buried target is identified as a mooring system component, its recovery would depend on the type of component and its disposition. If the target is a buried anchor chain, then additional excavation may be required to locate and expose the bitter end of the chain. Once the end of the anchor chain is located, divers would attach a pull wire to the chain and deck crews would pull it to the surface with a pull winch located on the deck of the derrick barge. Alternatively, if a chain is located (and not the bitter end), divers would be employed to cut the chain with oxy-arc underwater cutting equipment. Once a cut to the chain is made, one of the cut ends would be attached to a buoy while the other would be attached to a pull winch, located on the deck of the support vessel, to extract the first chain segment from the seafloor. This chain segment would either lead to the bitter end of the chain or to an anchor. If it leads to an anchor, the anchor would be recovered. Once this first chain segment is recovered, the support vessel would return to the buoyed end of the other chain segment, recover the end to the surface, and extract the chain segment from the seafloor. Excavation, if required, would be performed via hand jetting (using divers with portable high-pressure jetting equipment) or the likely preferred method of airlifting (suspending a 12-inch-diameter steel airlift operated by the support vessel crane under the direction of a diver) (see Figure A2-15 and Figure A2-16 in Appendix A).

2.5.4.4 Seafloor Debris

All seafloor debris associated with the tanker berth and decommissioning operations would be removed. Potential debris targets would be identified in the pre- and post-decommissioning seafloor debris surveys and inspected by divers to determine their identity. All debris items associated with the tanker berth operations, and any introduced during Project operations, would be recovered and transported off-site for recycling or disposal. The quantity of seafloor debris, if any, is unknown at this time.

2.6 PRELIMINARY DECOMMISSIONING SCHEDULE

Decommissioning is scheduled to occur in 2016 and 2017, with an estimated 2018 completion date. The following is a summary of the tentative Project milestones:

- Receive All Regulatory Agency Permits: June 2016
- CWP Submitted: July 2016
- MCP Submitted: July 2016
- CWP Approved: August 2016
- Offshore Segment Decommissioning Starts: September 2016
- Onshore Segment Decommissioning Starts: September 2016
- Beach Segment Decommissioning Starts: September 2017
- Surf Zone Segment Decommissioning Starts: September 2017
- Complete Decommissioning Work: January 2018
- Complete Post-Decommissioning Reporting: February 2018
A preliminary decommissioning schedule is provided as Table A1-1 in Appendix A. The schedule is based on a 5-day, 12-hour/day work week; however, additional hours, including 24-hour operations, may be required to complete these activities and to maintain the Project schedule (e.g., to work with the tide schedule). Additional time was not built into the schedule to account for possible inclement weather, unworkable tide conditions, or additional work that may be created due other unforeseen conditions.

If the reverse pipe lay method is used to recover the fuel oil submarine pipeline in the offshore segment, the pipeline may need to be voided of water. Voiding would need to occur before removal of the surf zone, beach, and preferably onshore segments are removed so the displaced water can be captured in the EPS facility and disposed off-site. In this case, offshore decommissioning work must be completed before work in the other segments can occur. The onshore and offshore segments are currently scheduled to be decommissioned in fall/winter 2016, which may accommodate this scenario. Once the water is removed from the fuel oil submarine pipeline, the onshore work may be started, and the beach and surf zone segments would be removed in fall/winter 2017.

2.7 SHORE BASE

The decommissioning contractor, once selected, shall establish a shore base to support offshore operations and serve as a local embarkation point for offshore crews and equipment. Oceanside Harbor, the most likely local embarkation point, is approximately 6 miles from the offshore worksite and has historically been the point of embarkation for offshore crews working at the EPS MOT tanker berth. Alternative shore base locations are the Port of Los Angeles, Port of Long Beach, or San Diego Bay.

2.8 MANPOWER AND EQUIPMENT ESTIMATES

Table A2-1 in Appendix A provides personnel and equipment estimates, which are based on the anticipated duration of projected tasks and are subject to change.

2.9 PROJECT WORK AREAS

The onshore and beach segments include staging areas for the placement of materials and equipment, temporary storage of riprap and sand, temporary truck parking during loading operations, and equipment movement. These Project work areas, as well as ingress and egress routes, are shown in Figure A2-17 in Appendix A. The offshore Project safety and survey boundary in which Project vessels would operate during decommissioning activities is identified in Figure A1-1 in Appendix A.

2.10 MATERIAL IMPORT/EXPORT AND ASSOCIATED TRUCK TRIPS

Table A1-2 in Appendix A summarizes the projected areas, volumes, and weights of the recovered debris and decommissioned MOT components set for recycling or disposal.
This section contains the Initial Study (IS) that was completed for the proposed Cabrillo Power I LLC (Cabrillo Power I LLC or Applicant) Encina Marine Oil Terminal Decommissioning Project (Project) in accordance with the requirements of California Environmental Quality Act (CEQA). The IS identifies site-specific conditions and impacts, evaluates their potential significance, and discusses ways to avoid or lessen impacts that are potentially significant. The information, analysis and conclusions included in the IS provide the basis for determining the appropriate document needed to comply with CEQA. For the Project, based on the analysis and information contained herein, California State Lands Commission (CSLC) staff have found that the IS shows that there is substantial evidence that the Project may have a significant effect on the environment but revisions to the Project would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur. As a result, the CSLC has concluded that a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the Project.

The evaluation of environmental impacts provided in this IS is based in part on the impact questions contained in Appendix G of the State CEQA Guidelines; these questions, which are included in an impact assessment matrix for each environmental category (Aesthetics, Agriculture/Forest Resources, Air Quality, Biological Resources, etc.), are “intended to encourage thoughtful assessment of impacts.” Each question is followed by a check-marked box with column headings that are defined below.

- **Potentially Significant Impact.** This column is checked if there is substantial evidence that a Project-related environmental effect may be significant. If there are one or more “Potentially Significant Impacts,” a Project Environmental Impact Report (EIR) would be prepared.

- **Less than Significant with Mitigation.** This column is checked when the Project may result in a significant environmental impact, but the incorporation of identified Project revisions or mitigation measures would reduce the identified effect(s) to a less than significant level.

- **Less than Significant Impact.** This column is checked when the Project would not result in any significant effects. The Project’s impact is less than significant even without the incorporation of Project-specific mitigation measures.

- **No Impact.** This column is checked when the Project would not result in any impact in the category or the category does not apply.

The environmental factors checked below would be potentially affected by this Project; a checked box indicates that at least one impact would be a “Potentially Significant Impact” except that the Applicant has agreed to Project revisions, including the
implementation of mitigation measures (MMs), that reduce the impact to “Less than Significant with Mitigation.”

Table 3-1. Environmental Issues and Potentially Significant Impacts

| ☒ Aesthetics          | ☐ Agriculture and Forest Resources | ☐ Air Quality                  |
| ☒ Biological Resources| ☒ Cultural Resources               | ☐ Geology and Soils            |
| ☐ Greenhouse Gas Emissions | ☒ Hazards and Hazardous Materials | ☒ Hydrology and Water Quality |
| ☐ Land Use and Planning | ☐ Mineral Resources                | ☒ Noise                       |
| ☐ Population and Housing | ☐ Public Services                | ☐ Recreation                  |
| ☒ Transportation/Traffic | ☐ Utilities and Service Systems   |                             |
| ☒ Mandatory Findings of Significance |                      |                             |
| ☐ Other Major Areas of Concern: Commercial Fishing and Environmental Justice | | |

Detailed descriptions and analyses of impacts from Project activities and the basis for their significance determinations are provided for each environmental factor on the following pages, beginning with Section 3.1, Aesthetics. Relevant laws, regulations, and policies potentially applicable to the Project are listed in the Regulatory Setting for each environmental factor analyzed in this IS.

AGENCY DETERMINATION

Based on the environmental impact analysis provided by this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

______________________________
Signature

______________________________
Date

Kelly Keen, Environmental Scientist
Division of Environmental Planning and Management
California State Lands Commission
1 3.1 AESTHETICS

<table>
<thead>
<tr>
<th>AESTHETICS – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Have a substantial adverse effect on a scenic vista?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>c) Substantially degrade the existing visual character or quality of the site and its surroundings?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

2 3.1.1 Environmental Setting

The Encina Marine Oil Terminal (MOT) is fronted by Carlsbad State Beach and Carlsbad Boulevard. Carlsbad State Beach is a popular area for surfing, swimming, skin diving, fishing, picnicking, and other recreational activities. Beach and ocean resource use is greatest within the Project vicinity in summer and during weekends; however, the beach area, associated undesignated bluff trails, and designated bike lane, which is located (striped) on the ocean side of Carlsbad Boulevard, are well utilized by walkers, joggers, and/or bicyclists year-round.

Carlsbad Boulevard is a popular beach access route and is identified as a Scenic Route in the Agua Hedionda Land Use Plan (City of Carlsbad 2010b) and a Community Theme Corridor in the City of Carlsbad (2013b) General Plan Circulation Element. The Interstate-5 (I-5) transportation corridor, located to the east of the Encina Power Station (EPS), is an Eligible State Scenic Highway and is considered a Community Scenic Corridor by the City of Carlsbad.

The Encina MOT fuel oil submarine pipeline extends from the onshore EPS facility to its offshore termination and is covered on Carlsbad State Beach with riprap that extends into the surf zone (see foreground of Figure 3.1-1 A and Figure 3.1-1 B). South of the riprap groin, a wall extends along the beach (in front of the EPS) to a bluff south of the site. Approximately 300 feet north of the riprap groin are two sets of riprap rock jetties (intake and outfall channels) associated with Agua Hedionda Lagoon. The pipeline crosses Carlsbad Boulevard below ground and is accessed via a beach valve pit located within the EPS. Views of the beach valve pit from Carlsbad Boulevard are partially blocked by perimeter fencing at the EPS (see Figure 3.1-2).
A. Existing View from Onshore Fuel Oil Submarine Pipeline Corridor Looking South

B. Existing View Looking North at Onshore Fuel Oil Submarine Pipeline Corridor

Figure 3.1-1. Beach Views Looking South and North
A. Existing View from Beach at Carlsbad Boulevard Looking East

B. Existing View from Carlsbad Boulevard Looking Northeast

Figure 3.1-2. Views from Carlsbad Boulevard Looking East
3.1.2 Regulatory Setting

3.1.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.1-1.

<table>
<thead>
<tr>
<th>U.S.</th>
<th>CZMA (see Table 1.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>California Scenic Highway Program</td>
</tr>
<tr>
<td>CA</td>
<td>Coastal Act Chapter 3 policies (see also Table 1-2)</td>
</tr>
</tbody>
</table>

3.1.2.2 Local

The City of Carlsbad (2006) General Plan Open Space and Conservation Element (OSCE) contains the following aesthetics-related goal, objective, and policy relevant to onshore Project activities.

- Goal A.4: A city that preserves as open space, hillsides, ridges, valleys, canyons, lagoons, beaches and other unique resources that provide visual and physical relief to the Cityscape.
- Objective B.7: To minimize impacts from new development on hillsides, ridges, valleys, canyons, lagoons, beaches and other unique resources that provide visual and physical relief to the cityscape.
- Policy C.1: Utilize sensitive design criteria to preserve the unique and special resources in the City and to integrate them into the design of any development.

The General Plan Parks and Recreation Element (City of Carlsbad 2003) includes the following special resource, open space, and cultural historical areas goal relevant to onshore Project activities:

- Goal A.3: A City that preserves areas of scenic, historic, and cultural value.
3.1.3 Impact Analysis

a) Have a substantial adverse effect on a scenic vista?

Less than Significant with Mitigation. The presence of onshore and offshore vessels and equipment at the Project site would result in short-term aesthetic impacts to views of the beach and ocean. Project operations would be visible to people: (1) on Carlsbad Boulevard, other local streets, and possibly I-5 and the railroad corridor; (2) recreating on the beach; (3) engaging in ocean activities (e.g., recreational boating); and (4) at ocean-view homes in the area. Views of offshore vessels, which would be needed for decommissioning activities, are not entirely incongruent with typical ocean views, and the site was historically used for fuel transfers, with large vessels mooring at the MOT and vessels and equipment located offshore during periodic maintenance of the MOT.

Offshore and surf zone work would include two barges, two tug boats, and two crew boats. Work in the surf zone would also require the use of onshore equipment, including two excavators, one bulldozer, one front-end loader, one crawler crane, and smaller miscellaneous equipment. Similar equipment would also be used for work in the beach and onshore segments. All equipment would be visible to the public during decommissioning. Offshore equipment would be on-site for about 7 months (3 months for the surf zone segment and 4 months for the offshore segment). Equipment operating on the beach, which would be used for portions of the onshore, beach, and surf zone segments, would be in service over a period of about 5 months, although not continuously. Onshore equipment operations east of Carlsbad Boulevard are expected to occur over 3 months; however, not all of the equipment would be in operation during this period and, unlike the beach and ocean, the area east of Carlsbad Boulevard is not considered a scenic vista (see Table A1-1 in Appendix A).

In order to minimize the number of viewers affected by the Project, the present decommissioning schedule avoids work during the summer (Memorial Day through Labor Day). Additionally, a 5-day work week was identified in the Project Description to avoid work on weekends when more people would be expected to use the beach.

To ensure that Project activities avoid the peak beach and ocean use periods, the Applicant shall implement MM AES-1 to minimize the Project’s aesthetic impact in the area to less than significant.

MM AES-1: Project Scheduling. Onshore Project decommissioning shall be conducted outside of the peak public beach/ocean-use periods (summer [May 31 to September 5] and weekends) in order to minimize the number of viewers affected by the Project to the extent feasible. Exceptions allowing weekend work may occur in certain limited cases such as when work requires an extreme low tide that only occurs on a weekend.
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. I-5, located east of the EPS, is an eligible, State scenic highway; however, it has not been officially designated as such. As a result, the Project would not substantially damage scenic resources, including trees, rock outcroppings, and historic buildings, within a State scenic highway; therefore, there would be no impact.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant with Mitigation. As discussed in a) above, the Project would temporarily introduce construction materials, equipment, vessels and activities to the Project area. This would be considered a short-term degradation of the visual character of the beach and ocean area subject to Project activities. MM AES-1 would serve to mitigate this impact. Additionally, the subsurface fuel oil submarine pipeline and other facilities would be decommissioned in a manner that would not degrade the existing visual character of the site or surroundings. Therefore, with the implementation of MM AES-1, the potential impacts of the Project on the existing visual character or quality of the site and its surroundings would be reduced to less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant with Mitigation. No long-term sources of light, glare, or nighttime lighting would be introduced by the Project; however, 24-hour operations may occur to maintain the Project schedule, which would require the use of diesel-driven light plants. As a result, nighttime operations may cause temporary adverse lighting impacts to nearby residents. To reduce potential impacts caused by Project lighting, the Applicant shall implement MM AES-2 to minimize substantial light and glare and ensure potential impacts to day or nighttime views in the area are less than significant.

MM AES-2: Night-Lighting Spillage Minimization. Night-lighting required for Project decommissioning activities shall be shielded and directed to the immediate work area to avoid light spillage onto private property.

3.1.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to aesthetics to less than significant.

- MM AES-1: Project Scheduling.
3.2 AGRICULTURE AND FOREST RESOURCES

<table>
<thead>
<tr>
<th>AGRICULTURE AND FOREST RESOURCES</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d) Result in the loss of forest land or conversion of forest land to non-forest use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

2 3.2.1 Environmental Setting

The onshore portion of the Project site is located within the EPS, which began operation in the City of Carlsbad in 1954. The area currently includes residential and industrial uses. No agricultural or forest resources are present in the Project area.

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7 In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.
3.2.2 Regulatory Setting

3.2.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.2-1.

Table 3.2-1. Laws, Regulations, and Policies (Agriculture/Forest Resources)

<table>
<thead>
<tr>
<th>CA</th>
<th>Williamson Act (Gov. Code, §§ 51200-51207)</th>
<th>This Act enables local governments to enter into contracts with private landowners to restrict specific parcels of land to agricultural or related open space use, and provides landowners with lower property tax assessments in return. Local government planning departments are responsible for the enrollment of land into Williamson Act contracts. Generally, any commercial agricultural use would be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Coastal Act Chapter 3 policies (see also Table 1-2)</td>
<td>Coastal Act policies applicable to this issue area are: • Section 30241 (Prime agricultural land; maintenance in agricultural production); • Section 30241.5 (Agricultural land; determination of viability of uses; economic feasibility evaluation); • Section 30242 (Lands suitable for agricultural use; conversion); and • Section 30243 (Productivity of soils and timberlands; conversions).</td>
</tr>
</tbody>
</table>

3.2.2.2 Local

There are no local goals, policies, and/or regulations applicable to this issue area for the Project due to its location and the nature of the activity.

3.2.3 Impact Analysis

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?

No Impact. There are no current or planned agricultural uses at the Project site. Therefore, the Project would have no impact on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. There are no agricultural resources present at the Project site. Therefore, the Project would not conflict with existing zoning for agriculture or occur on lands operated under a Williamson Act contract with any local governments for the purpose of restricting specific parcels of land to agricultural or related open space use.
c) **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?**

No Impact. There are no forest lands or timberlands located in the vicinity of the Project site. Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

d) **Result in the loss of forest land or conversion of forest land to non-forest use?**

No Impact. There are no forest lands or timberlands located in the vicinity of the Project site. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use.

e) **Involve other changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land into non-forest use?**

No Impact. There is no farmland or forest land located in the vicinity of the Project site. Therefore, the Project would not alter the existing environment such that farmland or forest land would be converted to non-agricultural or non-forest uses.

### 3.2.4 Mitigation Summary

The Project would not result in significant impacts to agriculture and forest resources; therefore, no mitigation is required.
3.3 AIR QUALITY

<table>
<thead>
<tr>
<th>AIR QUALITY</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>d) Expose sensitive receptors to substantial pollutant concentrations?</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>e) Create objectionable odors affecting a substantial number of people?</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

3.3.1 Environmental Setting

3.3.1.1 Local Climate and Meteorological Conditions

The Project is located within the San Diego Air Basin. San Diego County can be described as having a climate that is controlled by a semi-permanent subtropical high-pressure system that is located off the Pacific Ocean. In the summer, this strong high-pressure system results in clear skies, high temperatures, and low humidity. Very little precipitation occurs during the summer months because storms are blocked by the high-pressure system. Beginning in the fall and continuing through the winter, the high-pressure weakens and moves south, allowing storm systems to move through the area. Temperature, winds, and rainfall are more variable during these months, and stagnant conditions occur more frequently than during summer months. Weather patterns include periods of stormy weather with rain and gusty winds, clear weather that can occur after a storm, or persistent marine layer conditions, with or without ground fog. Carlsbad usually receives approximately 10.4 inches of rain per year, with February typically the wettest month. Onshore winds mostly predominate during both the spring and summer. The winds during the fall and winter have a more predominate offshore component.
3.3.1.2 Criteria Pollutants

Criteria air pollutants are those contaminants for which State and Federal ambient air quality standards have been established for the protection of public health and welfare. Criteria pollutants include: ozone \((O_3)\) carbon monoxide \((CO)\), oxides of nitrogen \((NO_x)\), sulfur dioxide \((SO_2)\), and particulate matter.

- **Ozone** \((O_3)\) is formed in the atmosphere through a series of complex photochemical reactions involving \(NO_x\), reactive organic gases \((ROGs)\) (also known as reactive organic compounds \([ROCs]\)), and sunlight occurring over several hours. Since \(O_3\) is not emitted directly into the atmosphere, but is formed as a result of photochemical reactions, it is classified as a secondary or regional pollutant. Because these \(O_3\)-forming reactions take time, peak \(O_3\) levels are often found downwind of major source areas. \(O_3\) is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to \(O_3\).

- **Carbon Monoxide** \((CO)\) is primarily formed through the incomplete combustion of organic fuels. Higher \(CO\) values are generally measured during winter when dispersion is limited by morning surface inversions. Seasonal and diurnal variations in meteorological conditions lead to lower values in summer and in the afternoon. \(CO\) is an odorless, colorless gas that affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body’s organs and tissues. \(CO\) can cause health effects to those with cardiovascular disease and affect mental alertness and vision.

- **Nitric oxide** \((NO)\) is a colorless gas formed during combustion processes which rapidly oxidizes to form nitrogen dioxide \((NO_2)\), a brownish gas. The highest \(NO_2\) values are generally measured in urbanized areas with heavy traffic. Exposure to \(NO_2\) may increase the potential for respiratory infections in children and cause difficulty in breathing even among healthy persons and especially among asthmatics.

- **Sulfur Dioxide** \((SO_2)\) is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels, such as coal and oil, and by other industrial processes. Generally, the highest concentrations of \(SO_2\) are found near large industrial sources. \(SO_2\) is a respiratory irritant that can cause narrowing of the airways, leading to wheezing and shortness of breath. Long-term exposure to \(SO_2\) can cause respiratory illness and aggravate existing cardiovascular disease.

- **Particulate Matter**. Ambient air quality standards have been set for two classes of particulate matter: \(PM_{10}\) (coarse particulate matter less than 10 microns in aerodynamic diameter) and \(PM_{2.5}\) (fine particulate matter 2.5 microns or less in aerodynamic diameter). Both consist of different types of particles suspended in
the air, such as metal, soot, smoke, dust, and fine mineral particles. The primary source of PM\textsubscript{10} emissions appears to be soil via roads, construction, agriculture, and natural windblown dust. Other sources of PM\textsubscript{10} include sea salt, particulate matter released during combustion processes (such as those in gasoline or diesel vehicles), and wood burning. Fugitive emissions from construction sites, wood stoves, fireplaces, and diesel truck exhaust are primary sources of PM\textsubscript{2.5}. Depending on the source of particulates, toxicity and chemical activity can vary. Particulate matter is a health concern because when inhaled it can permanently damage the lungs; although both sizes of particulates can be dangerous, PM\textsubscript{2.5} tends to be more damaging because it remains in the lungs once inhaled.

### 3.3.1.3 Local Air Quality

The Project site is located within the jurisdiction of the San Diego County Air Pollution Control District (SDCAPCD) and within the San Diego Air Basin. The San Diego Air Basin is designated as nonattainment for both the Federal and State ozone standards and the State PM\textsubscript{10} and PM\textsubscript{2.5} standards. The closest air quality monitoring station and most representative of the Project site is the Camp Pendleton station, located 6.5 miles north-northwest of the Project site. The most recent ambient air quality data from the Project area indicate that State and Federal 8-hour O\textsubscript{3} standards are occasionally exceeded in the area (Table 3.3-1).

#### Table 3.3-1. Summary of Ambient Air Quality Data

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>O\textsubscript{3} (parts per million [ppm])</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest 1-Hour concentration (ppm)</td>
<td>0.085</td>
<td>0.092</td>
<td>0.078</td>
</tr>
<tr>
<td>Highest 8-Hour concentration (ppm)</td>
<td>0.071</td>
<td>0.081</td>
<td>0.066</td>
</tr>
<tr>
<td>Number of State Exceedances (8-hour&gt;0.070 ppm)</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of Federal Exceedances (8-hour&gt;0.075 ppm)</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>PM\textsubscript{2.5}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest Sample (micrograms/cubic meter [µg/m\textsuperscript{3}])</td>
<td>30.7</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Number of Federal Exceedances (Samples&gt;35)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * means there were insufficient data available to determine the value. Source: California Air Resources Board (CARB) 2014.

### 3.3.2 Regulatory Setting

#### 3.3.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.3-2.

#### Table 3.3-2. Laws, Regulations, and Policies (Air Quality)

| U.S. Federal Clean Air Act (FCAA) (42 USC 7401 et) | The FCAA requires the U.S. Environmental Protection Agency (USEPA) to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. National standards are established for ozone (O\textsubscript{3}), carbon monoxide (CO), nitrogen dioxide (NO\textsubscript{2}), sulfur dioxide (SO\textsubscript{2}), particulate matter |
### Table 3.3-2. Laws, Regulations, and Policies (Air Quality)

<table>
<thead>
<tr>
<th>seq.</th>
<th>Description</th>
</tr>
</thead>
</table>
| (PM\textsubscript{10} and PM\textsubscript{2.5}), and lead (Pb). In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO\textsubscript{2}) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate Greenhouse Gas (GHG) emissions. Pursuant to the 1990 FCAA Amendments, USEPA classifies air basins (or portions thereof) as in “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the NAAQS are achieved. The classification is determined by comparing monitoring data with State and Federal standards.  
- An area is classified as in “attainment” for a pollutant if the pollutant concentration is lower than the standard.  
- An area is classified as in “nonattainment” for a pollutant if the pollutant concentration exceeds the standard.  
- An area is designated “unclassified” for a pollutant if there are not enough data available for comparisons.  

The FCAA was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The FCAA mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the FCAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the FCAA that would most substantially affect the development of the Project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. The NAAQS were amended in July 1997 to include an 8-hour standard for O\textsubscript{3} and adopt a NAAQS for fine particulate matter (PM\textsubscript{2.5}).  

**California Clean Air Act of 1988 (CCAA) (Assembly Bill [AB] 2595)**  
The CCAA requires all air districts in the State to endeavor to achieve and maintain State ambient air quality standards for O\textsubscript{3}, CO, SO\textsubscript{2}, NO\textsubscript{2}, and PM; attainment plans for areas that did not demonstrate attainment of State standards until after 1997 must specify emission reduction strategies and meet milestones to implement emission controls and achieve more healthful air quality. The 1992 CCAA Amendments divide O\textsubscript{3} nonattainment areas into four categories of pollutant levels (moderate, serious, severe, and extreme) to which progressively more stringent requirements apply. State ambient air standards are generally stricter than national standards for the same pollutants; California also has standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.  

**Coastal Act Chapter 3 policies (see also Table 1-2)**  
Section 30253, subdivision (c) requires that new development shall be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.  

**Other**  
- Under California’s Diesel Fuel Regulations, the sulfur limit in diesel fuel is limited to 15 parts per million (ppm).  
- The California Air Resources Board’s (CARB’s) Heavy Duty Diesel Truck Idling Rule (Cal. Code Regs., tit. 13, § 2485) prohibits heavy-duty diesel trucks from idling for longer than 5 minutes at a time (except while queuing, provided the queue is located beyond 100 feet from any homes or schools).  
- The Statewide Portable Equipment Registration Program (PERP) regulates portable engines/engine-driven equipment units. Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts.
3.3.2.2 Local

The SDCAPCD is the local agency primarily responsible for attaining the air quality standards established by the California Air Resources Board (CARB) and U.S. Environmental Protection Agency (USEPA). The SDCAPCD implements programs and regulations to control air pollution released from stationary sources within the district, as well as implementing programs to encourage alternative means of transportation. SDCAPCD Rule 10 requires new stationary sources of air pollution to obtain an authority to construct and permit to operate, which allows the SDCAPCD to verify compliance of the new source with emissions limits and other requirements of the SDCAPCD’s Rules and Regulations.

The SDCAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to progress towards attainment of State O\textsubscript{3} standards. Currently, the San Diego Air Basin is in “non-attainment” status for Federal O\textsubscript{3} and the State PM\textsubscript{10} and PM\textsubscript{2.5}; however, an attainment plan is only available for O\textsubscript{3}. The RAQS was adopted in 1992 and was updated as recently as 2009, which was the latest update incorporating minor changes to the prior 2004 update. The 2009 update mostly clarifies and enhances emission reductions by implementing new ROC and NO\textsubscript{x} reduction measures. The criteria pollutant standards are generally attained when each air quality monitor within the region has had no exceedances during the previous 3 calendar years.

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS, and projects that create more growth than projected by SANDAG may create a significant impact assuming the project produces unmitigated emission generation in excess of the regional standards.

The City of Carlsbad (2006) General Plan OSCE identified “a city with clean air” as the air quality goal and the following policy relevant to onshore Project activities.

- Policy C.6: The City shall monitor all construction to ensure that proper steps are taken by developers to reduce short-term construction related impacts to air resources. During cleaning, grading, earth moving, or excavation developers shall:
  - Control fugitive dust by regular watering, paving construction roads, or other dust preventive measures;
  - Maintain equipment engines in proper tune;
  - Seed and water until vegetation cover is grown;
  - Spread soil binders;
  - Wet the area down, sufficient enough to form a crust on the surface with repeated soakings, as necessary, to maintain the crust and prevent dust pick-up by the wind;
  - Street sweeping, should silt be carried over to adjacent public thoroughfares;
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Use water trucks or sprinkler systems to keep all areas where vehicles move damp enough to prevent dust raised when leaving the site;

Wet down areas in the late morning and after work is completed for the day;

Use low sulfur fuel (0.5 percent by weight) for construction equipment.

3.3.3 Impact Analysis

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The RAQS outlines the SDAPCD’s plans and control measures to attain State air quality standards for O₃. The SDAPCD also relies on the State Implementation Plan, which includes the SDAPCD’s plans and control measures for attaining the National Ambient Air Quality Standard for O₃. The RAQS relies on information from the CARB and SANDAG, including projected future growth in source emissions projections in the County to determine strategies and regulatory controls to reduce stationary source emissions. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS (County of San Diego Land Use and Environment Group 2007). The Project is limited to short-term MOT decommissioning activities and would not alter local or regional population projections. Thus, the Project is consistent with the RAQS and would not conflict with or obstruct implementation of applicable air quality plans.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact. Sources of air pollution associated with the Project include onshore heavy equipment, transfer dump trucks, cement trucks, marine vessels, and associated onboard equipment. Under SDCAPCD Rule 11, mobile sources are exempt from Rule 10 permit requirements; however, portable onshore construction equipment such as generators, compressors and power winches would be subject to the Statewide Portable Equipment Registration Program.

The Project site is located in the City of Carlsbad, which has not adopted quantitative thresholds for determining the significance of construction or mobile source-related air quality impacts; however, the County of San Diego has adopted screening level thresholds for use with CEQA, taken from SDCAPCD Rule 20.2. Although Rule 20.2 pertains to non-major stationary sources, emission levels triggering an Air Quality Impact Analysis (AQIA) may be used as an indication of the potential to cause a violation of ambient air quality standards. Emission levels that trigger an AQIA are listed in Table 3.3-3 and may be used for comparative purposes as air quality thresholds of significance for the purposes of this assessment.
Table 3.3-3. SDCAPCD AQIA Trigger Levels

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Pounds/Hour</th>
<th>Pounds/Day</th>
<th>Tons/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{10}$</td>
<td>10</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>Oxides of Nitrogen (NO$_x$)</td>
<td>25</td>
<td>250</td>
<td>40</td>
</tr>
<tr>
<td>Oxides of Sulfur (SO$_x$)</td>
<td>25</td>
<td>250</td>
<td>40</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>100</td>
<td>550</td>
<td>100</td>
</tr>
<tr>
<td>Volatile Organic Compounds (VOC)</td>
<td>-</td>
<td>75</td>
<td>13.7</td>
</tr>
<tr>
<td>Lead and Lead Compounds</td>
<td>-</td>
<td>3.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM$_{10}$)</td>
<td>-</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM$_{2.5}$)</td>
<td>-</td>
<td>55</td>
<td>10</td>
</tr>
</tbody>
</table>

$^1$ SO$_x$ are compounds of sulfur and oxygen molecules. Sulfur dioxide (SO$_2$) is the predominant form found in the lower atmosphere.

Offshore vessels and equipment would generate the majority of Project-associated air emissions. These emissions were quantified using harbor craft emission factors presented in The Port of Long Beach (POLB) 2005 Air Emission Inventory (POLB 2007). Emissions generated by heavy equipment to be used onshore (excavators, bulldozer, loader, crane, and smaller equipment) were quantified using emission factors derived from the URBEMIS 2007 model and load factors from the OFFROAD model. On-road sources used to truck out excavated materials, truck infill sand and cement, and for worker commute trips were quantified using the Emfac2007 model.

Estimated emissions of criteria pollutants are presented in Table 3.3-4. As detailed in Section 2, Project Description, there are two proposed methodologies (Options 1 and 2) to complete decommissioning activities in both the surf zone and offshore segments. Although in-field success would determine which method is more effective and thus used, the options with the highest emissions are presented in the emissions calculations. Proposed equipment listed for each decommissioning segment in Table A2-1 in Appendix A was used to estimate emissions as detailed in Appendix H, which breaks down each segment into specific phases/tasks. Decommissioning of the onshore and offshore segments would occur simultaneously, and their daily emissions were combined as peak pounds per day, as shown in Table 3.3-4. This approach was also taken for the beach and surf zone segments since these segments would also be decommissioned simultaneously.

To estimate emissions of criteria pollutants for comparison to the AQIA triggers, each phase’s/task’s emissions were calculated as peak pounds per day and combined with the simultaneously occurring phase/task per Table A1-1 in Appendix A. No attempt was made to separate Option 1 from Option 2 for either segment. Estimated daily emissions for the beach and surf zone segments (combined) are expected to be less than the onshore and offshore segments (combined).

$^8$ Lead emissions are not presented in the emissions tables as lead-containing fuels would not be used.
Table 3.3-4. Air Emissions Summary

<table>
<thead>
<tr>
<th>ESTIMATED CRITERIA POLLUTANTS (PEAK POUNDS/DAY)</th>
<th>NOx</th>
<th>ROG/VOC</th>
<th>PM_{10}</th>
<th>CO</th>
<th>SO_{2}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onshore Decommissioning</td>
<td>61.88</td>
<td>6.39</td>
<td>2.39</td>
<td>35.01</td>
<td>0.11</td>
</tr>
<tr>
<td>Offshore Decommissioning</td>
<td>152.72</td>
<td>10.76</td>
<td>6.38</td>
<td>79.60</td>
<td>1.64</td>
</tr>
<tr>
<td><strong>Maximum</strong> (pounds/day)</td>
<td><strong>214.6</strong></td>
<td><strong>17.15</strong></td>
<td><strong>8.77</strong></td>
<td><strong>114.61</strong></td>
<td><strong>1.75</strong></td>
</tr>
<tr>
<td>Offshore Decommissioning</td>
<td>27.05</td>
<td>2.79</td>
<td>0.91</td>
<td>17.34</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>Maximum</strong> (pounds/day)</td>
<td><strong>171.49</strong></td>
<td><strong>15.46</strong></td>
<td><strong>6.65</strong></td>
<td><strong>93.96</strong></td>
<td><strong>1.08</strong></td>
</tr>
</tbody>
</table>

| AQIA Trigger/Screening Threshold (pounds/day) | 250   | 75      | 100     | 550   | 250    |
| Exceeds Threshold | No | No | No | No | No |

<table>
<thead>
<tr>
<th>ESTIMATED CRITERIA POLLUTANTS (TOTAL TONS)</th>
<th>NOx</th>
<th>ROG/VOC</th>
<th>PM_{10}</th>
<th>CO</th>
<th>SO_{2}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre- and Post-Surveys</td>
<td>0.06</td>
<td>0.00</td>
<td>0.00</td>
<td>0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>Onshore Decommissioning</td>
<td>1.13</td>
<td>0.14</td>
<td>0.05</td>
<td>0.86</td>
<td>0.00</td>
</tr>
<tr>
<td>Offshore Decommissioning</td>
<td>8.25</td>
<td>0.58</td>
<td>0.34</td>
<td>4.28</td>
<td>0.09</td>
</tr>
<tr>
<td>Beach Decommissioning</td>
<td>0.78</td>
<td>0.08</td>
<td>0.03</td>
<td>0.53</td>
<td>0.00</td>
</tr>
<tr>
<td>Surf Zone Decommissioning</td>
<td>2.46</td>
<td>0.19</td>
<td>0.10</td>
<td>1.27</td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Total Project Air Emissions (tons)</strong></td>
<td><strong>12.68</strong></td>
<td><strong>0.99</strong></td>
<td><strong>0.52</strong></td>
<td><strong>6.99</strong></td>
<td><strong>0.32</strong></td>
</tr>
<tr>
<td><strong>Maximum</strong> (tons/year) ^2</td>
<td>9.44</td>
<td>0.72</td>
<td>0.39</td>
<td>5.19</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>AQIA Trigger/Screening Threshold</strong> (tons/year)</td>
<td>40</td>
<td>13.7</td>
<td>15</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes: PM_{2.5} emissions are not calculated due to the lack of emission factors for construction equipment; however, if one conservatively assumes estimated PM_{10} emissions represent PM_{2.5} emissions, Project emissions would be below the PM_{2.5} thresholds.

^1 Threshold is not exceeded for either 2016 or 2017 construction years.

^2 Maximum (peak) tons/year are expected from September 2016 through August 2017 (includes pre- and post-surveys, onshore decommissioning, and offshore decommissioning).

Table 3.3-4 also provides estimates of the total tons of criteria pollutants per segment (per Table A2-1 in Appendix A). A maximum tons per year of air emissions is anticipated for the period September 2016 through August 2017 based upon the sequence of phases/tasks as shown in Table A1-1 in Appendix A, which include pre- and post-surveys and onshore and offshore decommissioning.

As provided in Table 3.3-4, Project emission totals calculated as peak pounds per day do not exceed AQIA triggers used as indicators or thresholds of significance, while emission totals calculated as peak tons per year are also below the annual AQIA trigger (Project emission totals are cumulative, not annual, and include emissions for the Project duration). Therefore, the Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and this impact would be less than significant. However, to further reduce Project air emissions and
ensure that they remain below the threshold, Applicant Proposed Measures (APMs) would be implemented as feasible.

**APM AIR-1: Air Emissions Compliance Program.** The Project will incorporate an Air Emissions Compliance Program to ensure that Project emissions are in conformance with the approved Project. This Program will provide detailed information regarding the internal combustion engines used, the duration of use, the fuel consumed, and the calculated emissions.

**APM AIR-2: Low-Emission Engines – Offshore.** Use marine vessels and offshore equipment with low emissions engines, certified to meet Federal Tier III requirements, if available.

**APM AIR-3: Low-Emission Engines – Onshore.** Use heavy equipment onshore with the best available low emissions engines (Tier III or IV), if available.

**APM AIR-4: Mobilize from Nearest Port.** Mobilize marine vessels and equipment from the nearest port supporting these vessels.

**APM AIR-5: Dispose Materials at Nearest Port.** Dispose of recovered anchors and associated materials at the nearest port accepting these materials.

**APM AIR-6: Low-Sulfur Fuel.** All Project diesel-powered equipment used during the Project shall use diesel fuel with a sulfur content of 15 parts per million (ppm) or less.

c) **Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Less than Significant Impact. The Project would result in a less than significant net increase in criteria pollutant emissions for which the San Diego Air Basin is considered non-attainment. Further, the Project’s incremental contribution of emissions would not be cumulatively considerable as it would not hinder progress towards attainment of State and Federal ambient air quality standards. The Project is temporary, is not located near areas of poor air quality (based on ambient air quality monitoring), and is located near the beach/ocean which would allow for adequate dispersion of pollutants and prevent accumulation of emissions. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard, and this impact would be less than significant.
**d) Expose sensitive receptors to substantial pollutant concentrations?**

**Less than Significant Impact.** With regard to air pollutant impacts, sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The closest sensitive receptors to the Project site are the residences located about 1,400 feet south of the fuel oil submarine pipeline landfall (i.e., where the pipeline crosses the mean high tide line) or 1,000 feet from the closest work area. The closest school to the Project site is Jefferson Elementary School, located 0.95 mile north of the Project site. Sensitive receptors are not anticipated to be exposed to substantial pollutant concentrations due to the Project site’s distance away from sensitive receptors, generally dispersed nature of the Project’s pollution sources, and adequate dispersion of pollutants by sea breezes. Therefore, the Project is unlikely to expose sensitive receptors to substantial pollutant concentrations, and this impact would be less than significant.

**e) Create objectionable odors affecting a substantial number of people?**

**Less than Significant Impact.** SDCAPCD Rule 51 and the California Health and Safety Code prohibit emissions that would result in a nuisance to a considerable number of persons. The exhaust of diesel-powered vessels and equipment to be used by the Project may be considered an objectionable odor by some portion of the local population; however, due to the location of the Project and distance from residential areas, these odors would be highly dispersed prior to reaching local residences and therefore would not be considered a nuisance. Therefore, it is unlikely that the Project would create objectionable odors affecting a substantial number of people, and this impact would be less than significant.

### 3.3.4 Mitigation Summary

The Project would not result in significant impacts to air quality; therefore, no mitigation is required. The following APMs would be implemented to further reduce impacts.

- APM AIR-1: Air Emissions Compliance Program.
- APM AIR-3: Low-Emission Engines – Onshore.
- APM AIR-4: Mobilize from Nearest Port.
- APM AIR-5: Dispose Materials at Nearest Port.
- APM AIR-6: Low-Sulfur Fuel.
3.4 BIOLOGICAL RESOURCES

<table>
<thead>
<tr>
<th>BIOLOGICAL RESOURCES – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

3.4.1 Environmental Setting

3.4.1.1 Terrestrial Environment and Biology

Historically, the onshore portion of the Project area supported coastal salt marsh, but was converted to residential and industrial uses, including electric generation at the EPS which began operation in the City of Carlsbad in 1954. The following discussion of biological resources at the EPS is taken from the Final Staff Assessment for the Carlsbad Energy Center Project (CECP), which included a biological resources survey of the entire 95-acre EPS in 2003 and a 2007 reconnaissance-level survey of the CECP.
The CECP site is highly disturbed and/or developed due to ongoing operations within the existing Encina Power Station. The majority of the CECP footprint is composed of bare ground or a combination of bare ground and gravel with scattered ruderal vegetation. Plant species observed include iceplant (Carpobrotus edulis), tocalote (Centaurea melitensis), horseweed (Conyza sp.), black mustard (Brassica nigra), fountain grass (Pennisetum setaceum), wild oat (Avena fatua), foxtail chess (Bromus madritensis ssp. rubens), tree tobacco (Nicotiana glauca), western marsh-rosemary (Limonium californicum), salt heliotrope (Heliotropium curassavicum), buckwheat (Eriogonum sp.), and cudweed (Gnaphalium sp.). Eucalyptus (Eucalyptus sp.) plantings occur along the northern and eastern perimeter of the CECP site and serve as visual screens of the Encina Power Station. These plantings are mature eucalyptus trees greater than 45 feet in height and of sufficient canopy cover to potentially support nesting raptors.

Due to the frequency and intensity of disturbance from operation of the Encina Power Station, the proposed CECP site does not provide habitat capable of supporting a diverse assemblage of wildlife. Direct wildlife observations in the project area include common species such as California ground squirrel (Spermophilus beecheyi) and a variety of bird species typically found in disturbed and developed areas such as house finch (Carpodacus mexicanus), northern mockingbird (Mimus polyglottus), mourning dove (Zenaida macroura), rock dove (Columba livia), European starling (Sturnus vulgaris), house sparrow (Passer domesticus), and American crow (Corvus branchyrhynchos). Additional common bird species observed within the proposed CECP site include Anna’s hummingbird (Calypte anna), black phoebe (Sayornis nigricans), common yellowthroat (Geothlypis trichas), and California towhee (Pipilo crissalis).

Vegetation

The fuel oil submarine pipeline corridor does not support terrestrial vegetation; however, vegetation is present on Carlsbad State Beach between the surf zone and Carlsbad Boulevard south of the pipeline corridor. Vegetation present in this area includes native shrub species; these species are isolated from the beach by a concrete retaining wall.

Sensitive Habitats

The Agua Hedionda Lagoon (outer lagoon) is located approximately 300 feet north of the fuel oil submarine pipeline corridor and is the source of cooling water for the EPS. The lagoon has been dredged periodically to ensure adequate flow to the cooling water inlet since 1954. The Lagoon supports special-status species such as the southwestern...
pond turtle (*Actinemys marmorata*), white-faced ibis (*Plegadis chihi*), and western snowy plover (*Charadrius alexandrinus nivosus*) and provides foraging habitat for American peregrine falcon (*Falco peregrinus anatum*) and osprey (*Pandion haliaetus*). The estuarine and marsh habitat surrounding the lagoon provides suitable nesting habitat for special-status species such as the California least tern (*Sternula antillarum browni*), elegant tern (*Sternula elegans*), Belding’s savannah sparrow (*Passerulus sandwichensis beldingi*), California brown pelican (*Pelecanus occidentalis*), and coastal California gnatcatcher (*Polioptila californica californica*).

The EPS (including onshore portions of the MOT) is located within the boundary of the City of Carlsbad’s (2004) Habitat Management Plan (HMP), which guides local implementation for the North County Multiple Habitat Conservation Program (MHCP) (SANDAG 2003). The MHCP focuses on habitat preservation and enhancement for the coastal California gnatcatcher, and designated Agua Hedionda Lagoon and adjacent areas to the east as core habitat area. Critical habitat for the coastal California gnatcatcher was finalized on December 19, 2007, but excluded habitat areas immediately east of Agua Hedionda Lagoon as they are protected under the MHCP.

### Special Status Species

Based on reviews of the California Natural Diversity Database, City of Carlsbad’s HMP, and other environmental documents prepared for projects in the area, several special status species have the potential to occur in the vicinity of the EPS (Table 3.4-1).

<table>
<thead>
<tr>
<th>Species</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>California adolphia (<em>Adolphia californica</em>)</td>
<td>CNPS List 2</td>
</tr>
<tr>
<td>Coast woolly-head (<em>Nemacaulis denudata var. denudata</em>)</td>
<td>CNPS List 1B</td>
</tr>
<tr>
<td>Cliff spurge (<em>Euphorbia misera</em>)</td>
<td>CNPS List 2</td>
</tr>
<tr>
<td>Orcutt’s pincushion (<em>Chaenactis glabriuscula ssp. orcuttiana</em>)</td>
<td>CNPS List 1B</td>
</tr>
<tr>
<td>South Coast saltscale (<em>Atriplex pacifica</em>)</td>
<td>CNPS List 1B</td>
</tr>
<tr>
<td>Wart-stemmed ceanothus (<em>Ceanothus verrucosus</em>)</td>
<td>CNPS List 2</td>
</tr>
<tr>
<td>Saltmarsh skipper butterfly (<em>Panoquina errans</em>)</td>
<td>Special Animal</td>
</tr>
<tr>
<td>San Diego fairy shrimp (<em>Branchinecta sandiegonensis</em>)</td>
<td>FE</td>
</tr>
<tr>
<td>Tidewater goby (<em>Eucyclogobius newberryi</em>)</td>
<td>FE; CSC</td>
</tr>
<tr>
<td>Southwestern pond turtle (<em>Actinemys marmorata</em>)</td>
<td>CSC</td>
</tr>
<tr>
<td>American peregrine falcon (<em>Falco peregrinus anatum</em>)</td>
<td>FP</td>
</tr>
<tr>
<td>Belding’s savannah sparrow (<em>Passerulus sandwichensis beldingi</em>)</td>
<td>SE</td>
</tr>
<tr>
<td>California brown pelican (<em>Pelecanus occidentalis californicus</em>)</td>
<td>FP</td>
</tr>
<tr>
<td>California least tern (<em>Sternula antillarum browni</em>)</td>
<td>FE; SE; FP</td>
</tr>
<tr>
<td>Coastal California gnatcatcher (<em>Polioptila californica</em>)</td>
<td>FT; CSC</td>
</tr>
<tr>
<td>Cooper’s hawk (<em>Accipiter cooperi</em>)</td>
<td>WL</td>
</tr>
<tr>
<td>Elegant tern (<em>Sternula elegans</em>)</td>
<td>WL</td>
</tr>
<tr>
<td>Light-footed clapper rail (<em>Rallus longirostris levipes</em>)</td>
<td>FE; SE; FP</td>
</tr>
</tbody>
</table>

**Table 3.4-1. Special Status Species that May Occur in EPS Vicinity**
Table 3.4-1. Special Status Species that May Occur in EPS Vicinity

<table>
<thead>
<tr>
<th>Species</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osprey (Pandion haliaetus)</td>
<td>WL</td>
</tr>
<tr>
<td>Western snowy plover (Charadrius alexandrinus nivosus)</td>
<td>FT; CSC</td>
</tr>
<tr>
<td>White-faced ibis (Plegadis chihi)</td>
<td>WL</td>
</tr>
<tr>
<td>Pocketed free-tailed bat (Nyctinomops femorosaccus)</td>
<td>CSC</td>
</tr>
</tbody>
</table>

Acronyms: CNPS = California Native Plant Society; CSC = California Species of Special Concern; FE = Federally Endangered; FP = Fully Protected; SE = State Endangered; WL = Watch List.

Most of the special-status species listed above have been reported in MHCP core habitat areas, including Core #4 which includes Agua Hedionda Lagoon. The EPS, including the onshore fuel oil submarine pipeline corridor, does not provide suitable habitat for these species; however, a 1959 California Natural Diversity Database entry reports that coast woolly-heads (Nemacaulis denudata var. denudate) were found on the sandy beach near the EPS. It is unknown if this species has been found there recently. In addition, the 2007 Western Snowy Plover Recovery Plan indicates that snowy plovers bred along the shore of Agua Hedionda Lagoon prior to 2000, but have not been found breeding at Carlsbad State Beach since. It is possible that the western snowy plover may forage along Carlsbad State Beach during the non-breeding season (September to February).

3.4.1.2 Marine Environment and Biology

The offshore area adjacent to the EPS is located within the larger biogeographic zone known as the Southern California Bight (SCB), which encompasses approximately 22,000 square miles with boundaries that span from Point Conception, California, in the north to Cabo Colnett, Baja California, in the south. The SCB has a high upwelling index, (upward flowing current) between April and August, but geostrophic or wind-driven flows may occur year round (City of Carlsbad 2005).

Descriptions of intertidal and subtidal habitats and biota provided below were derived mainly from existing literature dated prior to 2005, and supplemented and updated by information collected during a Project-specific biological resources survey performed by Merkel & Associates (2013a). A copy of the Merkel & Associates survey report is provided in Appendix I.

Intertidal Habitats and Biota

The beach habitat in the Project vicinity consists mainly of wave-swept sandy shores. Sand cover on the beaches and in the nearshore varies seasonally. In the winter, intertidal sand is transported offshore and the underlying cobble is exposed. Additionally, riprap is present on the sand beach within the Project area, and covers the intertidal portion of the fuel oil submarine pipeline.
Species common to the sandy beach include: air-breathing pill bugs (*Alloniscus perconvexus*), an isopod (*Tylos punctatus*), the amphipod beach hopper (*Orchestoidea californiana*), the mole crab (*Emerita analoga*), the opossum (*mysid*) shrimp (*Archaeomysis maculata*), the polychaete worm (*Euzonus mucronata*), the bean clam (*Donax gouldi*), and the Pismo clam (*Tivela stultorum*) (City of Carlsbad 2005).

The California grunion (*Leuresthes tenuis*) is also a species common to the Project area, with a range that extends from Point Conception, California, to Point Abreojos, Baja California. Although this species inhabits nearshore waters (from the surf to a depth of 60 feet), they leave the water at night to spawn on beaches during the spring and summer months. For four consecutive nights, beginning on the nights of the full and new moons, spawning occurs after high tides and continues for several hours. Spawning occurs from March through August and occasionally in February and September, with peak spawning occurring from late March to early June. In 1927, regulations were instituted that mandated a closed season for 3 months, from April through June. In 1947, species abundance had improved and the closure was shortened to April through May. This closure is still in effect to protect grunion during their peak spawning period (CDFW 2014).

Except for the manmade riprap, the closest rocky intertidal habitat is located about 3,250 feet down coast (south) of the EPS discharge channel (the area between the southern set of double jetties across from the Aqua Hedionda Lagoon), which is located approximately 2,950 feet south of the riprap covering the fuel oil submarine pipeline. Although a list of biota associated with that rocky intertidal habitat was not found, studies on the north and south riprap jetties at the mouth of Agua Hedionda Lagoon found species typical of southern California rocky intertidal habitats. Surf grass (*Phyllospadix spp.*) was also observed on the north jetty riprap and on rock reefs offshore of the EPS in water depths of 20 feet or less (Le Page and Ware 2001).

**Subtidal Habitats and Biota**

The sedimentary habitat continues offshore along the fuel oil submarine pipeline corridor, however, rocky subtidal substrate to the north and south support kelp and other macroalgae (City of Carlsbad 2005). Species listed by EA Engineering, Science, and Technology (1997, cited in City of Carlsbad 2005) as associated with the subtidal sand habitat within the vicinity of the EPS include: a polychaete (*Prionospio pygmaeus*), a proboscis worm (*Carinoma mutabilis*), a sea spider (*pycnogonid*) (*Callipallene californiensis*), two crustaceans (*Megaluropus sp.* and *Leptocuma forsmani*), and the sand dollar (*Dendraster excentricus*). Le Page and Ware (2001) completed a series of spot dives offshore of the EPS and report a sedimentary (sand) bottom with the tube-building worm *Diopatra sp.* present in approximately 18 feet of water at the two locations closest to the existing fuel oil submarine pipeline.
The City of Carlsbad (2005) reports that fish associated with the sedimentary habitat within the vicinity of the Project area include the speckled sanddab (*Citharichthys stigmaeus*), northern anchovy (*Engraulis mordax*), queenfish (*Seriphus politus*), sand bass (*Paralabrax nebulifer*), white croaker (*Genyonemus lineatus*), horneyhead turbot (*Pleuronichthys verticalis*), and California halibut (*Paralichthys californicus*). No eelgrass was reported within the subtidal sedimentary habitat.

Several sources of information document the location of rocky substrate and kelp in the immediate Project area. Those sources include the City of Carlsbad Final EIR Precise Development Plan and Desalination Project (City of Carlsbad 2005); the San Diego and Orange County Region Nine Kelp Survey Consortium (reporting kelp conditions in 2011) (MBC Applied Environmental Sciences 2012); the Encina Power Station Marine Biological Resources Survey (reporting hard bottom and kelp conditions) (Merkel & Associates 2013a); and the Cabrillo Power I LLC Encina Power Station Bathymetry and Geophysical Survey (Fugro Pelagos, Inc. [Fugro] 2013) (documenting hard bottom and kelp coverage). The findings from each source are discussed below.

As described in the City of Carlsbad Final EIR Precise Development Plan and Desalination Project (City of Carlsbad 2005), the offshore and northward extension of the intertidal rocky substrate south of the fuel oil submarine pipeline supports a relatively large kelp bed; a smaller and seasonal kelp bed associated with the other rock habitat within the Project area is located approximately 3,600 feet to the north of the riprap covering the pipeline.

The San Diego and Orange County Region Nine Kelp Survey Consortium states that kelp bed size and health varies considerably from year to year depending on a variety of environmental factors including available light, sedimentation, nutrient pulses, grazing by herbivores, storms, and the El Niño Southern Oscillation. The kelp canopy coverage immediately offshore of the EPS, as measured between the years 1967 and 2011, varied from 0 to just under 0.4 square kilometers, with the greatest coverage observed in 2008. The average bed area per year for this kelp bed mirrored the other beds in the San Diego region from 1967 through 2011, either generally reacting favorably or negatively with large stimuli such as the La Niña and El Niño Southern Oscillations. Figure 3.4-1 shows kelp coverage in the Project area as of December 2011 as reported in the Status of the Kelp Beds 2011 for the San Diego and Orange County Region Nine Kelp Survey Consortium (MBC Applied Environmental Sciences 2012).

In their biological resources survey report (Appendix I), Merkel & Associates (2013a) also identified the location of hard bottom and kelp in the Project area (Figure 3.4-2). Their findings match those of Fugro’s bathymetric and geophysical survey map (April 2013) with the exception that some areas at the southern limits of Fugro’s survey map are identified as kelp whereas Merkel & Associates identified these areas as bedrock.
Figure 3.4-1. Project Area Kelp Coverage (2011)
Figure 3.4-2. Marine Habitats in the Vicinity of the EPS
The bathymetry and surficial features (kelp and hard bottom) as mapped by Fugro is used as the base for the Project Site Map (Figure A1-1 in Appendix A).

Macrophytic brown algal taxa recorded within the rocky seafloor habitats offshore of the EPS and within the kelp bed north of the Project site include the southern sea palm (*Eisenia arborea*), feather boa kelp (*Egregia laevigata*), oar weed (*Laminaria farlowii*), and bladder chain kelp (*Cystoseira osmundacea*). Understory "turf algae," including *Dictyota flabellata* and *Rhodymenia californica*, have also been recorded within these kelp beds (City of Carlsbad 2005; Le Page and Ware 2001).

Kelp bed-associated epifauna (attached organisms) reported within the Project region include invertebrates; the dominant species is the tube-building polychaete (*Diopatra ornata*), but other species present include sea fans (*Muricea californica* and *M. fructicosa*), a sea anemone (*Anthopleura elegantissima*), a tunicate (*Styela montereyensis*), the dog or Kellet’s whelk (*Kelletia kelletii*), and sea urchins (*Strongylocentrotus franciscanus* and *S. purpuratus*). Encrusting species such as bryozoans, other tunicates, sponges, and hydrozoans are also abundant (EA Engineering, Science and Technology 1997 [as cited in City of Carlsbad 2005]; Le Page and Ware 2001).

Several surveys cited in City of Carlsbad (2005) document the presence of fish species associated with the kelp beds in the Project area, including kelp bass (*Paralabrax clathratus*), sand bass (*P. nebulifer*), black surperch (*Embiotoca jacksonii*), kelp surperch (*Brachyistius frenatus*), white surperch (*Phaenerodon furcatus*), black surperch (*Embiotoca jacksonii*), California sheephead (*Semicossyphus pulcher*), rock wrasse (*Halichoeres semicinctus*), senorita (*Oxyjulis californica*), and topsmelt (*Atherinops affinis*).

**Offshore Seafloor Habitat and Biota**

A seafloor habitat mapping study using a side-scan sonar and ROV was completed offshore the EPS in February 2013 in water depths ranging from approximately 10 to 120 feet mean lower low water (Merkel & Associates 2013a). Figure 3.4-2 shows the survey area and a copy of the survey report is provided as Appendix I.

Sonar data were used to develop a seafloor habitat map and ground-truthing of the interpreted habitats was completed using the ROV. Merkel & Associates (2013a) reports that sedimentary habitat comprised 350 of the 387 acre survey area; the surficial sediments consisted of fine sand throughout the survey area. Hard bottom habitat, consisting of rock reefs, comprises the remaining 27 acres (7% of the survey area) as shown in Figure 3.4-2. Along the southern boundary of the survey area, approximately 15 acres of bedrock reef habitat was recorded. Hard bottom substrate is present in
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water depths ranging from -5 to -20 feet, with a small patch located approximately 100 feet south of the fuel oil submarine pipeline corridor (Merkel & Associates 2013a).

During the February survey, biologists were not able to detect surfgrass beds due to an inability to access the shallow waters over the reef features. Merkel & Associates (2013a) does, however, indicate that surfgrass on these reefs cannot be ruled out and have been previously observed in this area. Surfgrass may also be present on the top of the reef at the southeastern portion of the study area (Merkel & Associates 2013a).

Kelp beds documented in this survey are dominated by giant kelp (Macrocystis pyrifera), which ranges from water depths of about -20 feet to -120 feet. Approximately 12 acres of kelp forest habitat was present along the southern boundary of the Merkel & Associates’ study area in water depths ranging from -20 to -45 feet.

In their report, Merkel & Associates (2013a) noted several species associated with sedimentary habitat within the Project area at various water depths. At a water depth of -25 feet, a sea pen (Stylatula elongata) and thornback ray (Platyrhinoidis triseriata) were recorded. In water depths up to 45 feet, Ichthyofauna species were found, including the Dover sole (Microstomus pacificus), longspine combfish (Zaniolepis latipinnis), Pacific sanddab (Citharichthys sordidus), speckled sanddab (C. stigmaeus), and unidentified rockfish (Sebastes spp.). In water depths between 45 and 75 feet, the black-eyed goby (Coryphopterus nicholsii) and California lizardfish (Synodus lucioceps) were observed.

A variety of targets were detected from the sonar survey, including two exposed sections of the fuel oil submarine pipeline:

- A 150-foot-long section, found at water depths ranging from 30 to 35 feet; and
- A 1,100-feet-long section, found between the 40-foot and 63-foot isobaths.

The relatively low relief of the fuel oil submarine pipeline and the adjacent sandy habitat suggest that the pipeline is intermittently buried and exposed and is, therefore, unlikely to support a diverse community of perennial marine organisms (Merkel & Associates 2013a). No kelp or other epibiota were observed on the exposed portions of pipeline.

The sonar survey also detected anchors and chain, which support some epibiota, including tunicates, bryozoans, sponges, sea fans (Muricea spp.), and turf red algae (Corallina spp.), but few perennial macroalgal species and no canopy-forming macrophytic algae. Two juvenile lobsters (Panulirus interruptus) and a black-eyed goby were observed adjacent to one exposed anchor chain. Smaller isolated targets detected by the sonar survey were also investigated. Most were biological, consisting of organic material such as shells that had likely fallen off or had been scraped off of the surface moorings. The debris piles typically consisted of mounds of mussel shells (Mytilus spp.),
which supported a number of small crustaceans, including unidentified crab and shrimp species, and occasionally squid eggs (Merkel & Associates 2013a).

**Sea Turtles**

Sea turtles that may be found in the Project area include the leatherback sea turtle (*Dermachelys coriacea*) and loggerhead sea turtle (*Caretta caretta*), both of which are federally endangered species, and the green sea turtle (*Chelonia mydas*) and olive ridley sea turtle (*Lepidochelys olivacea*), which are listed as Federally threatened species. Additional information on these sea turtles and their status is provided in the Project-specific Marine Wildlife Contingency Plan (MWCP) (Appendix F).

**Marine Mammals**

The area in and around the Project site supports local populations of marine mammals, including bottlenose dolphins (*Tursiops truncatus truncatus*) (offshore and coastal species), California sea lions (*Zalophus californianus*), and Pacific harbor seals (*Phoca vitulina richardsi*). The California gray whale (*Eschrichtius robustus*) may also be present in the Project area as it migrates from Baja California to Alaska. Based on abundance and zoogeographic distribution information, marine wildlife most likely to be encountered by vessels during transit include the common dolphin (*Delphinus delphis*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), bottlenose dolphin, California sea lion, Pacific harbor seal, southern sea otter (*Enhydra lutris nereis*), and California gray whale. All marine mammal species are fully protected under the Marine Mammal Protection Act (MMPA), with additional protection to endangered and threatened species under the Federal Endangered Species Act (FESA) and California Endangered Species Act. The only endangered or threatened marine mammal species expected to occur in and around the Project site is the southern sea otter, which is considered a threatened species under the FESA. Additional information on the biology of these and other marine wildlife is provided in the Project-specific MWCP (Appendix F).

**Non-Native Aquatic Species**

Non-native aquatic species (NAS), also known as non-indigenous aquatic species, include plants, animals, and micro-organisms that have been introduced or transported to new regions through various human activities. In coastal environments, commercial shipping is the most significant vector for invasions, and vessel biofouling and ballast water are considered the primary contributors of NAS. Once established, NAS can cause significant ecological, economic, and human health problems in the receiving environment, including altering the structure and function of ecosystems, causing declines in native and commercial fisheries, and spreading human pathogens. The California Department of Fish and Wildlife (CDFW) (formally California Department of Fish and Game [CDFG]) recognizes 347 NAS with established populations in California.
coastal waters (CDFW Office of Spill Prevention and Response [OSPR] 2014). The origin of many NAS is unknown; however, the majority of NAS in California appear to be native to the northwest Pacific or northeast Atlantic.

The CSLC is the lead implementing agency for the State’s Marine Invasive Species Program (MISP), which strives to prevent NAS release from commercial vessels to California waters. The MISP began in 1999 with the passage of California’s Ballast Water Management for Control of Nonindigenous Species Act, which addressed the threat of NAS introductions through ships’ ballast water. In 2003, the Marine Invasive Species Act (MISA) was passed, reauthorizing and expanding the 1999 Act, which directed the CSLC to formulate recommendations to prevent or minimize the introduction of NAS discharges for vessels 300 gross registered tons or greater, capable of carrying ballast water, operating in State waters. All vessels that depart a California port or place are required to submit to the CSLC a Ballast Water Reporting Form that includes information about port of origin, how the ballast water was managed, and how much ballast water was discharged (CSLC 2014).

The CSLC also regulates vessel biofouling under the MISA. Since 2008, the CSLC has required vessels subject to the MISA to submit an annual Hull Husbandry Reporting Form, and regularly remove vessel biofouling. These data, in conjunction with results from CSLC-funded biological research, help in the identification of management practices to reduce the risk of NAS introductions through vessel biofouling. The CSLC has proposed regulations (specifically to amend Cal. Code Regs., tit. 2, div. 3, ch. 1, art. 4.8) that would establish management requirements for vessel biofouling, including the use of a biofouling management plan specific to the vessel, biofouling log book, and use of antifouling systems or practices to deter or prevent species attachment.

### 3.4.2 Regulatory Setting

#### 3.4.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.4-2.

| U.S. Endangered Species Act (FESA) (7 USC 136, 16 USC 1531 et seq.) | The FESA, which is administered in California by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), provides protection to species listed as threatened or endangered, or proposed for listing as threatened or endangered. Section 9 prohibits the “take” of any member of a listed species.  
  - Take is defined as “…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”  
  - Harass is “an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited |

<table>
<thead>
<tr>
<th>December 2015</th>
<th>3-33</th>
<th>Encina MOT Decommissioning</th>
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</thead>
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### Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

<table>
<thead>
<tr>
<th>Country</th>
<th>Law/Act</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 USC 1801 et seq.)</td>
<td>The MSA is the primary law governing marine fisheries management in U.S. Federal waters. The MSA was first enacted in 1976 and amended in 1996. Amendments to the 1996 MSA require the identification of Essential Fish Habitat (EFH) for federally managed species and the implementation of measures to conserve and enhance this habitat. Any project requiring Federal authorization, such as a USACE permit, is required to complete and submit an EFH Assessment with the application and either show that no significant impacts to the essential habitat of managed species are expected or identify mitigations to reduce those impacts. Under the MSA, Congress defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 USC 1802(10)). The EFH provisions of the MSA offer resource managers a means to heighten consideration of fish habitat in resource management. Pursuant to section 305(b)(2), Federal agencies shall consult with the NMFS regarding any action they authorize, fund, or undertake that might adversely affect EFH.</td>
</tr>
<tr>
<td>U.S.</td>
<td>Marine Mammal Protection Act (MMPA) (16 USC 1361 et seq.)</td>
<td>The MMPA is designed to protect and conserve marine mammals and their habitats. It prohibits takes of all marine mammals in the U.S. with few exceptions. The NMFS may issue a take permit under section 104 if the activities are consistent with the purposes of the MMPA and applicable regulations at 50 CFR, Part 216. The NMFS must also find that the manner of taking is “humane” as defined in the MMPA. If lethal taking of a marine mammal is requested, the applicant must demonstrate that using a non-lethal method is not feasible.</td>
</tr>
<tr>
<td>U.S.</td>
<td>Migratory Bird Treaty Act (MBTA) (16 USC 703-712)</td>
<td>The MBTA was enacted to ensure the protection of shared migratory bird resources. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird, their eggs, parts, and nests, except as authorized under a valid permit. The responsibilities of Federal agencies to protect migratory birds are set forth in Executive Order (EO) 13186. The USFWS is the lead agency for migratory birds. The USFWS issues permits for takes of migratory birds for activities such as scientific research, education, and depredation control, but does not issue permits for incidental take of migratory birds.</td>
</tr>
</tbody>
</table>
| U.S.    | Other                                                                   | • The Bald and Golden Eagle Protection Act makes it illegal to import, export, take (including molest or disturb), sell, purchase or barter any bald eagle or golden eagle or parts thereof.  
• Clean Water Act (33 USC 1251 et seq.) and Rivers and Harbors Act (33 USC 401) (see Section 3.9, Hydrology and Water Quality).  
• CZMA (see Table 1-2).  
• EO 13112 requires Federal agencies to use authorities to prevent introduction of invasive species, respond to and control invasions in a cost-effective and environmentally sound manner, and provide for restoration of native species and habitat conditions in invaded ecosystems.  
• EO 13158 requires Federal agencies to identify actions that affect natural or cultural resources within a Marine Protected Area (MPA) and, in taking such
### Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

<table>
<thead>
<tr>
<th>State</th>
<th>Description</th>
<th>Details</th>
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<tr>
<td><strong>CA</strong></td>
<td>California Endangered Species Act (CESA) (Fish &amp; G. Code, § 2050 et seq.)</td>
<td>The CESA provides for the protection of rare, threatened, and endangered plants and animals recognized by the California Department of Fish and Wildlife (CDFW), and prohibits the taking of such species without its authorization; CESA also provides protection for species designated as candidates for threatened or endangered listings. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened species and endangered species (Fish &amp; G. Code, § 2070). The CDFW also maintains a list of candidate species, which are species that the CDFW has formally noticed as under review for addition to the threatened or endangered species lists. The CDFW also maintains lists of species of Special Concern that serve as watch lists. Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may affect a candidate species. The CESA also requires a permit to take a State-listed species through incidental or otherwise lawful activities (§ 2081, subd. (b)).</td>
</tr>
<tr>
<td><strong>CA</strong></td>
<td>California Marine Life Protection Act (MLPA) (Fish &amp; G. Code, §§ 2850–2863)</td>
<td>Passed by the State Legislature in 1999, the MLPA required the CDFW to redesign its system of MPAs to increase its coherence and effectiveness at protecting the state's marine life, habitats, and ecosystems. For the purposes of MPA planning, a public-private partnership commonly referred to as the MLPA Initiative was established, and the State was split into five distinct regions (four coastal and the San Francisco Bay) each of which had its own MPA planning process. All four coastal regions have completed these individual planning processes. As a result the coastal portion of California's MPA network is now in effect statewide. Options for a planning process in the San Francisco Bay have been developed for consideration at a future date.</td>
</tr>
<tr>
<td><strong>CA</strong></td>
<td>Lake and Streambed Alteration Program (Fish &amp; G. Code, §§ 1600-1616)</td>
<td>The CDFW regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. These regulations require notification of the CDFW for lake or stream alteration activities. If, after notification is complete, the CDFW determines that the activity may substantially adversely affect an existing fish and wildlife resource, the CDFW has authority to issue a Streambed Alteration Agreement.</td>
</tr>
</tbody>
</table>
| **CA** | Other relevant California Fish and Game Code sections | - The California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.) is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act includes provisions that prohibit the taking of listed rare or endangered plants from the wild and a salvage requirement for landowners. The Act directs the CDFW to establish criteria for determining what native plants are rare or endangered. Under section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered.  
- The California Species Preservation Act (Fish & G. Code, §§ 900-903) provides for the protection and enhancement of the amphibians, birds, fish, mammals, and reptiles of California.  
- Fish and Game Code sections 3503 & 3503.5 prohibit the taking and possession of native birds’ nests and eggs from all forms of needless take. These regulations also provide that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nests or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto. |

actions, to avoid harm to the natural and cultural resources that are protected by a MPA.
Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

<table>
<thead>
<tr>
<th>CA</th>
<th>Coastal Act Chapter 3 policies (see also Table 1-2)</th>
<th>Coastal Act policies applicable to this issue area are:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fish and Game Code sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), &amp; 5515 (fish) designate certain species as “fully protected.” Fully protected species, or parts thereof, may not be taken or possessed at any time without permission by the CDFW.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fish and Game Code section 3513 does not include statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game, migratory birds.</td>
<td></td>
</tr>
</tbody>
</table>

Coastal Act policies applicable to this issue area are:

- Section 30230 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 addresses biological productivity and water quality.

- Section 30233, which applies in part to development activities within or affecting wetlands and other sensitive areas among other requirements, identifies eight allowable uses, requires that the proposed project be the least environmentally damaging feasible alternative, and where applicable, requires feasible and appropriate mitigation.

- 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.

1 3.4.4.2 Local

2 The City of Carlsbad (2006) General Plan OSCE contains the following biological resources-related goals, objective, and policy relevant to onshore Project activities.

3 - Goal A.1: A city that protects environmentally sensitive land and buffer areas.

4 - Goal A.7: A city which makes every possible effort to preserve sensitive flora and fauna.

5 - Objective B.12: To ensure that whenever possible, new development does not adversely impact sensitive environmental resources.

6 - Policy C.19: Preserve natural resources by: protecting fish, wildlife, and vegetation habitats; retaining the natural character of waterways, shoreline features, hillsides, and scenic areas and viewpoints; safeguarding areas for scientific and educational research; respecting the limitations for air and water resources to absorb pollution; encouraging legislation that will assist logically in preserving these resources and, protecting archeological and paleontological resources.
Environmental Checklist and Analysis – Biological Resources

3.4.3 Impact Analysis

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Terrestrial Biology

Less than Significant Impact. Decommissioning and abandonment activities on land would mostly be limited to developed areas (mostly paved) within the EPS, the fuel oil submarine pipeline corridor under Carlsbad Boulevard, and the beach. While several special-status species have been reported in MHCP core habitat areas, the EPS and onshore pipeline corridor do not provide suitable habitat for these species; however, two species have been reported in the Project’s vicinity: the coast woolly-head and western snowy plover.

A 1959 entry in the California Natural Diversity Database reports that coast woolly-heads were found on the beach near the EPS; however, due to scouring/deposition by tides and storm waves, no suitable habitat for this species is apparent on the beach; therefore, there would be no loss of suitable habitat for coast woolly-head. As a result, it is unlikely that the Project would have a substantial adverse effect on the coast woolly-head, and this impact would be less than significant.

The 2007 Western Snowy Plover Recovery Plan indicates that this species has not been found breeding at Carlsbad State Beach. The area, however, provides potential foraging habitat for the species. Because foraging opportunities are limited by existing human activities at Carlsbad State Beach and Project activities on the beach would be short-term (5 months), it is unlikely that the Project would have a substantial adverse effect on the western snowy plover, and this impact would be less than significant.

Marine Biology

Grunion Spawning

Less than Significant Impact. The Project has the potential to impact grunion spawning habitat. Grunion spawning occurs from March through August and occasionally in February and September, with peak spawning in late March to early June (CDFW 2014). Due the abundance of grunion spawning habitat elsewhere in the region and the scheduling of beach segment decommissioning activities during most of the non-grunion spawning periods, the impact to grunion habitat is considered less than significant. Although impacts to grunion are considered less than significant, decommissioning of the beach and surf zone segments is scheduled to begin in September and may overlap with the end of the grunion spawning season. To further
reduce the potential for impacts and ensure they remain less than significant, the following APMs would be implemented.

**APM BIO-1a: Grunion Avoidance.** Intertidal activities will be scheduled outside of the grunion spawning season, which is generally three or four nights after the highest tide associated with each full or new moon and then only for a 1- to 3-hour period each night following high tide from late February or early March to August or early September.

**APM BIO-1b: Grunion Surveys and Avoidance.** If scheduling is not possible under APM BIO-1a, intertidal grunion surveys will be conducted during grunion spawning tidal periods to document that grunion have not used the site. Intertidal activities shall not occur if grunion spawning is observed in the Project area.

**Marine Vessel and Marine Wildlife Interaction**

**Less than Significant with Mitigation.** Project-related vessel activity in the Project area and to and from the Project’s shore base would increase the probability of marine vessel and marine wildlife interactions, including collisions. The shore base for offshore marine operations is unknown at this time; however, the most likely local embarkation point would be Oceanside Harbor due to its proximity to the Project area. If dockage cannot be found there, however, the shore base may be located in the Port of Long Beach, Port of Los Angeles, or Unified Port of San Diego. Marine mammals are expected to be present within the Project area’s marine waters throughout the year. Currently, Project activities are scheduled to avoid the gray whale migration period (December through May) with the exception of the certain phases/tasks associated with decommissioning the offshore segment, which would extend into the beginning of January. Potential impacts to marine wildlife from interactions with Project vessels (e.g., harassment or strikes) during transit are considered possible, though unlikely.

To ensure that potential vessel-related impacts to marine wildlife as a result of Project activities are avoided or minimized to less than significant, the following measure would be implemented.

**MM BIO-1: Marine Wildlife Contingency Plan (MWCP).** A MWCP shall be prepared for review and approval by California State Lands Commission staff prior to the commencement of decommissioning activities. The MWCP shall include, but not be limited to, the following elements:

- Description of the pre-decommissioning training seminar that will be provided to educate Project personnel on identifying marine wildlife in the Project area and to provide an overview of the wildlife mitigation measures to be implemented;
- Qualifications, number, location, and authority of onboard Marine Wildlife Monitors (MWMs);
• Acoustic safety zone radius that will be enforced by the MWMs during dynamic pipe ramming activities;
• Distance, speed, and direction transiting vessels will maintain when in proximity to a marine mammal or reptile;
• Discussion of how impacts associated with marine wildlife entanglement in Project vessel anchor lines will be minimized; and
• Observation recording procedures and reporting requirements in the event of an observed impact to marine wildlife.

Marine Wildlife Anchor Line Entanglement

**Less than Significant with Mitigation.** Once onsite, Project vessels would be anchored during MOT decommissioning, creating the potential for marine wildlife entanglement in Project-associated anchor lines. However, with the implementation of MM BIO-1, the potential for marine wildlife entanglement in anchor lines would be reduced to less than significant.

Underwater Noise Impacts from Dynamic Pipe Ramming

If conventional removal methods are not successful in removing the surf zone segment of the fuel oil submarine pipeline, dynamic pipe ramming (DPR) may be employed, which may result in significant underwater noise impacts to marine wildlife. (DPR uses a hammer that is pneumatically or hydraulically powered to drive [push] or extract [pull] an attached section of the pipeline.) As a result, Greeneridge Sciences, Inc. (Greeneridge) was contracted to perform an evaluation of DPR’s potential acoustic impacts on marine wildlife (Grebner and Kim 2015; Appendix J), which serves as the basis for the acoustic impact analysis described below.⁹

Greeneridge reported that the acoustic propagation conditions at the MOT site suggest that sound levels will decrease relatively rapidly with increasing range from the DPR source. Further, DPR operations are expected to be short-term and only last approximately four hours. Additional noise insulation would occur from the concrete coating around the pipeline and because much of the fuel oil submarine pipeline within the surf zone segment is buried. Although no published data are available on the sound levels and frequency composition of DPR, the physical characteristics of DPR are similar to vibratory pile driving, which were used by Greeneridge to provide a qualitative evaluation of potential acoustic impacts on marine wildlife. A quantitative evaluation was not provided because, even assuming vibratory pile driving is a reasonable proxy for

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⁹ Greeneridge’s acoustic impact analysis is based on the National Marine Fisheries Service’s (NMFS) current acoustic thresholds. The acoustic safety zone to be implemented during DPR activities will reflect NMFS’s updated and finalized acoustic thresholds (anticipated in late 2015). Refer to the following section, *Marine Mammals*, for more information.
Environmental Checklist and Analysis – Biological Resources

DPR, the limited and highly variable acoustic measurements available for vibratory pile driving prohibit meaningful quantitative estimates of sound produced for comparison to regulatory standards for acoustic impacts to marine wildlife.

As described in Greeneridge’s report, the vibratory pile driving proxy showed sound energy over a broad range of frequencies. The highest sound pressure level (SPL) was about 180 decibels (dB) referenced to (re) 1 micropascal (μPa)\(^{10}\) (root-mean-square [rms]\(^{11}\)), for the one-third octave band centered at 1 kilohertz (kHz). The frequency range from 400 Hertz (Hz) to 3 kHz is a region of high-energy for vibratory pile driving, with received levels of 170 dB re 1 μPa (rms) or more. Within a wider frequency range from 200 Hz to 10 kHz, received levels exceeded 160 dB re 1 μPa (rms).

The hearing ranges of all marine species examined in the Greeneridge report shared some degree of overlap with the sound frequencies produced by the pile driver proxy. Some species (baleen whales, pinnipeds, and birds) showed extensive overlap in hearing sensitivity with the proxy, while others (dolphins, fishes, and sea turtles) showed more limited overlap. Potential impacts to marine species are dependent on sound source levels and frequencies, animal hearing sensitivity, proximity to the sound source, noise duration, and time of operation.

Hearing sensitivities of marine species vary depending upon their anatomy and physiology. For example, some species, such as marine mammals, seem to be more sensitive to the sound pressure component of sound, while some fish appear to be more sensitive to the particle motion component of sound. Additionally, a species’ hearing sensitivity to sound also varies depending upon the frequency of the sound, since not all marine species hear equally well at all frequencies. Potential acoustic-related impacts associated with DPR on marine species found within the Project area are discussed below.

**Marine Mammals**

**Less than Significant with Mitigation.** The National Marine Fisheries Service (NMFS), a division of the National Oceanic and Atmospheric Administration (NOAA), has identified acoustic threshold (received sound level) criteria above which marine mammals are predicted to experience changes in their hearing sensitivity, either permanent or temporary hearing threshold shifts. Physiological responses such as auditory or non-auditory tissue injuries are known as Level A Harassment in the MMPA and harm in the FESA. Level A Harassment becomes a concern when the sound levels from human-made sounds reach or exceed the acoustic threshold associated with

\[^{10}\] 1 μPa is the reference sound pressure for sound in water.

\[^{11}\] Root-mean-square (rms) is the average of the squared sound pressure over some duration.
auditory injury in marine species. A permanent threshold shift (PTS) is a permanent, irreversible increase in an animal’s auditory threshold within a given frequency band or range of the animal’s normal hearing. A temporary threshold shift (TTS) is a temporary, reversible increase in the threshold of audibility at a specific range of frequencies. While TTS is not an injury, it is considered Level B Harassment by the MMPA and harassment by the FESA. Along with TTS, Level B Harassment also includes behavioral impacts. For pinnipeds and cetaceans, NMFS has specified Level A SPL thresholds as 190 and 180 dB re 1 μPa (rms), respectively. The Level B SPL threshold for all marine mammals is 160 dB re 1 μPa (rms).

The current acoustic threshold levels, used for most sound sources, consist of a single threshold for cetaceans and a single threshold for pinnipeds regardless of the sound source. That is, they do not take into account exposure, duration, sound frequency composition, repetition rate, and a species’ hearing sensitivity. In 2013, NMFS proposed new acoustic threshold levels in its Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing that take into account some of these factors, including dividing marine mammals into functional hearing groups. On July 23, 2015, NMFS released a second draft of its guidance document for a 45-day public comment period. NMFS anticipates that the guidance document will be finalized in late 2015, which will be used to inform the acoustic safety zone radius to be implemented during DPR activities.

Hearing group designations for marine mammal species are shown in Table 3.4-3. The assumption is that all species within a functional hearing group have approximately the same hearing sensitivity.

### Table 3.4-3. Functional Marine Mammal Hearing Groups and Ranges

<table>
<thead>
<tr>
<th>Functional Hearing Group</th>
<th>Functional Hearing Range*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-frequency cetaceans(^2) (baleen whales)</td>
<td>7 Hz to 25 kHz</td>
</tr>
<tr>
<td>Mid-frequency cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)</td>
<td>150 Hz to 160 kHz</td>
</tr>
<tr>
<td>High-frequency cetaceans (true porpoises, (Kogia), river dolphins, (Cephalorhynchus), (Lagenorhynchus) (cruciger), and (L.) (australis))</td>
<td>200 Hz to 180 kHz</td>
</tr>
<tr>
<td>Phocid pinnipeds (underwater) (true seals)</td>
<td>75 Hz to 100 kHz</td>
</tr>
<tr>
<td>Otariid pinnipeds (underwater) (sea lions and fur seals)</td>
<td>100 Hz to 48 kHz</td>
</tr>
</tbody>
</table>

Acronyms: Hz = Hertz; kHz = kilohertz.

*Represents the frequency band of hearing for an entire group as a composite (i.e., all species within the group), where individual species’ hearing ranges are typically not as broad. Functional hearing is defined as the range of frequencies a group hears without incorporating non-acoustic mechanisms (Wartzok and Ketten 1999). This is ~60 to ~70 dB above best hearing sensitivity (Southall et al. 2007) for all functional hearing groups except LF cetaceans, where no direct measurements on hearing are available. For LF cetaceans, the lower range is based on recommendations from Southall et al. 2007 and the upper range is based on information on inner ear anatomy and vocalizations.

Source: NOAA 2015.
Greeneridge found that low-frequency cetacean hearing overlaps with the entire higher energy region of the pile driver proxy. As noted in the Greeneridge report, gray whales are a low-frequency cetacean species likely to occur in the MOT area during decommissioning activities, and as such, could be impacted by DPR. During their southern migration, gray whales are abundant and often visible in nearshore waters from Monterey Bay to San Diego; offshore San Diego, gray whales usually swim within 6.2 miles (10 kilometers) of the coast. If DPR were to occur during their southern migration, gray whales have the potential to be exposed to the maximum energy levels emitted. If the vibratory pile driving characteristics of the proxy (e.g., frequency range and sound levels) is a close approximation to the actual unknown DPR emissions at the MOT location and gray whales are within 6.2 miles of shore, then behavioral impacts are potentially a concern. Proximity to the sound source is important for this species; however, impacts due to sound duration should be temporary since these whales are predominantly migrating and should not be deterred by any short divergences from their path, especially with a human-made sound nearshore. Outside of the December to mid-February timeframe, gray whales should not be impacted because they typically swim further offshore or are absent from the area. Presently, the Project is scheduled to avoid the gray whale migration season with the exception that offshore operations extend into the early part of January. As a result, there is the potential for DPR to significantly impact gray whales. Given the information above and the temporary use of DPR (approximately 4 hours), the implementation of MM BIO-1 and the following measures would ensure that potential impacts to gray whales and other low-frequency cetacean species are avoided or mitigated to less than significant.

**MM BIO-2: Dynamic Pipe Ramming (DPR) Soft-Start and Ramp-Up Procedure.** The contractor conducting DPR operations shall begin the procedure at a reduced level and repeat the sound producing activity, gradually increasing the intensity of the operation prior to initiating normal construction levels. The duration of the ramp-up during Project operations shall be determined by a qualified marine biologist and based upon the findings of a sound source characterization study for DPR. This procedure will be used any time DPR operations are initiated.

**MM BIO-3: Dynamic Pipe Ramming (DPR) Sound Source Characterization.** Prior to DPR operations, a marine acoustics specialist shall be retained to conduct underwater noise measurements during a trial operation of the equipment at the Project site. In coordination with the National Oceanic and Atmospheric Administration (NOAA), the results of the underwater noise measurements shall be used to determine preclusion radii for marine wildlife (mammals and reptiles) safety during DPR operations based on NOAA’s acoustic thresholds in place at the time of Project operations for permanent and temporary threshold shifts. A copy of the sound source characterization shall be provided to California State Lands Commission staff and NOAA within 2 weeks of completion.
The sound source characterization for DPR would likely be conducted immediately prior to Project operations using DPR since the DPR equipment would be onsite.

**MM BIO-4: Marine Wildlife Monitoring During Sound Source Characterization and Dynamic Pipe Ramming (DPR).** Qualified marine wildlife monitors (MWMs) shall be onsite and present throughout sound source characterization and DPR operations. Once the marine wildlife preclusion radii (i.e., safety zone) have been determined, MWMs shall be located such that he/she has a clear view of the marine waters within the safety zone and beyond. The MWMs shall indicate that a designated safety zone is clear of marine wildlife (mammals and reptiles) prior to the start of DPR operations and shall have the authority to stop DPR operations if marine wildlife are observed at any time within the safety zone. The initial safety zone to be implemented during sound source characterization will be 1,000 feet. The initial safety zone will be revised to reflect new thresholds for permanent and temporary threshold shifts (PTS and TTS) should they be finalized by the National Oceanic and Atmospheric Administration prior to Project operations. The safety zone to be implemented during DPR will be modified as necessary based on the sound source characterization results and will reflect the PTS and TTS thresholds in place at the time of Project operations.

As indicated above, a 1,000-foot safety zone would be implemented during sound source characterization. This safety zone is based upon a conservative model of acoustic propagation for the DPR proxy provided by Greeneridge, which indicates that the safety radii for a received level of 180 dB re 1 μPa is 260 m or 853 feet.

Greeneridge found that mid-frequency cetacean hearing only partially overlaps the frequency range of the pile driver proxy, so impacts to mid-frequency cetaceans are expected to be minimal, except for the coastal bottlenose dolphin. Both the common and Pacific-white sided dolphins are expected to be found along or seaward of the 100-fathom curve (i.e., region where water depth is 600 feet or more), which is several kilometers from the sound source at the MOT location. While these dolphins may detect the DPR, the impact is expected to be low. These two species also forage at night when presumably construction operation would cease. The coastal bottlenose dolphin spends most of its time within 1,640 feet of shore and shoreward of the MOT location. The pile driver proxy sound levels are highest at approximately 1 kHz, which is a region of low hearing sensitivity in bottlenose dolphins. Meanwhile, the region of the dolphins’ greatest sensitivity (approximately 10 kHz) corresponds to frequencies at which the energy content of the pile driving is low. If these coastal dolphins are in the area, their foraging, communication, and normal swimming trajectories could be impacted, as well as vocal communication masked. Given the information above and the temporary use of DPR (approximately 4 hours), along with the implementation of MM BIO-1, MM BIO-2, MM BIO-3, and MM BIO-4, potential impacts to mid-frequency cetaceans likely to be found near the MOT would be avoided or mitigated to less than significant.
Greeneridge did not identify any high-frequency cetaceans in or near the Project area that would temporally or spatially overlap with DPR activities; however, the implementation of MM BIO-1, MM BIO-2, MM BIO-3, and MM BIO-4 would ensure that potential impacts to any high-frequency cetaceans near the MOT are avoided or mitigated to less than significant. Greeneridge also found that the hearing ranges for both the harbor seal and California sea lion overlap the entire frequency range of the pile driver proxy. Furthermore, the highest sound levels for the pile driver proxy overlap frequencies at which pinniped hearing is most sensitive. Harbor seals and California sea lions that may be seen near the MOT location are likely local inhabitants that swim close to shore. Both the sound level and duration of exposure to DPR would increase the impact on these pinnipeds. While pinnipeds are capable of swimming away from the Project site, some animals may remain if the immediate area is their habitat or they may be disoriented by the sound. As a result, DPR could result in a potentially significant impact to harbor seals and California sea lions. Given the information above and the temporary use of DPR (approximately 4 hours), along with the implementation of MM BIO-1, MM BIO-2, MM BIO-3, and MM BIO-4, potential impacts to pinnipeds found near the MOT would be avoided or mitigated to less than significant.

Sea Turtles

Less than Significant with Mitigation. Sea turtles appear to be sensitive to low-frequency sounds with a functional hearing range of approximately 100 Hz to 1.1 kHz. It has been suggested that sea turtle hearing thresholds should be equivalent to TTS thresholds for low-frequency cetaceans when animals are exposed to impulsive (e.g., impact pile driving) and non-impulsive (e.g., vibratory pile driving, DPR) anthropogenic sounds. However, more recently, the Acoustical Society of America standards committee suggested that sea turtle hearing was probably more similar to that of fishes than marine mammals. Turtles have been presumed to have the same thresholds as those fishes with swim bladders not involved in hearing. Thus, sea turtle mortality and mortal injury would be expected at sound levels greater than a SEL$_{cum}$ of 210 dB re 1 μPa$^2$-s and a SPL of 207 dB re 1 μPa (peak) (see Appendix J for more information).

With respect to sea turtles, Greeneridge found that there is overlap between the hearing range of sea turtles and the sound frequencies produced by the pile driver proxy, but the proxy’s frequency of maximum energy (1 kHz) is at the upper end of their hearing range, where their ability to detect the sound is expected to be poor. The sound level and duration of exposure are likely important components for sea turtles since they are slow swimmers and it would take longer for them to leave an area. Leatherback sea turtles may be the most impacted by noise exposure due to their broader hearing range (i.e., 200 Hz to 1 kHz); however, the likelihood of this species being in the MOT area is very low. Some potential responses of sea turtles to human-made sounds include increased surface time, decreased foraging, displacement, and startle reactions. Leatherback sea turtles are an endangered species wherever they are found, and both
green and olive ridley sea turtles are threatened species, so extra precautions and potential mitigation are warranted if they enter the area. As a result, DPR could result in a potentially significant impact to sea turtles found near the MOT. Given the information above and the temporary use of DPR (approximately 4 hours), along with the implementation of MM BIO-1, MM BIO-2, MM BIO-3, and MM BIO-4, impacts to sea turtles would be avoided or mitigated to less than significant.

Fish

Less than Significant. Hearing capabilities vary considerably between fish species and within fish groups. Fish species within a group may also differ substantially in terms of their hearing structures. Fishes hear when hair cells are directly stimulated by particle motion in the water. Some fishes also have swim bladders or other air sacs that can detect and convert the pressure component of a sound field into particle motion, which directly stimulates the inner ear, allowing the fishes to detect sound. The majority of fishes are hearing generalists, which usually only hear sounds up to 1.5 kHz. Hearing specialists, some of which can hear sounds up to 3 to 4 kHz or more, have adaptations that lower their hearing threshold, thereby enhancing their ability to detect sounds in their hearing range (Popper 2003; Hastings and Popper 2005). For instance, unlike hearing generalists, whose primary hearing is provided by direct stimulation of the inner ear, hearing specialists have evolved several mechanisms to acoustically couple the swim bladder to the middle ear. Specializations that enhance hearing vary among species and may include an extension of the swim bladder, a direct mechanical connection between the swim bladder and inner ear, or a separate bubble of gas near the ear (Ramcharitar et al. 2001; Hastings and Popper 2005; Popper et al. 2014).

Mortality and injury to fish as a result of sound varies depending upon the anatomy and physiology of the fish. For example, mortality and potential mortal injury thresholds for fishes with swim bladders are lower than for fishes without swim bladders.

The only U.S. regulatory guidelines for the effects of sound on fish were developed by the Fisheries Hydroacoustic Working Group, which stated a SPL of 206 dB re 1 μPa (peak) for the onset of physiological effects of pile driving on fish. In 2014, the Acoustical Society of America developed guidelines for sound exposure criteria for fish and grouped them into four categories: (1) fish with no swim bladder; (2) fish with a swim bladder not involved in hearing; (3) fish with a swim bladder involved in hearing; and (4) eggs and larvae. These guidelines suggest that mortality and mortal injury would be expected for fish with swim bladders and eggs and larvae at sound levels greater than a cumulative sound exposure level (SEL$_{cum}$) of 210 dB re 1 μPa$^2$-s and a SPL of 207 dB re 1 μPa (peak). For fish with no swim bladders, mortality and mortal injury

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$^{12}$The cumulative sound exposure level ($SEL_{cum}$) is the total cumulative energy received by an organism or object over time in a sound field.
injury would be expected at sound levels greater than a SEL$_{cum}$ of 219 dB re 1 μPa$^2$-s and a SPL of 213 dB re 1 μPa (peak). A discussion of these guidelines is provided in the report prepared by Greeneridge and is provided as Appendix J.

It is thought that the fishes in the Pacific Ocean are mostly hearing generalists (Hastings and Popper 2005). Hearing thresholds for fish that may be in the Project area (e.g., blackeye goby, sand bass, kelp bass, white croaker, northern anchovy) partially overlap with the frequency region of high energy for the pile driver proxy (Appendix J, Table 4, provides impact pile driving exposure criteria for fishes). Considering hearing sensitivity alone, the northern anchovy, a hearing specialist, would be able to detect the highest energy levels of the pile driver proxy and may be the most sensitive to sound levels emitted by DPR. However, fish injuries are more related to particle motion than pressure and increased sound levels may affect sensory cilia located along their bodies and in their inner ears. In general, fishes are especially sensitive to sound and those within close proximity to a loud or prolonged sound source may be impacted by death, hearing loss, and non-auditory tissue damage. Non-fatal responses of fish to sound include changes in swimming behavior, water column position, and schooling patterns, and may also elicit startle responses, area evacuation, and freezing in place reactions. Since fishes have such diverse ecologies, both the sound level exposure and duration would be important to the overall fish environment in the MOT area. In the case of DPR operations at the Project site, it is possible that fishes, depending upon their proximity to the noise source, may be fatally injured or exhibit non-fatal responses such as moving further away from the sound source. Because DPR activities would be temporary (approximately 4 hours) and there are no protected fish species in the Project area, this impact is considered less than significant.

**Birds**

**Less than Significant.** According to the Greeneridge report, compared to other vertebrates, birds have relatively consistent auditory structures and hearing capabilities regardless of size. The center-frequency and high-frequency limits of bird hearing, however, are inversely proportional to the bird’s size and weight. On average, a bird’s hearing ranges from 500 Hz to 6 kHz, with some exceptions, and no birds are known to hear over 15 kHz. There is only extremely limited information on diving bird sensitivity to sound underwater; therefore, the discussion of bird hearing and impacts presented in the Greeneridge report is derived from in-air audiograms. Additionally, there are no underwater acoustic guidelines for diving birds.

The frequency regions of high-energy levels for the pile driver proxy coincide with the greatest in-air hearing sensitivity for diving birds (1 to 3 kHz) and for birds, in general (approximately 1 to 4 kHz). Diving birds are especially vulnerable approaching a sound source not only because birds have higher thresholds of hearing (i.e., less sensitive hearing) than humans, but also because the sound-reflecting nature of the air-sea
interface tends to trap waterborne sounds beneath the sea surface. Birds are likely to
detect lower-level DPR sounds only shortly before encountering the support vessel, and
there likely would be few or no indicators of underwater DPR noise until a bird lands
upon or dives into the water. Birds on the water or diving in the area have the potential
to be exposed to the maximum sound energy from DPR. Near a pile driving site off
Point Loma, CA, least tern counts were lower on days with pile driving compared to
days without pile driving. Potential indicators of behavioral stresses due to noise on
birds may include a startle response, difficulty detecting prey or predators, masking of
communication sounds, physical displacement, and changing breeding or nesting sight
locations. Awareness of bird species and their responses are especially important since
some of the birds in the area are listed as threatened or endangered species. As stated
in the Greeneridge report, since the duration of underwater sound exposure for diving
birds is expected to be short, TTS and PTS resulting from DPR are unlikely. Impacts to
birds above water would likely be limited to startle responses and avoidance of the area
during DPR. Further, DPR operations are scheduled to occur outside of the bird
breeding and nesting season (February through July), so breeding and nesting activities
would not be impacted. Given the information above and the temporary use of DPR
(approximately 4 hours), this impact is considered to be less than significant.

Underwater Noise Impacts from Pre- and Post-Decommissioning Surveys

**Less than Significant with Mitigation.** Pre- and post-decommissioning seafloor debris
surveys would be conducted utilizing geophysical survey equipment (a side-scan sonar
or equivalent) within the Project area. The purpose of the pre-decommissioning survey
is to provide a baseline image of the seafloor that can be used to check against the
results of a post-decommissioning survey to ensure that any decommissioning-related
debris is identified and recovered. The post-decommissioning survey would aid in
identifying targeted debris items that were missed or may have resulted from offshore
decommissioning operations.

These surveys would require the use of a marine vessel and geophysical equipment
that generate noise during the data acquisition. **MM BIO-5** requires the Applicant to
obtain a geophysical survey permit through the CSLC’s Low-Energy Offshore
Geophysical Permit Program (OGPP). The OGPP requirements include the protection
of marine wildlife from potential noise impacts associated with such surveys. A separate
MWCP would be prepared for these surveys to meet the OGPP requirements and
include, at a minimum, information on the following:

- Survey location, schedule, and proposed survey track lines;
- Survey vessel(s);
- Survey equipment (e.g., frequency, source level);
- Safety zones;
• Qualifications, number, location, and authority of onboard MWMs;

• Information on marine wildlife that may occur in the proposed survey area;

• Distance, speed, and direction transiting vessels would maintain when in proximity to a marine mammal or reptile;

• Observation recording procedures and reporting requirements in the event of an observed impact to marine wildlife; and

• Other site-specific considerations relevant to the survey design.

With the inclusion of MM BIO-5, noise impacts associated with the pre- and post-decommissioning seafloor debris surveys would be reduced to less than significant.

**MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris Removal.** The offshore work shall begin and end with seafloor debris surveys. The Applicant’s contractor shall perform a side-scan sonar (with 400% coverage) and bathymetric survey, or multi-beam sonar survey, of the underwater worksite prior to the arrival of the contractor’s marine equipment spread at the worksite. The survey shall encompass the entire underwater worksite bordered by the contractor’s planned derrick barge anchorages plus an offset of approximately 500 feet. Derrick barge anchorages shall be positioned to avoid rock outcroppings and kelp beds. A map shall be produced by the surveyor and shall serve as the baseline for the seafloor conditions at the underwater worksite prior to the start of work.

All surveys employing low-energy geophysical equipment, including remotely operated vehicle surveys, must be conducted by an entity holding a valid geophysical survey permit under the California State Lands Commission’s (CSLC) Low-Energy Offshore Geophysical Permit Program (see [www.slc.ca.gov/Programs/OGPP.html](http://www.slc.ca.gov/Programs/OGPP.html)). Therefore, the Applicant shall obtain a valid Permit prior to initiating the surveys.

After decommissioning work is complete, the contractor shall be required to perform a second side-scan sonar (with 400% coverage) and bathymetric survey in the same underwater work area. The surveyors shall again produce a map of the survey area and use it to identify any items of seafloor debris introduced into the underwater worksite by decommissioning operations. The contractor shall remove all debris, if any, related to the offshore tanker berth facilities and operations and the decommissioning work.

The Applicant shall provide: (1) the pre-decommissioning survey map to CSLC staff and permitting agencies for approval at least 60 days prior to Project implementation; and (2) the post-decommissioning map to CSLC staff within 30 days of survey completion for agency sign-off.
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Terrestrial Environment

Less than Significant. The EPS is located within the boundary of the City of Carlsbad’s HMP, which guides the local implementation of the North County MHCP. The North County MHCP focuses on habitat preservation and enhancement for the California gnatcatcher, and Agua Hedionda Lagoon (located approximately 300 feet north of the fuel oil submarine pipeline) and adjacent areas to the east have been designated as core habitat areas for this species. The Agua Hedionda Lagoon also supports special-status species; however, the EPS and onshore fuel oil submarine pipeline do not provide suitable habitat for these species, except for the coast-woolly head and western snowy plover described in item a), where the Project was found to have a less than significant impact on these two species. Given the information above and in item a), the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community, and this impact would be less than significant.

Marine Environment

The marine environment is considered to be a sensitive resource and is protected, as described in Section 3.4.2, through the implementation of the California Coastal Act, MLPA, MSA, and other regulations specific to particular species, including marine species. Hard bottom habitat in the Project area is considered a sensitive marine community because it is one of the least abundant benthic habitats along the southern California coast, yet is among the most important habitats for rockfish and other marine species. Additionally, hard bottom substrate provides a base for kelp stands, which in turn provide nurseries, feeding grounds, and shelter to a variety of marine species.

Potential Seafloor/Hard Bottom Disturbance and Debris

Less than Significant with Mitigation. During the removal of Project infrastructure (e.g., anchors, chains, fuel oil submarine pipeline) from the sea floor, ocean sediments would be disturbed, mixing with the water column and creating turbidity. As these sediments precipitate, they may be redistributed onto rocky substrate in the Project area and cover bottom-dwelling organisms. Increased turbidity may also temporarily interfere with light penetration and photosynthesis in nearby kelp beds, while changes in water clarity may temporarily reduce the suitability of the water for habitation by fish. However, these impacts are expected to be short-term, limited in areal extent, and similar to turbidity generated by storm waves. Other sedimentary habitat alteration could occur if pieces of concrete coating fall off of the fuel oil submarine pipeline. To ensure that
pieces of concrete and other debris are not left on the seafloor, MM BIO-5 would be implemented to mitigate the potential impact to less than significant.

The Project may also result in the loss of hard bottom associated with the temporary removal of the riprap groin on the beach. This temporary removal of riprap for the excavation of the fuel oil submarine pipeline is considered less than significant as this habitat is routinely scoured and supports an epibiota that is common throughout the region on similar substrates. Hard bottom habitat may also be lost due to the removal of the pipeline (exposed/non-buried segments) and the associated mooring anchors and chains; however, this would be a less than significant impact due to their limited size and habitat value.

Placement of anchors and/or anchor lines from Project-related vessels may also result in potential damage to sensitive rocky habitat and kelp beds. To ensure that impacts to sensitive rocky habitat and kelp beds from anchors and/or anchor lines are avoided or mitigated to less than significant, the following measure would be implemented.

**MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).** A final MSAP shall be developed following the analysis of seafloor habitat and bathymetric data to be collected during the pre-decommissioning survey. Additionally, a diver-biologist survey shall be conducted to ensure that all pre-determined vessel anchor locations are positioned in sedimentary habitats and avoid rocky substrate and kelp by at least 50 feet. The final plan shall be submitted to California State Lands Commission staff for review at least 2 weeks prior to the commencement of Project activities.

A draft MSAP for the Project can be found in Appendix E that includes measures to avoid such impacts.

### Potential Discharge of Petroleum Products and Biocide

**Less than Significant with Mitigation.** The Project may result in an accidental discharge of petroleum products from Project vessels and equipment, which would have the potential to significantly impact marine resources. The Applicant would implement the following mitigation measure to avoid or reduce potential impacts associated with an accidental discharge of petroleum products from Project vessels and equipment to less than significant.

**MM BIO-7: Oil Spill Response Plan (OSRP).** An OSRP has been prepared for the Project. Each Project vessel shall have a copy of the plan and shall maintain the required onboard and subcontracted spill response equipment. Additional shore-based response equipment shall be onsite, which can be used for first-response containment and collection of petroleum that reaches the shoreline. If needed, subcontracted shoreline recovery personnel and additional equipment,
as identified in the OSRP shall be deployed to the site to assist in the recovery and disposal of spilled petroleum.

The OSRP for the Project can be found in Appendix G.

Although the fuel oil submarine pipeline was flushed and pigged, residual petroleum products and the biocide associated with the Nalco EC6106A preservative may be present. To ensure that potential impacts to marine habitats and biota associated with an accidental release into the marine environment of petroleum products and the Nalco EC6106A biocide preservative are avoided or reduced to less than significant, the following measure would be implemented.

**MM BIO-8: Flush Fuel Oil Submarine Pipeline.** Prior to opening the fuel oil submarine pipeline to the ocean during the decommissioning process, this pipeline shall be flushed from its offshore termination to its onshore termination at the beach valve pit with seawater to displace the potable water and preservative. The potable water and preservative mixture shall be recovered at the beach valve pit and transported off-site for treatment and disposal.

**Potential Spread of NAS**

**Less than Significant Impact.** Due to the use of marine vessels, the Project may result in the spread of NAS through ballast water and vessel biofouling. However, the potential spread of NAS would be addressed through the implementation of existing CSLC programs, including the CSLC’s Ballast Water Management Program and Biofouling Removal and Hull Husbandry Reporting. Additionally, the Project’s potential contribution to the spread of NAS would be further minimized by implementation of the following APM.

**APM BIO-2: Prevent Introduction of Non-Native Aquatic Species (NAS).** All Project vessels shall: (1) originate from Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay; (2) be continuously based out of Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay since last dry docking; or (3) have underwater surfaces cleaned before entering southern California at vessel origination point and immediately prior to transiting to the Project site. Additionally, and regardless of vessel size, ballast water for all Project vessels must be managed consistent with California State Lands Commission (CSLC) ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff. Project vessels shall also be available for inspection by CSLC staff for compliance. Further, as part of the Project kickoff meeting, a qualified marine biologist, approved by CSLC staff, shall provide information to all Project personnel about the spread of NAS in California waters and the programs (CSLC Ballast Water...
Environmental Checklist and Analysis – Biological Resources

Management Program and Biofouling Removal and Hull Husbandry Reporting) that will be implemented to minimize this hazard.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The Project is not located within or adjacent to federally protected wetlands as defined in Section 404 of the Clean Water Act; therefore, the Project would have no impact to federally protected wetlands.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. The Project may affect the movement of terrestrial and marine wildlife as a result of decommissioning activities, which would occupy certain areas of the land and ocean. However, the Project would not substantially interfere with the movement of migratory fish or wildlife species or impede the use of native wildlife nursery sites, as described in a), due to the temporary, short-term nature of the Project and the limited area of disturbance associated with decommissioning activities; therefore, the impact would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant with Mitigation. The City of Carlsbad OSCE goals, objective, and policy, as described in Section 3.4.2 Regulatory Setting, seek(s) to preserve natural resources by protecting fish, wildlife, and vegetation habitats. As described above under item a), the Project has the potential to adversely impact grunion and significantly impact other sensitive marine wildlife. To avoid or reduce potential impacts to fish as wildlife to less than significant, MM BIO-1 through MM BIO-7 would be implemented, which would also meet the intent of the relevant OSCE goals, objective, and policy.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

No Impact. As described above, the EPS is located within the boundary of the City of Carlsbad’s HMP, which guides local implementation of the MHCP. The MHCP focuses on habitat preservation and enhancement for the California gnatcatcher, Agua Hedionda Lagoon, and adjacent areas to the east as core habitat area; however, Project activities would not impact the Agua Hedionda Lagoon or adjacent areas that
the MHCP designates as core habitat. Since the Project does not conflict with local, regional, or State habitat conservation plan provisions, there would be no impact.

### 3.4.4 Mitigation Summary

Implementation of the following mitigation measure(s) would reduce the potential for Project-related impacts to biological resources to less than significant.

- MM BIO-1: Marine Wildlife Contingency Plan (MWCP).
- MM BIO-4: Marine Wildlife Monitoring During Sound Source Characterization and Dynamic Pipe Ramming (DPR).
- MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris Removal.
- MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- MM BIO-7: Oil Spill Response Plan (OSRP).
- MM BIO-8: Flush Fuel Oil Submarine Pipeline.

The following measures are proposed by the Applicant to further reduce less than significant impacts to grunion spawning and transfer of NAS.

- APM BIO-1a: Grunion Avoidance.
- APM BIO-1b: Grunion Surveys and Avoidance.
- APM BIO-2: Prevent Introduction of Non-Native Aquatic Species (NAS).
3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

<table>
<thead>
<tr>
<th>CULTURAL RESOURCES AND PALEONTOLOGICAL RESOURCES - Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☑</td>
</tr>
<tr>
<td>b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>c) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>d) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>e) Disturb any human remains, including those interred outside of formal cemeteries?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

3.5.1 Environmental Setting

3.5.1.1 Archaeological Resources

The general Project area is sensitive for archaeological resources. A records search conducted in January 2013, by the South Coast Information Center (SCIC) using a 0.25-mile radius around the Project site, identified one archaeological site, CS-SDI-16885. This site is located east of the beach valve pit (also referred to as “vault” by Conejo Archaeological Consultants [Conejo] in this section) and outside the footprint of the proposed work. As stated in a January 21, 2013, letter report prepared by Conejo (see Appendix K):

CA-SDI is a small, sparse scatter of artifacts with shell on a bluff overlooking the western portion of Agua Hedionda lagoon. The site was first recorded by Gallegos & Associates in 2003 (James et al 2003). Tift (2004) indicates that the site is probably associated with CA-SDI-6751.

As reported by Smallwood (2005, as described in Conejo 2013 [Appendix K]):

Historic photographs of the EPS [Encina Power Station] revealed that prior to its construction the entire property had been graded, some areas were leveled and filled, a stream was channelized, the lagoon was dredged, and a large underground intake was constructed to bring water into the plant from the ocean.... In short, the entire EPS property has received a high level of disturbance. Geological borings in the area revealed that the soils at Site CA-SDI-16885 are composed of reddish
brown sandy terrace material that has been mechanically re-deposited as fill to a depth of approximately 2.5 to 10 feet (ibid.). In light of the information obtained from historic photographs and the results of the geological borings, it is apparent that these surface artifacts were mechanically re-deposited during the previous grading that occurred on the EPS property, beginning in the 1950s. Artifacts may be present subsurface in the fill soils at this location, but it has been determined that the artifacts observed at the site do not exhibit any contextual integrity. However, additional artifacts or archaeological deposits may exist subsurface in undisturbed soils near Fuel Oil Tanks #2 and #3.

The Agua Hedionda lagoon lies in an area where, at least during the Late Prehistoric and Protohistoric periods, the traditional territories of two Native American groups, the Luiseno and the Kumeyaay, may have overlapped.... In any case, the site is indicative of prehistoric occupation, food processing activities, and subsistence strategies associated with the lagoon and terrace resources.

The exact location of the second site, CA-SDI-210, is unclear. A review of Google Earth’s aerial coverage of the EPS indicated that CA-SDI-210’s estimated site location was subject to extensive grading during construction of the existing plant. As a result, buried intact deposits associated with CA-SDI-210 may also occur within the EPS.

According to Conejo, eight archaeological investigations have been conducted within a 0.25-mile radius of the Project site, three of which included sections of the on-land portion of the Project area consisting of the beach and Carlsbad Boulevard. These archaeological investigations were conducted by Byrd and O’Neill in 2002, Polan in 1981, and Woodward and Stammerjohan in 1985. Guerrero, Stropes, and Gallegos’s archaeological investigation in 2004 was conducted within the EPS, but does not include the current Project site.

3.5.1.2 Tribal Cultural Resources

Native American Heritage Commission

The Native American Heritage Commission (NAHC) searched its Sacred Lands File for Native American cultural sites and found no occurrences within 0.5 mile of the Project site (NAHC letter to Conejo dated January 11, 2013; see Appendix K). The NAHC also noted that the area around Agua Hedionda Lagoon is very culturally sensitive and that a known underwater village is located several miles north of the site.

Native American Representatives

The NAHC provided Conejo with a list of Native American representatives who could potentially provide important information on cultural sites near the Project site. On January 30, 2013, Conejo contacted the Native American representatives on the NAHC
list; to date, three responses have been received (see Appendix K for Native American communication records). In a February 20, 2013, letter to Conejo, the Pala Tribal Historic Preservation Office indicated that the MOT is not within the recognized tribal Traditional Use Area and requested to be kept informed of documentation of cultural sites and other Project information. A representative of the San Luis Rey Band of Mission Indians also contacted Conejo via telephone. The representative explained that several Native American sites are located around the Agua Hedionda Lagoon, stated that they have seen scattered marine shell within the power plant, and opined that, given the area’s archaeological sensitivity, a Native American should monitor any earth disturbances associated with the Project even in previously disturbed onshore areas. In a March 5, 2013, letter to Conejo, the Rincon Band of Luiseno Indians communicated its concerns regarding the potential for cultural resource finds within the Luiseno Aboriginal Territory, in addition to their desire for a Native American to monitor any archaeological surveys or ground disturbance at the Project site.

3.5.1.3 Historical Resources

Federal, State, and Local Historical Listings

As reported by Conejo, the National Register of Historic Places (NRHP) listings include no properties within or adjacent to the Project site. No California Historical Landmarks, California Register Historical Properties, or California Points of Historical Interest are located within or adjacent to the Project site. Additionally, no historical landmarks designated by the City of Carlsbad are located within or adjacent to the Project site.

CSLC’s Shipwreck Database

Conejo (2013) conducted a review of the SCIC’s shipwreck database, which identified no shipwrecks within a 0.25-mile radius of the Project site. The CSLC Shipwreck Database lists 67 shipwrecks for San Diego County and the closest shipwrecks to the EPS are listed in Table 3.5-1 and shown in Figure 3.5-1 (CSLC 2013).

<table>
<thead>
<tr>
<th>Ship Name</th>
<th>George W. Hind</th>
<th>Glen Mayne</th>
<th>Ardor</th>
<th>Nomad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Bark</td>
<td>Barge</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Year Built</td>
<td>1919</td>
<td>1918</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Year Sunk</td>
<td>1936</td>
<td>1939</td>
<td>1945</td>
<td>1943</td>
</tr>
<tr>
<td>Cause</td>
<td>Foundered</td>
<td>Foundered</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Tonnage</td>
<td>1389</td>
<td>431</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Approximate Distance from EPS</td>
<td>2 miles, NW</td>
<td>0.6 mile, south</td>
<td>1.2 miles, NNW</td>
<td>1.2 miles, NNW</td>
</tr>
</tbody>
</table>
Figure 3.5-1. CSLC Shipwreck Database Map
Cultural Resources Evaluation & Department of Parks and Recreation Primary Record 37-032953.

The MOT was evaluated by Laura S. White, M. A., Robert White, and David Van Horn Ph. D., of John Minch and Associates, Inc. in February of 2013 for significance using both NRHP and CEQA criteria (provided in Appendix K). The findings of the evaluation were reported in “A Cultural Resource Evaluation of the Cabrillo Power I LLC Encina Site Offshore Marine Oil Terminal, Carlsbad, San Diego County” and on the appropriate Department of Parks and Recreation 523 series forms submitted to the SCIC at San Diego State University (Appendix K). The MOT was assigned Primary Record Number 37-032953, and a summary of the findings are as follows.

As for Criterion A of the NRHP, the MOT is not associated with any event important in the history of United States. Terminals such as these were common for water-cooled, coastal power plants that were originally designed to burn fuel oil to generate electricity. They are currently utilized in the off-loading of crude oil for refineries along the southern California coast. That is, submarine pipelines are not unique in their role of conveying petroleum from ships/barges to land installations or into land-based distribution networks. As for Criterion B, the MOT is not associated with the lives of any individual important to national history. As for Criterion C, the pipeline itself comprises prefabricated sections of concrete jacketed steel pipe. The pipe is of robust construction but of standard design. The mooring anchors are of standard design (Danforth) and are modern. The vault and tunnel are devoid of any significant architectural features. The rip-rap jetty is also ubiquitous in nature. None of the components of the MOT are considered the work of a master and there is no evidence that unique methods or materials were utilized in their construction. As per Criterion D, given the utilitarian uses of MOT, it is highly unlikely that it has the potential to yield additional information pertinent to national history. Consequently, the MOT, including the eight modern anchors that are less than 50 years of age, does not appear significant pursuant to NHRP criteria.

3.5.1.4 Paleontological Resources

The following information is from the California Energy Commission (CEC) Final Staff Assessment (CEC 2009) for the CECP. Given the proximate location of the Project site to the CECP site (which is within the northeast section of the EPS), similar paleontological resources (described below) are expected to be found.

Pleistocene age paralic deposits, which represent all soils mapped at the surface of the CECP power plant site and the linear route, are generally considered to have a high paleontological sensitivity. However, all fossils in the San Diego Natural History Museum (SDNHM) collection from terrace sediments in the area were recovered from units on older wave-cut benches at higher elevations inland from the site. The
Eocene age Santiago Formation, which has been mapped in the floor of the current
tank farm, is also highly sensitive. Furthermore, fossil remains have been
documented from the nearby Carlsbad State Beach. The nearest documented fossil
locality is approximately 500 to 750 feet south of the ocean-water pipeline intake and
discharge locations.

Many paleontological sites are documented within 3 miles of the CECP Project area.
The SDNHM collection contains specimens from 113 localities, including 30 from
Pleistocene paralic deposits and 58 from the Santiago Formation. The Quaternary
fossils consist of marine invertebrates, such as worms, bryozoans, foraminifers, tusk
shells, ostracods, barnacles, crabs, snails, clams, oysters, pectens, sand dollars,
and sea urchins, as well as continental vertebrates, such as proboscidens
(mammoths and elephants), turkeys, rodents, tapirs, horses, camels, deer, and
bison. The specimens from the Santiago Formation were collected from marine,
lagoonal, estuarine and fluvial siltstones and sandstones. The SDNHM collection
also includes specimens from two sites at Carlsbad State Beach. The localities are
approximately 1,600 feet and 4,000 feet southwest of the 23-acre CECP site, and
have produced vertebrate fossils of terrestrial mammals, including oreodonts (now
extinct plant-eaters distantly related to pigs, hogs, peccaries and hippopotamuses).
The nearest of these fossil localities is approximately 500 to 750 feet south of the
ocean-water pipeline intake and discharge locations. The reported source from
which the fossils were recovered is fluvial sandstone of the Oligocene-age Sespe or
Vaqueros Formations.

Although the age and geologic unit designation is in disagreement with previous
geologic mapping in the area, the Tertiary sediments hosting the vertebrate fossils is
considered to be equivalent to the marine deposits (mapped as Santiago Formation)
that underlie Quaternary terrace deposits at the CECP site.

Marine invertebrate fossils, including mollusks, crustaceans and echinoids, and
marine vertebrates, including sharks, rays and bony fish, have been recovered by
the San Bernardino County Museum from Pleistocene terrace deposits. No fossil
locality is within one mile of the CECP site, however. Terrestrial mammal remains,
including camel, horse and mammoth, have been recovered from wave-cut bench
sediments that are older than those on the power plant site. The Natural History
Museum of Los Angeles County collection does not contain vertebrate fossil remains
from the Carlsbad area. The museum does consider the potential for encountering
significant vertebrate fossils in Quaternary terrace deposits near the surface and in
older sediments in deeper excavations to be low and high, respectively. The fossil
records website maintained by the University of California - Museum of Paleontology
indicates that several gastropod specimens of Quaternary age have been recovered
from the Carlsbad and Agua Hedionda lagoon areas.
3.5.2 Regulatory Setting

3.5.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.5-2.

Table 3.5-2. Laws, Regulations, and Policies (Cultural and Paleontological)

<table>
<thead>
<tr>
<th>U.S.</th>
<th>Law/Act</th>
<th>Description</th>
</tr>
</thead>
</table>
| U.S. | Archaeological and Historic Preservation Act (AHPA)                    | The AHPA provides for the preservation of historical and archaeological data that might be irreparably lost or destroyed as a result of (1) flooding, the building of access roads, the erection of workmen's communities, the relocation of railroads and highways, and other alterations of terrain caused by the construction of a dam by an agency of the U.S. or by any private person or corporation holding a license issued by any such agency; or (2) any alteration of the terrain caused as a result of a Federal construction project or federally licensed project, activity, or program. This Act requires Federal agencies to notify the Secretary of the Interior when they find that any federally permitted activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. The AHPA built upon the national policy, set out in the Historic Sites Act of 1935, "...to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance...."

| U.S. | Archaeological Resources Protection Act (ARPA)                         | The ARPA states that archaeological resources on public or Indian lands are an accessible and irreplaceable part of the nation's heritage and:  
• Establishes protection for archaeological resources to prevent loss and destruction due to uncontrolled excavations and pillaging;  
• Encourages increased cooperation and exchange of information between government authorities, the professional archaeological community, and private individuals having collections of archaeological resources prior to the enactment of this Act;  
• Establishes permit procedures to permit excavation or removal of archaeological resources (and associated activities) located on public or Indian land; and  
• Defines excavation, removal, damage, or other alteration or defacing of archaeological resources as a "prohibited act" and provides for criminal and monetary rewards to be paid to individuals furnishing information leading to the finding of a civil violation or conviction of a criminal violator.  
ARPA has both enforcement and permitting components. The enforcement provision provides for the imposition of both criminal and civil penalties against violators of the Act. The ARPA's permitting component allows for recovery of certain artifacts consistent with the standards and requirements of the National Park Service (NPS) Federal Archaeology Program. |

| U.S. | National Historic Preservation Act (NHPA) (16 USC 470 et seq.)          | This applies only to Federal undertakings. Archaeological resources are protected through the NHPA, as amended, and its implementing regulation, Protection of Historic Properties (36 CFR 800), the AHPA, and the ARPA. This Act presents a general policy of supporting and encouraging the preservation of prehistoric and historic resources for present and future generations by directing Federal agencies to assume responsibility for considering the historic resources in their activities. The NHPA requires that Federal agencies consider and evaluate the effect that Federal projects may have on historic properties under their jurisdiction. A Traditional Cultural Property (TCP) is one that is eligible for the National Register of Historic Places (NRHP) because of its association with the cultural practices or beliefs of a living community. The State implements the |
### Table 3.5-2. Laws, Regulations, and Policies (Cultural and Paleontological)

<table>
<thead>
<tr>
<th>U.S.</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Executive Order 13007, “Indian Sacred Sites,” requires that Federal agencies with legal or administrative responsibility for management of Federal lands, “to the extent practicable permitted by law, and not clearly inconsistent with essential agency functions, to: (1) accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners; and (2) avoid adversely affecting the physical integrity of such sacred sites.”</td>
<td></td>
</tr>
<tr>
<td>• Executive Order 13158 requires Federal agencies to (1) identify actions that affect natural or cultural resources that are within a Marine Protected Area (MPA); and (2) in taking such actions, to avoid harm to the natural and cultural resources that are protected by a MPA.</td>
<td></td>
</tr>
<tr>
<td>• NPS Abandoned Shipwreck Act of 1987 (43 USC 2101–2106). Under this Act, states have the responsibility for management of living and nonliving resources in State waters and submerged lands, including certain abandoned shipwrecks. The NPS has issued guidelines that are intended to: maximize the enhancement of cultural resources; foster a partnership among sport divers, fishermen, archeologists, sailors, and other interests to manage shipwreck resources of the states and the U.S.; facilitate access and utilization by recreational interests; and recognize the interests of individuals and groups engaged in shipwreck discovery and salvage. Specific provisions of the Act’s guidelines include procedures for locating and identifying shipwrecks, methods for determining which shipwrecks are historic, and preservation and long-term management of historic shipwrecks.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CA</th>
<th>CEQA (Pub. Resources Code, § 21000 et seq.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As the CEQA lead agency, the CSLC is responsible for complying with all provisions of the CEQA and State CEQA Guidelines that relate to “historical resources.” A historical resource includes: (1) a resource listed in, or eligible for listing in, the California Register of Historic Resources (CRHR); (2) a resource included in a local register of historical or identified as significant in an historical resource surveys; and (3) any resource that a lead agency determines to be historically significant for the purposes of CEQA, when supported by substantial evidence in light of the whole record. The CRHR was created to identify resources deemed worthy of preservation on a State level and was modeled closely after the National Register. The criteria, which are nearly identical to those of the National Register but focus on resources of statewide significance (see State CEQA Guidelines § 15064.5, subd. (a)(3)), are defined as any resource that meets any of the following criteria: (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; (2) Is associated with lives of persons important in our past; (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (4) Has yielded, or may be likely to yield, information important in prehistory or history. Properties listed, or formally designated as eligible for listing, on the National Register are automatically listed on the CRHR, as are certain State Landmarks and Points of Interest. A lead agency is not precluded from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1, subdivision (j), or 5024.1 (State CEQA Guidelines § 15064.5, subd. (a)(4)).</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.5-2. Laws, Regulations, and Policies (Cultural and Paleontological)

<table>
<thead>
<tr>
<th>CA:</th>
<th>Coastal Act Chapter 3 policies (see also Table 1-2)</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA:</td>
<td>Assembly Bill (AB) 52 (Gatto, Stats. 2014, ch. 532)</td>
<td>AB 52 (effective July 1, 2015) adds sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to CEQA, relating to consultation with California Native American tribes, consideration of tribal cultural resources, and confidentiality. The definition of tribal cultural resources considers tribal cultural values in addition to scientific and archaeological values when determining impacts and mitigation. AB 52 provides procedural and substantive requirements for lead agency consultation with California Native American tribes and consideration of effects on tribal cultural resources, as well as examples of mitigation measures to avoid or minimize impacts to tribal cultural resources. AB 52 establishes that if a project may cause a substantial adverse change in the significance of a tribal cultural resource, that project may have a significant effect on the environment. Lead agencies must avoid damaging effects to tribal cultural resources, when feasible, and shall keep information submitted by tribes confidential.</td>
</tr>
<tr>
<td>CA:</td>
<td>Public Resources Code section 5097.98</td>
<td>This code states protocol for notifying the most likely descendent from the deceased if human remains are determined to be Native American in origin. It also provides mandated measures for appropriate treatment and disposition of exhumed remains.</td>
</tr>
<tr>
<td>CA:</td>
<td>Health and Safety Code section 7050.5</td>
<td>This code states that if human remains are exposed during construction, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.998. The Coroner has 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are determined to be of Native American descent. The NAHC will contact most likely descendants, who may recommend how to proceed.</td>
</tr>
</tbody>
</table>

3.5.2.2 Local

The City of Carlsbad (2006) General Plan OSCE contains the following historical, cultural, and special resource protection goals, objectives, and policies relevant to onshore Project activities.

- Goal A.1: A city in which its existing and continuing heritage is protected, preserved, recognized and enhanced.
- Goal A.5: A city that preserves, where possible, historic, cultural, archeological, paleontological, and educational resources.
- Objective B.1: To encourage property owners to utilize all available incentives for the preservation of historic resources.
- Objective B.3: To preserve areas of unique scenic, historical, archeological, paleontological and cultural value, and where possible, provide public access to these areas.
- Objective B.6: To minimize environmental impacts to sensitive resources within the City.
3.5.3 Impact Analysis

a. **Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?**

**No Impact.** Project implementation would not impact known shipwrecks or other known historically significant sites. Although the EPS MOT was built in 1953 and is over 60 years old, as indicated above, it does not meet the criteria for listing in the NRHP or California Register of Historic Resources. Therefore, the Project would not impact historical resources.

b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?**

**Less than Significant with Mitigation.** The EPS is located within a general area considered sensitive for archaeological resources, and onshore decommissioning work may have the potential to impact known (CA-SDI-210) or unknown archaeological resources if earth disturbances extend outside of the previously disturbed construction areas, vertically or horizontally.

To ensure that potential impacts to archaeological resources are avoided or mitigated to less than significant, the following measures would be implemented.

**MM CUL-1: Cultural Resource Training.** A pre-construction meeting, inclusive of agency personnel, shall be organized to educate onsite construction personnel as to the sensitivity of archaeological and tribal cultural resources in the area. If agency personnel cannot attend, the meeting shall be held and documentation of the meeting shall be submitted to those agencies. The Applicant’s personnel shall instruct all construction and Project personnel to avoid removing cultural materials from the Project site. Evidence of compliance with this mitigation measure shall be documented, and provided to California State Lands Commission staff, prior to onshore work.

**MM CUL-2: Archaeological and Tribal Cultural Resource Monitoring.** All construction will be confined to previously disturbed areas within the beach valve pit if feasible; however, to ensure no previously unknown archaeological or tribal cultural resources are unintentionally damaged, all excavation shall be monitored by a professional archaeologist and a Native American representative, who shall
have the authority to temporarily halt or redirect Project construction in the event
that potentially significant cultural resources are exposed.

**MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal**
**Cultural Resources are Discovered.** In the event that potentially significant
archaeological or tribal cultural resources are discovered any time during
construction, all earth disturbing work within the vicinity of the discovery shall be
temporarily suspended or redirected until a professional archaeologist and a
representative from the culturally affiliated California Native American tribe(s)
(tribal representative) as determined by the Native American Heritage
Commission have evaluated the nature and significance of the discovery. In the
event that a potentially significant archaeological or tribal cultural resource is
discovered, Cabrillo Power I LLC, the California State Lands Commission
(CSLC), and any local, State or Federal agency with approval or permitting
authority over the Project that has requested/required such notification shall be
notified.

Impacts to previously unknown significant archaeological or tribal cultural
resources shall be avoided through preservation in place if feasible. Damaging
effects to tribal cultural resources will be avoided or minimized following the
measures identified in Public Resources Code section 21084.3, subdivision (b), if
feasible, unless other measures are mutually agreed to by the lead archaeologist
and tribal representative that would be as or more effective.

If the lead archaeologist and tribal representative(s) mutually agree that
damaging effects to tribal cultural resources will be avoided or minimized, then
work in the area may resume. If the lead archaeologist and tribal
representative(s) do not agree, the CSLC’s tribal liaison will attempt to resolve
the issue. If the tribal liaison cannot resolve the issue, the tribal liaison will submit
the matter to the CSLC’s Executive Officer for resolution. A Native American
representative shall monitor any mitigation work associated with Native American
cultural material.

**c) Cause a substantial adverse change in the significance of a tribal cultural**
**resource as defined in Public Resources Code section 21074?**

**Less than Significant with Mitigation.** As discussed in Section 3.5.1.2, Tribal Cultural
Resources:

- A Sacred Lands File search conducted by the NAHC did not identify Native
  American cultural places or properties within 0.5 mile of the Project footprint;
- The NAHC noted that the Project site is located several miles north of a known
  underwater village and that the area around the Agua Hedionda Lagoon to the
  north of the Project site is considered very culturally sensitive; and
- The NAHC provided a contact list of Native American representatives to Conejo
to gather information on cultural sites near the Project site (see Appendix K).
Conejo contacted the Native American representatives on January 30, 2013, and received three responses. These responses indicated that although the MOT is not within a recognized tribal Traditional Use Area, there are several Native American sites located around Agua Hedionda Lagoon, and scattered marine shell debris has been seen within the power plant. Given the potential area’s archaeological sensitivity, it was recommended that a Native American representative monitor any earth disturbances associated with the Project, even in previously disturbed onshore areas. Additionally, the Native American representatives requested to be kept informed of any documented cultural resources at the Project site.

AB 52 made changes to CEQA regarding tribal cultural resources and consultation with California Native American Tribes who have previously requested to be notified of projects in the geographic area traditionally and culturally affiliated with that tribe (see Table 3.5-2). Although CSLC staff has not received written requests for notification, staff notified the Native American representatives on the NAHC contact list on October 2, 2015, to engage with those tribes proactively to ensure they have the opportunity to provide meaningful input on the Project’s potential effects (see Appendix K).

To ensure that potential impacts to tribal cultural resources are avoided or mitigated to less than significant, all onsite construction personnel will be educated on the potential for and sensitivity of tribal cultural resources in the area (MM CUL-1). Additionally, all construction will be confined to previously disturbed areas within the beach valve pit if feasible; however, to ensure no previously unknown tribal cultural resources are unintentionally damaged, all excavation shall be monitored by a professional archaeologist and a Native American representative who shall have the authority to temporarily halt or redirect Project construction in the event that potentially significant tribal cultural resources are exposed (MM CUL-2). In the event tribal cultural resources are discovered, MM CUL-3 will be implemented and a Native American representative will monitor any mitigation work associated with Native American cultural material. Therefore, with the implementation of MM CUL-1, MM CUL-2, and MM CUL-3, potential impacts to tribal cultural resources at the Project site will be avoided or reduced to less than significant.

**d) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less than Significant with Mitigation.** Due to the high paleontological sensitivity in the area, any Project activities requiring excavation of previously undisturbed sedimentary formations onshore would have a potential for impacting paleontological resources.

Potential impacts to paleontological resources can be avoided by avoiding disturbance of previously undisturbed native soils as identified above in MM CUL-2. If impacts
cannot be fully mitigated with MM CUL-2, the following measure would be implemented to avoid or minimize potential impacts to less than significant.

**MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan.** A qualified paleontologist shall be retained to evaluate the onshore activities and develop a Paleontological Resource Evaluation and Mitigation Plan if Project activities extend into previously undisturbed sedimentary formations. The mitigation plan shall include construction monitoring and collection and archiving of any paleontological finds.

e) **Disturb any human remains, including those interred outside of formal cemeteries?**

**Less than Significant with Mitigation.** The Project is not expected to impact human burials; however, in the unanticipated event that burials are encountered they must be managed in accordance with state law.

To ensure that the potential impacts to any unanticipated burials encountered during Project activities are avoided or mitigated to less than significant, the following measure would be implemented.

**MM CUL-5: Proper Disposition of Human Remains.** If human remains are unearthed, State Health and Safety Code section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission. Cabrillo Power I LLC and California State Lands Commission staff shall be notified immediately of the discovery.

### 3.5.4 Mitigation Summary

Implementation of the following mitigation measure(s) would reduce the potential for Project-related impacts to cultural and paleontological resources to less than significant.

- MM CUL-1: Cultural Resource Training.
- MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal Cultural Resources are Discovered.
- MM CUL-5: Proper Disposition of Human Remains.
1 3.6 GEOLOGY AND SOILS

<table>
<thead>
<tr>
<th>GEOLOGY AND SOILS – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:</td>
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<tr>
<td>i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.</td>
<td>☐ ☐ ☐ ☒</td>
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<tr>
<td>ii) Strong seismic ground shaking?</td>
<td>☐ ☐ ☐ ☒</td>
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<tr>
<td>iii) Seismic-related ground failure, including liquefaction?</td>
<td>☐ ☐ ☐ ☒</td>
<td></td>
<td></td>
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<tr>
<td>iv) Landslides?</td>
<td>☐ ☐ ☐ ☒</td>
<td></td>
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<tr>
<td>b) Result in substantial soil erosion or the loss of topsoil?</td>
<td>☐ ☐ ☒ ☐</td>
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<tr>
<td>c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?</td>
<td>☐ ☐ ☐ ☒</td>
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<tr>
<td>d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?</td>
<td>☐ ☐ ☐ ☒</td>
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<tr>
<td>e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?</td>
<td>☐ ☐ ☐ ☒</td>
<td></td>
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</tbody>
</table>

2 3.6.1 Environmental Setting

3 3.6.1.1 Regional Setting

4 Geology

The Project area is within the Peninsular Ranges geomorphic province, which is characterized by major northwest-striking, right-lateral strike-slip faults (CEC 2009). The Rose Canyon Fault (part of the Newport-Inglewood-Rose Canyon Fault Zone mapped approximately 2 miles southwest of the EPS) and Elsinore Fault are the closest major offshore and onshore faults, respectively. Since the Project area is in an active geologic area, it could be subject to intense levels of earthquake-related ground shaking.
The geology of the Peninsular Ranges is similar to the Sierra Nevada Range. Mesozoic
granitic and lesser gabbroic and metamorphic rocks form the core of the geomorphic
province (CEC 2009). The nearest mapped Mesozoic rocks are approximately 2.5 miles
east of the EPS site. Relatively thin Tertiary and Quaternary sediments deposited in
marine and transitional environments overlie the crystalline basement rocks. Continental
sediments are locally common as well, particularly in modern drainages. Post-Mesozoic
rocks are prevalent along the coast and extend 5 to 8 miles inland in the vicinity of
Carlsbad. The inland sediments reflect periods of higher sea levels in the past, as well
as uplift due to tectonic activity.

According to CEC (2009), fill from grading of the EPS site covers Quaternary and
Tertiary sediments that were deposited in marine and transitional environments.
Quaternary age paralic sediments immediately underlie the artificial fill. These deposits
represent transitional facies associated with a series of wave-cut terraces. The oldest
paralic deposits are present to the east and uphill from the coastline. As sea level fell in
response to decreases in ocean water volume and/or temperature and uplift associated
with regional and local tectonics, paralic sediments were deposited on progressively
lower wave-cut terraces. The most recent terrace deposits associated with a stranded
bench are represented by the materials present at the EPS. Terraces were cut into
middle Eocene deposits of the Santiago Formation in the Carlsbad area, so Quaternary
sediments are in unconformable contact with Tertiary sediments. The marine arkosic
sandstones were derived from granitic sources to the east.

Soils

The current Natural Resources Conservation Service (2013) mapping for San Diego
County, as accessed via the Web Soil Survey on January 21, 2013, identifies soils in
the Project area as Cr – Coastal beaches (nearshore and shoreline), TeF – Terrace
escarpments (part of the shoreline), and MIC – Marina loamy coarse sand (immediately
inland from the shore). Subsurface exploration conducted by Geo-Logic Associates for
the Poseidon Desalination Plant site, which is located adjacent to the EPS, is underlain
by artificial fill and very light brown to green-brown silty sandstone interbedded with
siltstone and mapped as mid-Eocene Santiago Formation. It is not known if the portion
of the EPS where the beach valve pit is located received fill prior to construction.

Groundwater

Groundwater beneath the EPS is generally brackish and is designated as having no
beneficial uses (CEC 2009). Due to seasonal and tidal influences, groundwater levels
fluctuate between 14 feet and 10 feet above mean sea level. As reported in the EIR for
the Poseidon Desalination Plant (City of Carlsbad 2005), the groundwater table at the
site was encountered during drilling at a depth of 20.8 to 28.9 feet below the existing
ground surface (an approximate elevation of 1.1 to 14.2 feet above mean sea level).
Topography

The topography of the EPS site is moderate to flat and generally slopes west toward Carlsbad Boulevard and the Pacific Ocean.

3.6.1.2 Offshore Conditions

Regional Sediment Movement

Offshore sediment transport via movement of sand suspended in the water column generally moves parallel to the San Diego coastline (CSLC 2005). Longshore transport in the Project vicinity is 80 percent to the south and 20 percent to the north when averaged for the year; in winter, longshore transport from north to south is more dominant. Net annual movement of sand is approximately 310,000 cubic yards of sand per year toward the south. Jetties constructed along the coast can interrupt both the northward and southward movement of sand; because southward longshore transport dominates, sand tends to accumulate on beaches on the north side of the jetties and tends to be eroded from beaches on the south side of the jetties (CSLC 2005). Artificial replenishment of beaches in the Project area has focused on three beaches—the beach located north of Agua Hedionda Lagoon (referred to as the North Beach), the beach between the inlet and outlet of the lagoon (Middle Beach), and the beach south of the discharge channel (South Beach)—to partially offset the erosion caused by the existing jetties at the inlet and discharge channels of the Agua Hedionda Lagoon.

About 400 to 500 feet south of the Agua Hedionda Lagoon discharge jetty is the riprap covering the fuel oil submarine pipeline, also known as the South Beach Groin. In order to excavate and remove the pipeline, this riprap groin would need to be temporarily removed. To determine potential near-field effects of removing the South Beach Groin, Jenkins (2013) conducted a shoreline evolution analysis (see Appendix L) using computer simulations from a peer-reviewed Coastal Evolution Model and reached the following conclusions from simulations using the model to predict shoreline evolution over 20-year long historic periods of waves, tides, currents, and dredge disposal.

- Removal of the South Beach Groin would have no apparent effect on shoreline change over the short-term. Only after 5 years was there a discernible difference in shoreline change in the absence of the South Beach Groin, which was localized to South Beach where removal of the groin caused a small amount of shoreline retreat on the order of 6 feet.

- Removal of the South Beach Groin would have a cumulative impact, generally erosional in nature, on the shoreline over the long-term (10 to 20 years). The largest erosional impacts would occur at South Beach, where beach widths would be locally reduced by as much as 17 feet, 20 years after the groin is removed. Removal of the South Beach Groin would also reduce the median
retention time of dredged sands placed on South Beach by 1 month; longer retention times (18 to 20 months) are possible, but dependent on the South Beach Groin remaining in its present condition and location. Since dredging and beach disposal of the dredged sands typically occurs every 2 years, an average loss of 1 month of retention time adds up to a significant loss of beach sand volume over many years for the North Beach/Middle Beach/South Beach back-passing, sand re-cycling system.

Although the long-term effects of removing the groin on the beach bluff or public infrastructure, such as the sea wall in the Project area, was not modeled, it is possible that under storm conditions bluff erosion and erosion in the vicinity of the sea wall may occur based upon the conclusion that the beach’s width would be reduced by as much as 17 feet, 20 years after the removal of the groin.

**Project Area Seafloor Conditions**

In 2005, Divecon recorded underwater video during an overhaul of the MOT, which was later reviewed by Padre Associates, Inc. staff to evaluate the seafloor conditions in the Project area. Based on the video footage, the fuel oil submarine pipeline appears to be on soft bottom substrate closer to shore and buried about halfway in the ocean sediment. In Merkel & Associates, Inc.’s February 2013 marine biological survey (see Appendix I), portions of the pipeline and some of the anchors and chains were on the surface of the seafloor; however, the condition of the MOT fuel oil submarine pipeline and mooring anchors with respect to their location on or beneath sediments or rock varies depending upon the time of year and other factors affecting the longshore transport of marine sand. Based on the Merkel & Associates, Inc. (2013b) study and Fugro’s bathymetric and geophysical survey conducted in the spring of 2013, low relief rocky substrate is present in the nearshore/shallow subtidal area immediately south of the pipeline corridor. The seafloor topography between the shore and the tanker moorings slopes moderately westward to an ocean depth of -100 feet, as shown on the EPS MOT drawing (Cabrillo Power I LLC 2008). Beyond the -100 water depth there is a steep drop in the offshore topography.

**3.6.2 Regulatory Setting**

3.6.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.6-1.
Table 3.6-1. Laws, Regulations, and Policies (Geology and Soils)

<table>
<thead>
<tr>
<th>CA</th>
<th>Law/Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alquist-Priolo Earthquake Fault Zoning Act (Pub. Resources Code, §§ 2621-2630)</td>
<td>This Act requires that “sufficiently active” and “well-defined” earthquake fault zones be delineated by the State Geologist and prohibits locating structures for human occupancy across the trace of an active fault.</td>
<td></td>
</tr>
<tr>
<td>California Building Code (CBC) (Cal. Code Regs., tit. 23)</td>
<td>The CBC contains requirements related to excavation, grading, and construction of pipelines alongside existing structures. A grading permit is required if more than 50 cubic yards of soil are moved. Sections 3301.2 and 3301.3 contain provisions requiring protection of adjacent properties during excavations and require a 10-day written notice and access agreements with adjacent property owners.</td>
<td></td>
</tr>
<tr>
<td>California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690 and following as Division 2, Chapter 7.8)</td>
<td>This Act and the Seismic Hazards Mapping Regulations (Cal. Code Regs., tit. 14, Div. 2, Ch. 8, Art. 10) are designed to protect the public from the effects of strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. The Act requires that site-specific geotechnical investigations be conducted identifying the hazard and formulating mitigation measures prior to permitting most developments designed for human occupancy. Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California (California Geological Survey 2008), constitutes guidelines for evaluating seismic hazards other than surface fault rupture and for recommending mitigation measures as required by section 2695, subdivision (a).</td>
<td></td>
</tr>
</tbody>
</table>
| Coastal Act Chapter 3 policies (see also Table 1-2) | Coastal Act policies applicable to this issue area are:  
- Section 30253 requires, in part, that: New development shall: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (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.  
- Section 30243 states in part: The long-term productivity of soils and timberlands shall be protected…. |

1. 3.6.1.2 Local

The City of Carlsbad (2006) General Plan OSCE contains the following geology and soils-related objective and policies relevant to onshore Project activities.

- Objective B.2: To protect public health and safety by preserving natural and man-made hazard areas as open space and taking special precautionary measures to protect the public safety where development is possible and permitted.
- Policy C.8: Require a city permit for any grading, grubbing, or clearing of vegetation in undeveloped areas, with appropriate penalties for violations.
- Policy C.12: Require that grading be accomplished in a manner that will maintain the appearance of natural hillsides and other landforms wherever possible.
- Policy C.13: Require that soil reports, plans for erosion and sediment control measures and provisions of maintenance responsibilities.
3.6.3 Impact Analysis

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. As reported in the City of Carlsbad (undated[a]) General Plan Public Safety Element, there are no known active or potentially active faults within city limits, and the closest known active fault is the Rose Canyon Fault Zone, several miles offshore. Additionally, no risk of loss of life or property in a seismic event would result from the Project, which involves decommissioning of infrastructure and does not include the construction of any buildings or structures that would potentially be damaged or cause injury or death. Therefore, this Project is not likely to expose people or structures to potential substantial adverse effects due to the rupture of a known earthquake fault.

ii) Strong seismic ground shaking?

No Impact. There is the potential for Project infrastructure and workers to be subjected to seismic ground shaking if a significant earthquake occurred in the area during Project implementation. However, decommissioning activities would not create adverse effects to people or structures related to ground shaking; therefore, no impact would occur.

iii) Seismic-related ground failure, including liquefaction?

No Impact. As stated in the City of Carlsbad (undated[a]) General Plan Public Safety Element, portions of the City underlain by deep, soft, saturated soils may be susceptible to liquefaction, lurch cracking, lateral spreading, and local subsidence. However, the Project is limited to the removal and in-place abandonment of existing onshore and offshore infrastructure. Infrastructure abandoned in place would be filled with earth or cement for stabilization (e.g., the Project includes filling the underpass conduit and rectangular horizontal shafts with cement slurry and abandoning the structures in place; see Figure A1-4 in Appendix A). These structures are buried under existing sidewalks and Carlsbad Boulevard, and filling these voids would ensure continued stability of the road and sidewalks over the long-term. The vertical vault of the underpass end structure is completely buried underneath the sand beach and would be removed and backfilled with sand to restore the disturbed area to pre-Project conditions. Removal of the vertical vault may require demolition and replacement in-kind of the western sidewalk along Carlsbad Boulevard where it crosses the underpass; however, no new construction is proposed that would be subject to seismic-related ground failure such as liquefaction.
Therefore, this Project is not likely to expose people or structures to potential substantial adverse effects due to seismic-related ground failure, including liquefaction.

*iv) Landslides?*

**No Impact.** The Project site is located both onshore and offshore. The topography of the Project area does not include slopes or other features that would have the potential to become unstable and result in a landslide. Therefore, this Project is not likely to expose people or structures to potential substantial adverse effects due to landslides.

*b) Result in substantial soil erosion or the loss of topsoil?*

**Less than Significant Impact.** Excavation would be required to remove the underpass end structure vertical vault, the fuel oil submarine pipeline, and any contaminated soils that are identified. Excavated areas would be backfilled to re-establish pre-Project conditions. Because of the nature of the activity and location, the Project would not result in substantial soil erosion or loss of topsoil. The Project would also require the temporary removal and subsequent replacement of the South Beach Groin. Since the riprap groin would be restored to pre-Project conditions, the temporary removal of the groin would have a less than significant impact on beach erosion or loss of beach sand.

*c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

**No Impact.** See discussion for *a)* above.

*d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

**No Impact.** See discussion for *a)* above.

*e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?*

**No Impact.** The Project does not require a wastewater disposal system; therefore, no impacts will occur.

**3.6.4 Mitigation Summary**

The Project would not result in significant impacts relating to geology and soils; no mitigation is required.
3.7 GREENHOUSE GAS EMISSIONS

<table>
<thead>
<tr>
<th>GREENHOUSE GAS EMISSIONS – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

3.7.1 Environmental Setting

GHGs are defined as any gas that absorbs infrared radiation in the atmosphere. GHGs include, but are not limited to, water vapor, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These GHGs lead to the trapping and buildup of heat in the atmosphere near the earth’s surface, commonly known as the Greenhouse Effect. There is increasing evidence that the Greenhouse Effect is leading to global climate change. The potential adverse impacts of global climate change in California include: the exacerbation of air quality problems; a reduction in the quality and supply of water to the State from the Sierra snowpack; a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences; damage to marine ecosystems and the natural environment and an increase in the incidences of infectious diseases, asthma, and other human health-related problems (Health & Saf. Code, § 38501).

The primary source of GHG in the United States is energy-use related activities, which include fuel combustion, as well as energy production, transmission, storage and distribution. Energy related activities generated 84 percent of the total U.S. emissions on a carbon equivalent basis in 2012. Fossil fuel combustion represents the vast majority of the energy related GHG emissions, with CO₂ being the primary GHG.

The University of San Diego School of Law Energy Policy Initiative Center prepared a regional GHG inventory to examine emissions sources and levels in San Diego County, inclusive of the cities (County of San Diego Land Use and Environment Group 2013). The study concluded that transportation is the most important emissions sector for the State and San Diego region and accounts for a higher proportion of GHG emissions in San Diego compared to the State, while electricity-related emissions represent the same proportion relative to the State as a whole. Industrial and agricultural emissions are substantially less represented in San Diego County compared to the State. Within the City of Carlsbad, the largest GHG emissions sector is transportation (39%), followed by commercial and industrial (3%), residential (2%), solid waste (3%), and wastewater (1%) (City of Carlsbad 2015a).
3.7.2 Regulatory Setting

3.7.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.7-1.

Table 3.7-1. Laws, Regulations, and Policies (Greenhouse Gas Emissions)

<table>
<thead>
<tr>
<th>U.S.</th>
<th>CA</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Clean Air Act (FCAA) (42 USC 7401 et seq.)</td>
<td>California Global Warming Solutions Act of 2006 (AB 32)</td>
<td>In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO(_2)) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate Greenhouse Gas (GHG) emissions.</td>
<td>Under AB 32, CARB is responsible for monitoring and reducing GHG emissions in the State and for establishing a statewide GHG emissions cap for 2020 that is based on 1990 emissions levels. CARB (2009) has adopted the AB 32 Climate Change Scoping Plan (Scoping Plan), which contains the main strategies for California to implement to reduce CO(_2) equivalent (CO(_2)e) emissions by 169 million metric tons (MMT) from the State’s projected 2020 emissions level of 596 MMT CO(_2)e under a business-as-usual scenario. The Scoping Plan breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the State’s GHG inventory, but does not directly discuss GHG emissions generated by construction activities.</td>
</tr>
<tr>
<td>Senate Bills (SB) 97 and 375</td>
<td></td>
<td>Pursuant to SB 97, the State Office of Planning and Research prepared and the Natural Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Effective as of March 2010, the revisions to the CEQA Environmental Checklist Form (Appendix G) and the Energy Conservation Appendix (Appendix F) provide a framework to address global climate change impacts in the CEQA process; State CEQA Guidelines section 15064.4 was also added to provide an approach to assessing impacts from GHGs.</td>
<td>SB 375 (effective January 1, 2009) requires CARB to develop regional reduction targets for GHG emissions, and prompted the creation of regional land use and transportation plans to reduce emissions from passenger vehicle use throughout the State. The targets apply to the regions covered by California’s 18 metropolitan planning organizations (MPOs). The 18 MPOs must develop regional land use and transportation plans and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.</td>
</tr>
<tr>
<td>Executive Orders (EOs)</td>
<td>EO B-30-15 (Gov. Brown, April 2015) established a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 to ensure California meets its target to reduce GHG emissions to 80 percent below 1990 levels by 2050. It also directed all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to reduce GHG emissions to meet the 2030/2050 targets.</td>
<td>Under EO S-01-07, which set forth a low carbon fuel standard for California, the carbon intensity of California’s transportations fuels is to be reduced by at least 10 percent by 2020.</td>
<td>EO S-3-05 established statewide GHG emission targets of reducing emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below the 1990 level by 2050.</td>
</tr>
</tbody>
</table>
3.7.2.2 Local

The County of San Diego (2012) adopted a Climate Action Plan (CAP) in June 2012 to address the issues of growth and climate change through meaningful GHG emissions reductions consistent with Assembly Bill (AB) 32, Governor’s Executive Order S-3-05, and the State CEQA Guidelines. The County’s CAP includes a GHG emissions inventory and forecast, GHG reduction targets, community and local government measures and actions to reduce GHG emissions, and monitoring procedures.

The City of Carlsbad (2015a) adopted a CAP in September 2015 that: is designed to reduce City GHG emissions and streamline environmental review of future development projects in the City; anticipates development within the City consistent with the recently updated General Plan; and includes an emissions inventory and GHG forecasts which are compared to GHG reduction targets. As reported in the City’s CAP, the City is forecast to meet emission targets in 2020 with: (1) implementation of state and federal actions; (2) General Plan Land Use and roadways; and (3) additional General Plan policies and actions. However, to address an emissions gap in 2035, this CAP includes GHG reduction measures to close the gap between forecast emissions and emission targets in 2035. These measures focus on incorporating elements (e.g., photovoltaic systems, energy efficiency retrofits, transportation demand management, water utility system improvements) into proposed development to reduce GHG emissions. With these measures, the City’s CAP meets emission targets for 2020 and 2035.

3.7.3 Impact Analysis

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. In October 2008, the CARB created a Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act. In this document, the CARB discusses the dangers of global climate change and the need for a defined set of significance thresholds for operations, construction, and transportation, and provides a preliminary proposal for a threshold of significance for GHG emissions. The threshold consists of a quantitative threshold of 7,000 metric tons (MT) of CO₂ equivalent (CO₂e) per year (MTCO₂e/year) for operational emissions (excluding transportation) and performance standards for construction and transportation emissions. The goal of this effort is to mitigate GHG emissions from industrial projects on a statewide level. Over time, implementation of AB 32 will reduce or mitigate GHG emissions from industrial sources.

San Diego County Air Pollution Control District Rule 60.1 identifies de minimis emissions for small stationary sources, including 20,000 tons per year of GHGs (CO₂e).
This de minimis emissions rate is used as a threshold of significance for the Project overall. The City of Carlsbad CAP includes the following project screening threshold: “the City has determined that new development projects emitting less than 900 MTCO$_2$e annual GHG would not contribute considerably to cumulative climate change impacts, and therefore do not need to demonstrate consistency with the CAP.” This threshold is applied to the Project exclusive of the offshore components. Project-generated GHGs (primarily engine exhaust) would come from marine vessels and onboard equipment, heavy-duty construction equipment, transfer dump trucks, cement trucks, and worker vehicles (Table A2-1 in Appendix A). Approximately 1,725 MTCO$_2$e would be generated over the Project duration, as shown in Table 3.7-2, with peak emissions (1,200 MTCO$_2$e per year) anticipated from September 2016 through August 2017.

Table 3.7-2. Estimated Greenhouse Gas Total Project Emissions

<table>
<thead>
<tr>
<th>AIR EMISSIONS SUMMARY</th>
<th>CO$_2$</th>
<th>N$_2$O</th>
<th>CH$_4$</th>
<th>MTCO$_2$e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds/Segment</td>
<td>6,689.55</td>
<td>0.17</td>
<td>0.49</td>
<td>3.06</td>
</tr>
<tr>
<td>English Tons</td>
<td>3.34</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Onshore Decommissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds/Segment</td>
<td>372,261.00</td>
<td>9.56</td>
<td>21.20</td>
<td>244.44</td>
</tr>
<tr>
<td>English Tons</td>
<td>267.13</td>
<td>0.01</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Offshore Decommissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds/Segment</td>
<td>2,062,695.77</td>
<td>52.83</td>
<td>134.57</td>
<td>950.93</td>
</tr>
<tr>
<td>English Tons</td>
<td>1,038.65</td>
<td>0.03</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Beach Decommissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds/Segment</td>
<td>315,755.43</td>
<td>8.08</td>
<td>17.99</td>
<td>190.17</td>
</tr>
<tr>
<td>English Tons</td>
<td>207.75</td>
<td>0.01</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Surf Zone Decommissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds/Segment</td>
<td>652,325.25</td>
<td>16.71</td>
<td>41.96</td>
<td>332.21</td>
</tr>
<tr>
<td>English Tons</td>
<td>362.87</td>
<td>0.01</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Post-Survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds/Segment</td>
<td>6,689.55</td>
<td>0.17</td>
<td>0.49</td>
<td>3.06</td>
</tr>
<tr>
<td>English Tons</td>
<td>3.34</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Total – Project Air Emissions (English Tons/Year)</td>
<td>1,883.09</td>
<td>0.05</td>
<td>0.11</td>
<td>-</td>
</tr>
<tr>
<td>Peak English Tons/Year$^1$</td>
<td>1,312.47</td>
<td>0.03</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Total – Project Air Emissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Peak MTCO$_2$e</td>
<td>1,723.88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^1$ The Project years considered in estimating Peak Tons/Year are provided in Table A1-1 in Appendix A (September 2016 through August 2017).

As described in Section 2, Project Description, there are two proposed methodologies (Options 1 and 2) to complete decommissioning activities in both the surf zone and offshore segments. Although in-field success would determine which method is more effective and thus used, the options with the highest emissions are presented in Table 3.7-2 and in Appendix H.

GHG emissions were estimated for motor vehicles utilizing load factors from the CalEEMod Model and emissions factors from Tables C.3 and C.4 of the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2009). GHG emissions were estimated for heavy equipment and vessels utilizing load factors from the OFFROAD model and the Port of Long Beach 2010 Emissions Inventory Table 3.3.
(POLB 2011), with emissions factors from Table C.3 and C.6 of the CCAR General Reporting Protocol (CCAR 2009).

As indicated in Table 3.7-2, Project-related GHG emissions would not approach nor exceed the 20,000 MTCO\textsubscript{2}e per year significance threshold for San Diego County; therefore, impacts associated with GHGs would be less than significant. Additionally, Project-related emissions for the combined onshore, beach, and surf zone decommissioning segments would total 766.82 MTCO\textsubscript{2}e, which is less than the 900 MTCO\textsubscript{2}e threshold in the City of Carlsbad’s CAP. As a result, the Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; therefore, the impact would be less than significant.

Although no mitigation is required, implementation of APM AIR-1: Air Emissions Compliance Program, APM AIR-2: Low-Emission Engines – Offshore, APM AIR-3: Low-Emission Engines – Onshore, APM AIR-4: Mobilize from Nearest Port, APM AIR-5: Dispose Materials at Nearest Port, and APM AIR-6: Low-Sulfur Fuel would further reduce this less than significant impact, as would MM TRA-2: Carpooling (for the latter, see Section 3.16, Transportation/Traffic).

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. As described under item a) above, Project-related emissions associated with Project components (onshore, beach, and surf zone decommissioning segments) within the City are less than the 900 MTCO\textsubscript{2}e threshold in the City of Carlsbad’s CAP. Because Project-related emissions would be short-term and cease upon Project completion, GHGs from decommissioning activities would not conflict with any county or state policy to reduce GHG emissions, including Executive Orders S-3-05, S-01-07, and B-30-15. Therefore, the Project would not conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing GHG emissions.

3.7.4 Mitigation Summary

The Project, which includes implementation of the air quality APMs listed below, would not result in significant GHG emissions impacts; therefore, no mitigation is required.

- APM AIR-1: Air Emissions Compliance Program.
- APM AIR-3: Low-Emission Engines – Onshore.
- APM AIR-4: Mobilize from Nearest Port.
- APM AIR-5: Dispose Materials at Nearest Port.
- APM AIR-6: Low-Sulfur Fuel.
- MM TRA-2: Carpooling.
## 3.8 HAZARDS AND HAZARDOUS MATERIALS

<table>
<thead>
<tr>
<th>HAZARDS AND HAZARDOUS MATERIALS</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

### 3.8.1 Environmental Setting

#### 3.8.1.1 Environmental Database Findings

An online review of the California Department of Toxic Substances Control (DTSC) Envirostor database on July 10, 2014, determined that one site is currently listed within approximately 0.5 mile of the Project area. This site is a tiered permit status site associated with the EPS, which was closed in 2004.
The State Water Resources Control Board (SWRCB) (2015) GeoTracker database was also reviewed in July 2015 for information on any documented sites of environmental concern in the Project area. Four closed sites were identified by GeoTracker at the EPS, and included soil contamination of diesel, gasoline, and heating or fuel oil, and non-polychlorinated biphenyl (PCB) transformer oil. Two sites were closed by the SWRCB in 1996, the others were closed in 2005 and 2015. Only one records pertaining to any of the sites closed in or before 2005 are available through the GeoTracker website. A March 16, 2005, letter from the County of San Diego Department of Environmental Health (SDDEH), Land and Water Quality Division (2005) regarding site T0608160564 indicated that the site, used for fuel tank farm operations, was investigated for diesel and heavy metals. Contaminated soil with diesel and heavy metals was found at shallow depths, and groundwater had a low concentration of dissolved diesel and trace amounts of some heavy metals. To meet the cleanup goals for the site, soil remediation was performed in 2004 in eight areas with total petroleum hydrocarbon (TPH) concentrations higher than 1,000 milligrams per kilogram (mg/kg) by excavating and recycling 4,426 cubic yards of contaminated material. The letter further stated that changes to the proposed use of the site as mixed residential/commercial may require reevaluation to determine if the change would pose a risk to public health, and that any contaminated soil excavated as part of subsurface construction work must be managed in accordance with the legal requirements at that time.

The fourth closed site, Spills, Leaks, Investigation, and Cleanup Site (SLIC) Local Case # H13941-005 (GeoTracker ID T10000003098), was identified approximately 420 feet southeast of the beach valve pit. This case, which was closed as of May 6, 2015, was the result of a 2011 underground transformer release from EPS Unit 5 main transformer cooling piping. According to the case closure summary, approximately 400 gallons of non-PCB transformer oil leaked to the ground. The ruptured pipes were immediately repaired and approximately 20 cubic yards of impacted soil were excavated from the leak area. Soil sampling was conducted and the results of analysis showed low levels of transformer oil remaining at 3 feet below grade. However, it was concluded that because the transformer oil residue at the site is likely made of low-toxicity and low mobility petroleum hydrocarbons, the residue, which has been capped with asphalt can be left in place and does not pose a significant health risk (County of San Diego Department of Environmental Health, Land and Water Quality Division 2013).

An open Cleanup Program Site (Local Case # H13941-004, GeoTracker ID SLT19726861) (SWRCB 2014a; 2014b; 2014c, Rincon Consultants, Inc. 2014a; 2014b) was also identified near the administration building (under construction) at the EPS. This site was initially associated with the fuel oil leak in November 2007. Several additional Voluntary Assistance Program applications, assessments, action plans, and SDDEH communications are associated with Local Case # H13941-004, GeoTracker ID SLT19726861 for other documented sites of environmental concern within the EPS.
Most of the documented sites of environmental concern were identified during construction of the Poseidon Carlsbad Seawater Desalination Plant, which is located in areas previously occupied by EPS petroleum storage tanks and a wastewater treatment plant, when contaminants associated with past handling, storage, and use of petroleum hydrocarbons were encountered. Documented sites of environmental concern in the area of the EPS tank farms are not discussed here because the closest tank site to the proposed Project is located more than 1,300 feet east of the beach valve pit. The documented sites of environmental concern closest to the Project are discussed below.

On August 6, 2013, petroleum hydrocarbon odors were detected during initial excavation and construction of the Intake Pump Station (located 200 feet east of the beach valve pit) for the Carlsbad Desalination Plant. Soil samples were evaluated and found to contain diesel and motor oil. Soil assessment and remedial measures to be implemented during construction of the Intake Pump Station and 72-inch Water Supply and associated Discharge Lines were proposed with cleanup goals as approved by the SDDEH for the EPS (Rincon Consultants, Inc. 2013). In July 2014, petroleum hydrocarbon odors were also reported during excavation for a 72-inch underground water supply line at the EPS. Rincon Consultants conducted soil assessment and remediation at the excavation site, which is located approximately 370 feet east of the beach valve pit. Soil samples were taken and assessed, and it was determined that TPH concentrations exceeded the established cleanup goals for two samples; other samples did not exceed cleanup goals. The contaminated soil was excavated and disposed off-site; however, contaminated soil south of the sample locations was not assessed as it was outside of the area of concern (Rincon Consultants, Inc. 2014b).

3.8.1.2 Asbestos-Containing Material

Royal Environmental Services, Inc. (Royal) was retained by Cabrillo to test the fuel oil submarine pipeline and associated facilities for asbestos-containing materials (ACM). A February 2013 report by Royal (see Appendix D) identifies three materials associated with the pipeline that contained asbestos:

- Gray/black colored pipe mastic which underlies the concrete covering on the pipeline and is also present in patches along the pipeline;
- Gray pipe wrap on the pipeline at the joint with the concrete wall at the west end of the underpass end structure; and
- Black pipe wrap on the pipeline and attached 6-inch bypass pipe.

3.8.1.3 Lead-Based Paint

Royal conducted testing of lead-based paint (LBP) on surfaces within the vertical vault of the beach valve pit and the fuel oil submarine pipeline under Carlsbad Boulevard to determine whether the paint contains lead. One gray-painted steel pipe (approximately
20 feet long and 1 inch in diameter) located within the vertical vault of the beach valve pit and tunnel (i.e., the beach valve pit horizontal shaft, underpass conduit, and underpass end structure horizontal shaft and vertical vault) under Carlsbad Boulevard was identified as having lead equal to or greater than the California Division of Occupational Safety and Health LBP threshold (0.06% by weight or 600 ppm) and the USEPA LBP threshold (0.5% by weight or 5,000 ppm) for worker protection. Because of the loose, flaky, and/or otherwise damaged LBP found on the steel pipe, the paint/pipe requires abatement prior to demolition or handling for metal recycling. Royal also opined that other similarly gray-painted equipment/facilities in the EPS likely contain LBP and should also be abated prior to demolition.

3.8.1.4 Other Known and Potentially Unknown Contaminants

The beach valve pit and vertical concrete vault have features such as an existing drain that, if compromised, could have released petroleum hydrocarbons to surrounding soils. Similarly, in the event that there were past pipeline leaks, soil in the immediate area of the pipeline could contain petroleum hydrocarbons and/or other chemicals of concern.

Royal collected samples of loose soil collected in the vertical vault of the beach valve pit and the fuel oil submarine pipeline tunnel under Carlsbad Boulevard (approximately 10 feet into the tunnel from the vertical vault of the beach valve pit). Testing of the soil samples for TPH, with a carbon range of C6 through C36 (from gasoline to oil), was conducted by Calscience Environmental Laboratories using USEPA Method 8015 Modified. As reported by Royal, the soil from the floor of the vertical vault of the beach valve pit contained TPH at 35,000 mg/kg and the sample from the tunnel contained TPH at 1,300 mg/kg. Although soils with these levels of TPH do not meet the definition of a hazardous waste, they must be managed as petroleum containing special waste. The Royal report does not identify the source of these soils or contamination; however, it states that soils further from the vertical vault of beach valve pit (i.e., within the tunnel) likely contain lower or no concentration of TPH.

A gravel sump, which is open on the bottom, is located on the beach below the fuel oil submarine pipeline (see Figure A1-2 in Appendix A). If the pipeline had leaked between the beach valve pit and sump, any fuel oil released would likely have collected in the sump due to the site topography, which slopes toward the beach.

3.8.1.5 Fuel Oil Submarine Pipeline Contents

According to the EPS Fueling Administrator, the fuel oil submarine pipeline was pigged and flushed three times to bring the hydrocarbon level below 15 ppm; no surfactant was used. The pipeline was also charged with Nalco EC6106A corrosion inhibitor to prevent internal corrosion of the pipeline. The flushed water was tested for Hexane Extractable Materials (oil and grease) by the San Diego Gas and Electric (SDG&E) Environmental
1 Analysis Laboratory (September 29, 2010) using USEPA Method 1664A (SDG&E 2010). Table 3.8-1 shows the test results.

Table 3.8-1. Pipeline Flush Water Analytical Results

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Results in milligrams per liter (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline water during first pig</td>
<td>11</td>
</tr>
<tr>
<td>Pipeline water after first pig</td>
<td>USEPA Method 1664A could not be used due to the high concentration of oil in the sample. Visual estimation put this value at 3 percent oil. The upper practical limit for this method for a 1-liter sample is 1,000 mg/L.</td>
</tr>
<tr>
<td>Pipeline water after second pig</td>
<td>14</td>
</tr>
<tr>
<td>Pipeline water after third pig</td>
<td>Non-detect</td>
</tr>
</tbody>
</table>

3 The fuel oil submarine pipeline is presently filled with 1,450 barrels of potable water and 385 gallons of Nalco EC6106A, a preservative approved by the CSLC to protect the pipeline (a Material Safety Data Sheet for Nalco EC6106A is provided in Appendix B).

6 The pipeline is under vacuum and has shown no signs of leakage.

3.8.2 Regulatory Setting

3.8.2.1 Federal and State

9 Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.8-2.

Table 3.8-2. Laws, Regulations, and Policies (Hazards/Hazardous Materials)

<table>
<thead>
<tr>
<th>U.S.</th>
<th>Clean Water Act (CWA) (33 USC 1251 et seq.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The CWA is comprehensive legislation (it generally includes reference to the Federal Water Pollution Control Act of 1972, its supplementation by the CWA of 1977, and amendments in 1981, 1987, and 1993) that seeks to protect the nation’s water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. (see below and in Section 3.9, Hydrology and Water Quality).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U.S.</th>
<th>California Toxics Rule (40 CFR 131)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In 2000, the USEPA promulgated numeric water quality criteria for priority toxic pollutants and other water quality standards provisions to be applied to waters in the State of California. USEPA promulgated this rule based on the Administrator's determination that the numeric criteria are necessary in the State of California to protect human health and the environment. Under CWA section 303(c)(2)(B), the USEPA requires states to adopt numeric water quality criteria for priority toxic pollutants for which the USEPA has issued criteria guidance, and the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses. These Federal criteria are legally applicable in California for inland surface waters, enclosed bays, and estuaries.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U.S.</th>
<th>Hazardous Materials Transportation Act (HMTA) (49 USC 5901)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The HMTA delegates authority to the U.S. Department of Transportation to develop and implement regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. Additionally, the USEPA’s Hazardous Waste Manifest System is a set of forms, reports, and procedures for tracking hazardous waste from a generator’s site to the disposal site. Applicable regulations are contained primarily in CFR Titles 40 and 49.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U.S.</th>
<th>National Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Authorized under the Comprehensive Environmental Response, Compensation,</td>
</tr>
</tbody>
</table>
Table 3.8-2. Laws, Regulations, and Policies (Hazards/Hazardous Materials)

<table>
<thead>
<tr>
<th>Country</th>
<th>Act/Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>Oil Pollution Act (OPA) (33 USC 2712)</td>
<td>The OPA requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances. The passage of the OPA motivated California to pass a more stringent spill response and recovery regulation and the creation of a State Office of Spill Prevention and Response to review and regulate oil spill plans and contracts.</td>
</tr>
<tr>
<td>U.S.</td>
<td>Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.)</td>
<td>The RCRA authorizes the USEPA to control hazardous waste from “cradle-to-grave,” which encompasses its generation, transportation, treatment, storage, and disposal. RCRA’s Federal Hazardous and Solid Waste Amendments from 1984 include waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. The Department of Toxic Substances Control is the lead State agency for corrective action associated with RCRA facility investigations and remediation.</td>
</tr>
<tr>
<td>U.S.</td>
<td>Toxic Substances Control Act (15 USC 2601–2692)</td>
<td>This Act authorizes the USEPA to require reporting, record-keeping, testing requirements, and restrictions related to chemical substances and/or mixtures. It also addresses production, importation, use, and disposal of specific chemicals, such as polychlorinated biphenyls (PCBs), asbestos-containing materials, lead-based paint, and petroleum.</td>
</tr>
</tbody>
</table>
- Convention on the International Regulations for Preventing Collisions at Sea. These regulations establish “rules of the road” such as rights-of-way, safe speed, actions to avoid collision, and procedures to observe in narrow channels and restricted visibility.  
- Inspection and Regulation of Vessels (46 USC Subtitle II Part B). Federal regulations for marine vessel shipping are codified in 46 CFR parts 1 through 599 and are implemented by the USCG, Maritime Administration, and Federal Maritime Commission. These regulations provide that all vessels operating offshore, including those under foreign registration, are subject to requirements applicable to vessel construction, condition, and operation. All vessels (including motorboats) operating in commercial service (e.g., passengers for hire, transport of cargoes, hazardous materials, and bulk solids) on specified routes (inland, near coastal, and oceans) are subject to requirements applicable to vessel construction, condition, and operation. These regulations also allow for inspections to verify that vessels comply with applicable international conventions and U.S. laws and regulations.  
- Navigation and Navigable Waters regulations (33 CFR) include requirements pertaining to prevention and control of releases of materials (including oil spills) from vessels, traffic control, and restricted areas, and general ports and waterways safety. |

CA Coastal Act Chapter 3 policies (see 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...
### Table 3.8-2. Laws, Regulations, and Policies (Hazards/Hazardous Materials)

<table>
<thead>
<tr>
<th>State</th>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Local</td>
<td>The City of Carlsbad (undated[a]) General Plan contains the following hazardous materials-related goal and policy relevant to onshore Project activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Goal: A City which minimizes injury, loss of life, and damage to property resulting from hazardous materials disaster occurrence.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Policy 1: Review land use decisions to consider constraints presented by the potential for on-site and off-site contamination by use, transfer, storage, or land disposal of hazardous materials and wastes. Land use decisions should be consistent with Federal, State and county environmental regulations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The McClellan-Palomar Airport Land Use Compatibility Plan (County of San Diego Airport Land Use Commission 2010) establishes an Airport Influence Area, which</td>
</tr>
</tbody>
</table>

Also Table 1-2) cleanup facilities and procedures shall be provided for accidental spills that do occur. This Act and its implementing regulations seek to protect State waters from oil pollution and to plan for the effective and immediate response, removal, abatement, and cleanup in the event of an oil spill. The Act requires vessel and marine facilities to have marine oil spill contingency plans and to demonstrate financial responsibility, and requires immediate cleanup of spills, following the approved contingency plans, and fully mitigating impacts on wildlife. The Act assigns primary authority to the Office of Spill Prevention and Response (OSPR) division within the CDFW to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in the marine waters of the State. The CSLC assists OSPR with spill investigations and response.

- California Clean Coast Act (SB 771) establishes limitations for shipboard incinerators, and the discharge of hazardous material—including oily bilgewater, graywater, and sewage—into State waters or a marine sanctuary. It also provides direction for submitting information on visiting vessels to the CSLC and reporting of discharges to the State water quality agencies.
- California Harbors and Navigation Code specifies a State policy to “promote safety for persons and property in and connected with the use and equipment of vessels,” and includes laws concerning marine navigation that are implemented by local city and county governments. This Code also regulates discharges from vessels within territorial waters of the State of California to prevent adverse impacts on the marine environment. This Code regulates oil discharges and imposes civil penalties and liability for cleanup costs when oil is intentionally or negligently discharged to the State waters.
- California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690) and Seismic Hazards Mapping Regulations (Cal. Code Regs., tit. 14, Div. 2, Ch. 8, Art. 10) (See Section 3.6, Geology and Soils).
- Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.) (See Section 3.9, Hydrology and Water Quality).
identifies areas likely to be impacted by noise and flight activity created by aircraft operations at the airport. The Airport Influence Area also identifies areas where new development may adversely affect airport operations.

3.8.3 Impact Analysis

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant with Mitigation. Decommissioning activities have the potential to impact the public or environment. For example, the removal of the fuel oil submarine pipeline and other equipment/facilities could result in the release of ACM or LBP into the environment, exposing workers, and potentially the public, to asbestos- or lead-related health hazards. The pipeline currently contains water and a preservative, which, along with any unanticipated residual oil in previously pigged pipelines, could also be released to the environment. Further, due to the site’s previous use of transferring of oil, decommissioning activities requiring soil excavation have the potential to expose workers to contaminants. Lastly, accidental spills of petroleum (including diesel fuel) from Project vessels may occur; other Project vessel discharges would be in accordance with applicable regulations.

To ensure that potential hazards or hazardous materials impacts to the public and environment are avoided or mitigated to less than significant, MM BIO-7: Oil Spill Response Plan (OSRP), MM BIO-8: Flush Fuel Oil Submarine Pipeline, and the following measures would be implemented.

MM HAZ-1: Certified Asbestos Abatement Contractor. Pipeline removal shall be conducted in accordance with all regulations pertaining to asbestos utilizing a certified asbestos abatement contractor to perform any such work.

MM HAZ-2: Licensed/Certified Lead-Based Paint (LBP) Contractor. A California licensed contractor certified by the California Department of Public Health shall be contracted to accomplish LBP abatement prior to the commencement of onshore demolition and to ensure proper disposal of paint flakes (which must be handled as a hazardous waste), abated pipes, and equipment.

MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA). An extended Phase I ESA review, as well as the assessment of soils around and in the beach valve pit, shall be conducted to address potential soil contamination issues at the Project site prior to the commencement of decommissioning activities. If contamination is identified, the appropriate measures to address the hazard shall be added to the Contractor Work Plan. This may include excavation and removal of contaminated soil to a legal disposal site, or onsite treatment of
contaminated soil. A copy of the Phase 1 ESA shall be provided to California
State Lands Commission staff within 2 weeks of completion.

**MM HAZ-3b: Personnel Trained to Work with Hazardous Substances.** All
work requiring removal of facilities shall be conducted by personnel trained to
work with hazardous substances and any suspicious soils (stained or with an
unusual odor) or groundwater (showing a sheen or with an unusual odor), shall
be tested and treated in accordance with all applicable laws.

**MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing
Soil.** Soil in the bottom of the beach valve pit known to have levels of TPH shall
be disposed of as a petroleum-containing special waste.

As discussed in Section 4.6, Cultural Resources, due to the presence of archaeological
site CA-SDI-210 and the paleontologically sensitive Santiago Formation, any
remediation efforts that could disturb previously undisturbed earth material would have
the potential to result in impacts to cultural resources. Mitigation involving the use of
archaeologists, Native Americans, and/or paleontologists would necessitate that these
monitors be appropriately trained to work with hazardous substances.

**b) Create a significant hazard to the public or the environment through
reasonably foreseeable upset and accident conditions involving the release of
hazardous materials into the environment?**

**Less than Significant with Mitigation.** Decommissioning activities include the use of
offshore vessels and offshore and onshore equipment that may result in the accidental
release of hazardous materials, and subsequent environmental and human exposure,
due to accidental spills of petroleum (including diesel fuel) from Project vessels or
accidental releases of fuels, lubricants, or other materials. To ensure that potential
impacts associated with the accidental release of hazardous materials are avoided or
mitigated to less than significant, the following measures would be implemented.

**MM HAZ-5: Onshore Hazardous Materials Management and Contingency
Plan Measures.** The onshore contractor shall develop and implement hazardous
materials management and contingency plan measures for onshore operations.
The measures shall be provided to California State Lands Commission staff as
part of a Stormwater Pollution Prevention Plan or a separate plan prior to Project
implementation. Measures shall include, but not be limited to, identification of:
appropriate fueling and maintenance areas for equipment; best management
practices for fueling and operation of equipment (e.g., daily inspection of
equipment); a spill response; and spill response supplies to be maintained onsite.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous
materials, substances, or waste within one-quarter mile of an existing or
proposed school?**
Less than Significant Impact. The closest school to the Project site is Jefferson Elementary School located at 3743 Jefferson Street, which is 0.95 mile to the north based upon the Carlsbad Unified School District (2014) online School Locator measuring tool. Hazardous materials that may be encountered during Project decommissioning (e.g., LBP, ACM, hydrocarbons) as described above would be very localized and would not impact the closest school. Short-term air pollutants from construction vessels and equipment are discussed in Section 3.3, Air Quality.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant with Mitigation. As described above, the EPS is included on a list of hazardous materials sites (per Gov. Code, § 65962.5, commonly referred to as the "Cortese List") (SWRCB 2015; DTSC 2015). Specifically, an open Cleanup Program Site (Local Case # H13941-004, GeoTracker ID SLT19726861) is located at the EPS. No documented sites of environmental concern associated with Local Case # H13941-004, GeoTracker ID SLT19726861, nor any closed sites within the EPS are within Project boundaries; however, as discussed under item a) above, if contamination is encountered during decommissioning activities, there would be the potential for health-related hazards to workers and possibly the public. Implementation of MM HAZ-3a and MM HAZ-3b would ensure that the potential for environmental or human health impacts from exposure to hazardous material sites is avoided or reduced to less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The McClellan-Palomar Airport is located about 3 miles southeast of the Project site. Based on a review of McClellan-Palomar Airport Land Use Compatibility Plan (County of San Diego Airport Land Use Commission 2010), the Project site is not located within an airport safety zone; therefore, no impacts would occur.

f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips located in proximity to the Project site; therefore, no impacts would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
No Impact. According to the City of Carlsbad’s (undated[b]) website, the San Diego County Office of Emergency Services is responsible for maintaining the county emergency plan, which facilitates regional mutual aid. The City of Carlsbad’s Emergency Management Administrative Team maintains the Carlsbad Emergency Operations Plan (City Plan). These plans are consistent and interoperable to maximize regional mutual aid support. Based upon a review of the Unified San Diego County Emergency Services Organizational Area Emergency Plan (2010) (County Plan), the Project does not include any elements that would interfere (physically or operationally) with this plan. Because the City Plan is consistent and interoperable with the County Plan, the Project would not interfere with implementation (physically or operationally) of the City Plan; therefore, no impacts would occur.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The Project site is not in or adjacent to a wildland fire hazard area; therefore, no impacts would occur.

3.8.4 Mitigation Summary

Implementation of the following mitigation measure(s) would reduce the potential for Project-related impacts to hazards and hazardous materials to less than significant.

- MM HAZ-1: Certified Asbestos Abatement Contractor.
- MM HAZ-2: Licensed/Certified Lead-Based Paint Contractor.
- MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA).
- MM HAZ-3b: Personnel Trained to Work with Hazardous Substances.
- MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil.
- MM BIO-7: Oil Spill Response Plan (OSRP).
- MM BIO-8: Flush Fuel Oil Submarine Pipeline.
### 3.9 HYDROLOGY AND WATER QUALITY

<table>
<thead>
<tr>
<th>HYDROLOGY AND WATER QUALITY – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Violate any water quality standards or waste discharge requirements?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Otherwise substantially degrade water quality?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>j) Inundation by seiche, tsunami, or mudflow?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

### 3.9.1 Environmental Setting

The Project site is located within the offshore and nearshore areas adjacent to the EPS on CSLC Lease PRC 791.1. The EPS is located between the San Luis Rey River to the north and San Marcos Creek to the south within the Carlsbad Hydrologic Unit and Agua...
Hedionda Lagoon watershed; the latter has an approximate drainage area of 29 square miles in the cities of Carlsbad, Vista, and Oceanside, San Diego County. The main stream in the watershed, Agua Hedionda Creek, begins on the southwestern slopes of the San Marcos Mountains in north San Diego County, flowing generally southwestward to the Agua Hedionda Lagoon and Pacific Ocean (City of Carlsbad 2005).

Regulation of water quality in the State of California is under the control of the SWRCB and Regional Water Quality Control Boards (RWQCBs). The California Ocean Plan (SWRCB 2012) states that “the beneficial uses of the ocean waters of the State that shall be protected include industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting.” The Ocean Plan also identifies water quality objectives (e.g., physical, bacterial, chemical, biological characteristics) to protect the beneficial uses of ocean waters. Physical water quality objectives applicable to ocean discharges include:

- Floating particulates and grease and oil shall not be visible;
- The discharge of waste shall not cause an aesthetically undesirable discoloration of the ocean surface; and
- Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.

According to the SWRCB (2010), Agua Hedionda Creek is on the Section 303(d) List of Impaired Water Bodies for pathogens, metals/metalloids, nutrients, salinity, and toxicity. Identified sources of pollutants include natural sources, urban runoff, and unspecified non-point sources; sources of metals/metalloids are unknown. The Agua Hedionda Lagoon is not on the 303(d) list. According to the 2009 CEC report for the CECP, the groundwater beneath the EPS is generally brackish and is designated as having no beneficial uses.

Pursuant to National Pollutant Discharge Elimination System (NPDES) Permit CA0001350, Order No. R9-2006-0043, the Applicant monitors discharge receiving waters at 28 stations near the EPS for four water quality parameters: temperature, pH, dissolved oxygen (DO), and percent light transmittance. Fall 2012 receiving water quality monitoring results include: surface temperatures ranged from 58.02 degrees Fahrenheit (°F) to 59.61 °F; surface percent light transmittance ranged from 72.77 percent to 93.89 percent; surface measurements of DO ranged from 7.98 milligrams per liter (mg/L) to 8.55 mg/L; and surface pH values ranged from 8.19 to 8.23 (Merkel & Associates, Inc. 2013b).
1 \textbf{3.9.2 Regulatory Setting}

2 \textbf{3.9.2.1 Federal and State}

3 Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.9-1.

\begin{table}[h]
\centering
\begin{tabular}{|l|p{0.7\textwidth}|}
\hline
\textbf{U.S.} & Clean Water Act (CWA) (33 USC 1251 et seq.) \\
\hline
& The CWA is comprehensive legislation (it generally includes reference to the Federal Water Pollution Control Act of 1972, its supplementation by the CWA of 1977, and amendments in 1981, 1987, and 1993) that seeks to protect the nation’s water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. These water quality standards are promulgated by the USEPA and enforced in California by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). CWA sections include: \\
& \quad \bullet \text{State Water Quality Certification.} Section 401 (33 USC 1341) requires certification from the State or interstate water control agencies that a proposed water resources project is in compliance with established effluent limitations and water quality standards. USACE projects, as well as applicants for Federal permits or licenses are required to obtain this certification. \\
& \quad \bullet \text{National Pollutant Discharge Elimination System (NPDES).} Section 402 (33 USC 1342) establishes conditions and permitting for discharges of pollutants under the NPDES. \\
& \quad \bullet \text{Ocean Discharges.} Section 403 (33 USC 1343) addresses criteria and permits for discharges into the territorial seas, the contiguous zone, and the oceans. \\
& \quad \bullet \text{Permits for Dredged or Fill Material.} Section 404 (33 USC 1344) authorizes a separate permit program for disposal of dredged or fill material in U.S. waters. \\
\hline
\textbf{U.S.} & Oil Pollution Act (OPA) (33 USC 2712) \\
\hline
& The OPA requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances. The passage of the OPA motivated California to pass a more stringent spill response and recovery regulation and the creation of the Office of Spill Prevention and Response (OSPR) to review and regulate oil spill plans and contracts. \\
\hline
\textbf{U.S.} & Rivers and Harbors Act (33 USC 401) \\
\hline
& This Act governs specified activities (e.g., construction of structures and discharge of fill) in “navigable waters” of the U.S. (waters subject to the ebb and flow of the tide or that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce). Under section 10, excavation or fill within navigable waters requires approval from the USACE, and the building of any wharf, pier, jetty, or other structure is prohibited without Congressional approval. \\
\hline
\textbf{CA} & Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.) (Porter-Cologne) \\
\hline
& Porter-Cologne is the principal law governing water quality in California. The Act established the SWRCB and nine RWQCBs who have primary responsibility for protecting State water quality and the beneficial uses of State waters. Porter-Cologne also implements many provisions of the Federal CWA, such as the NPDES permitting program. Pursuant to the CWA § 401, applicants for a Federal license or permit for activities that may result in any discharge to waters of the U.S. must seek a Water Quality Certification (Certification) from the State in which the discharge originates. Such Certification is based on a finding that the discharge will meet water quality standards and other appropriate requirements of State law. In California, RWQCBs issue or deny certification for discharges within their jurisdiction. The SWRCB has this responsibility where projects or activities affect waters in more than one RWQCB’s jurisdiction. If the
\end{tabular}
\end{table}
### Table 3.9-1. Laws, Regulations, and Policies (Hydrology and Water Quality)

<table>
<thead>
<tr>
<th>CA</th>
<th>Coastal Act policies (see also Table 1-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coastal Act policies applicable to this issue area are:</td>
</tr>
<tr>
<td></td>
<td>- Section 30231 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.</td>
</tr>
<tr>
<td></td>
<td>- See also: Section 30233 (Diking, filling or dredging; continued movement of sediment and nutrients); and Section 30235 (Construction altering natural shoreline), which states in part ...Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CA</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Under California Code of Regulations, Title 23, the Central Valley Flood Protection Board regulates specific river, creek, and slough crossings for flood protection: (1) new crossings must maintain hydraulic capacity through such measures as in-line piers, adequate stream bank height (freeboard), and measures to protect against stream bank and channel erosion, and (2) improvements, including crossings, must be constructed in a manner that does not reduce the channel’s capacity or functionality, or that of any Federal flood control project.</td>
</tr>
<tr>
<td></td>
<td>- California Water Code section 8710 requires that a reclamation board permit be obtained prior to the start of any work, including excavation and construction activities, if projects are located within floodways or levee sections. Structures for human habitation are not permitted within designated floodways.</td>
</tr>
</tbody>
</table>
Environmental Checklist and Analysis – Hydrology and Water Quality

3.9.2.2 Local

The City of Carlsbad (2006) General Plan OSCE contains the following water quality objective and policies relevant to onshore Project activities.

- Objective: B.1: To control storm water pollutants.

- Policy C.4: Prior to making land use decisions, utilize methods available to estimate increases in pollutant loads and flows resulting from projected future development. The City shall require developments to incorporate structure and non-structural best management practices to mitigate the projected increases in pollutant loads.

- Policy C.7: Post-development runoff from a site shall not contain pollutant loads which cause or contribute to an exceedance of receiving water quality objectives or which have not been reduced to the maximum extent practicable.

- Policy C.9: Developments shall implement appropriate recommendations to protect water quality found in the San Diego Association of Government’s Water Quality Element of its Regional Growth Management Strategy.

- Policy C.22: Prohibit alteration of waterways and water bodies that would cause significant adverse impacts on the environment.

- Policy C.24: Conserve, and protect the water resources including, but not limited to, floodplains, shoreline, lagoons, waterways, lakes, ponds, and the ocean.

3.9.3 Impact Analysis

a) Violate any water quality standards or waste discharge requirements?

Less than Significant with Mitigation. The Project has the potential to violate water quality standards or waste discharge requirements. The introduction of vessels and equipment into the offshore water environment would result in short-term risks for adverse effects on marine water quality in the event of an accidental spill (e.g., fuel leak). Any aesthetically undesirable discoloration of the ocean surface that would occur as a result of an accidental spill would also be contrary to the California Ocean Plan objective. Implementation of MM BIO-7: Oil Spill Response Plan (OSRP) would ensure that potential impacts associated with the accidental discharge of fuels, oils, or lubricants are avoided or mitigated to less than significant. Additionally, Project vessels routinely discharge ballast, bilge, and cooling water, which may increase turbidity within the water column or result in an unanticipated or accidental discharge; however, it is anticipated that all vessel discharges would be conducted in accordance with applicable USCG regulations and would not violate any water quality standards.
The ocean bottom in the Project area is subject to annual scouring wherein several feet of sand is transported in and out of the Project area; this mixing of ocean bottom materials in the water column at the Project site is a natural occurrence. Work activities in the marine environment, including removal of the fuel oil submarine pipeline, anchors and chains, and debris, would disturb the ocean bottom, and result in a limited, localized increase in turbidity. Any Project-related turbidity would be localized and is not expected to result in the violation of any water quality standard. Implementation of **MM BIO-6:** Final Marine Safety and Anchoring Plan (MSAP) would ensure that potential impacts associated with anchoring are avoided or mitigated to less than significant.

As discussed in Section 3.8, Hazards and Hazardous Materials, the fuel oil submarine pipeline currently contains potable water and a preservative; however, unanticipated residuals of oil may exist in previously pigged pipelines. Pipeline removal could release pipeline contents into the environment, which would violate water quality standards. Implementation of **MM BIO-8:** Flush Fuel Oil Submarine Pipeline would ensure that potential impacts from the accidental release of contents in the pipeline are avoided or mitigated to less than significant.

A search of the SWRCB GeoTracker and California DTSC Envirostor online databases in 2014 did not identify any hazardous material sites impacting the beach or ocean floor in the Project area. Additionally, no hazardous materials spills affecting marine resources have been documented in the area. Thus, seafloor and beach materials that would be disturbed are not expected to contain contaminants.

Project activities have the potential to result in the discharge of fuels and lubricants to soils, surface water and groundwater. As discussed in Section 3.8, Hazards and Hazardous Materials, excavation in areas with known hydrocarbon contamination (beach valve pit/vertical vault), if not properly conducted, may result in runoff that could violate water quality standards. Implementation of **MM HAZ-3a:** Extended Phase I Environmental Site Assessment (ESA), **MM HAZ-3b:** Use Personnel Trained to Work with Hazardous Substances, **MM HAZ-4:** Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil, and **MM HAZ-5:** Onshore Hazardous Materials Management and Contingency Plan Measures would ensure that the potential impacts associated with the discharge of fuels and lubricants into the soils, surface water, and groundwater are avoided or mitigated to less than significant. Because of the limited amount of ground disturbance that would occur onshore and the existing conditions at the Project site (e.g., relatively flat topography and paved or compacted soil), erosion and sedimentation of surface water is also not anticipated to be a significant Project-related impact.

**b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-**
existing nearby wells would drop to a level which would not support existing land
uses or planned uses for which permits have been granted)?

No Impact. The Project is a short-term decommissioning of an existing facility and
would not use substantial water resources. There are no elements of the project that
would interfere with groundwater recharge; therefore, there would be no impact.

c) Substantially alter the existing drainage pattern of the site or area, including
through the alteration of the course of a stream or river, in a manner which would
result in substantial erosion or siltation on- or off-site?

Less than Significant Impact. The Project would include the excavation of soil and
beach sand; however, because all excavated areas would be restored to pre-Project
conditions, impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including
through the alteration of the course of a stream or river, or substantially increase
the rate or amount of surface runoff in a manner which would result in flooding
on- or off-site?

No Impact. The Project would not alter existing drainage patterns or increase the rate
or amount of stormwater runoff in a manner that would result in flooding on- or off-site;
therefore, there would be no impact.

e) Create or contribute runoff water which would exceed the capacity of existing
or planned stormwater drainage systems or provide substantial additional
sources of polluted runoff?

Less than Significant with Mitigation. Project activities would not create new
discharges of water to a stormwater drain system. However, as discussed under item a)
above, contaminate runoff could result if onshore equipment, containing fuels and
lubricants, or contaminated soils are improperly managed. Implementation of MM HAZ-
3a, MM HAZ-3b, MM HAZ-4, and MM HAZ-6 would avoid or mitigate the potential
impacts associated with the creation of polluted runoff to less than significant.

f) Otherwise substantially degrade water quality?

Less than Significant with Mitigation. Project activities with the potential to degrade
water quality are discussed and addressed in a) and e) above.

g) Place housing within a 100-year flood hazard area as mapped on a federal
Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard
delineation map?
No Impact. The Project does not include housing within a 100-year flood hazard area; therefore, there would be no impact.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No impact. The Project does not include placing new structures in the 100-year flood hazard area; therefore, there would be no impact.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. Due to the nature and location of the Project, people and structures would not be exposed to a significant risk of loss, injury, or death due to flooding risks associated with dam or levee failure; therefore, there would be no impact.

j) Inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. The Project area is located south and east of the western end of the Agua Hedionda Lagoon, which is susceptible to seiche (City of Carlsbad [undated(a)]). Since, the Project is limited to infrastructure decommissioning, and decommissioning is a short-term activity, it is not anticipated that workers would be impacted by a seiche. The Project is also located adjacent to and in the ocean, areas susceptible to a tsunami; however, due to the short duration of the Project, impacts of a tsunami are considered low. Additionally, because of the relatively level topography of the site and surroundings, the potential for damaging mudflow is not expected to be a significant hazard at the Project site. As a result, impacts from a seiche, tsunami, or mudflow are unlikely and impacts would be less than significant.

3.9.4 Mitigation Summary

Implementation of the following mitigation measure(s) would reduce the potential for Project-related impacts to hydrology and water quality to less than significant.

- MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- MM BIO-7: Oil Spill Response Plan (OSRP).
- MM BIO-8: Flush Fuel Oil Submarine Pipeline.
- MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA).
- MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances.
- MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil.
3.10 LAND USE AND PLANNING

<table>
<thead>
<tr>
<th>LAND USE AND PLANNING – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Physically divide an established community?</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[x]</td>
</tr>
<tr>
<td>b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</td>
<td>[ ]</td>
<td>[x]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>c) Conflict with any applicable habitat conservation plan or natural community conservation plan?</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[x]</td>
</tr>
</tbody>
</table>

3.10.1 Environmental Setting

The MOT is located offshore from the EPS. The MOT moorings and fuel oil submarine pipeline within State waters are within CSLC Lease PRC 791.1 (Figure 3.10-1). The subsurface pipeline crosses Carlsbad State Beach and Carlsbad Boulevard and terminates in the beach valve pit located within the EPS onshore facility. The EPS is located in the City of Carlsbad adjacent to the southern edge of the Agua Hedionda Lagoon. The total land acreage of the existing EPS is approximately 95 acres, not including Agua Hedionda Lagoon acreage owned by the Applicant. The EPS is bounded by SDG&E property to the south, I-5 to the east, Carlsbad Boulevard to the west, and Agua Hedionda Lagoon to the north. Freight rail and North County Transit District (NCTD) passenger rail services cross the EPS site.

Other Project area land uses include residential development located approximately 0.25 mile (1,400 feet) south and 0.65 mile (3,500 feet) north of the fuel oil submarine pipeline landfall. Carlsbad State Beach is a popular recreational and natural resource. Additionally, Carlsbad Boulevard includes a designated bike lane used by bikers, walkers, and joggers. Shoreline and nearshore land uses in the Project area include two sets of jetties, located north of the Project pipeline corridor, that constitute the intake and outfall channels to support the operation of the EPS once-through cooling (OTC) system. In the Project area the ocean is used for boating, sailing, kayaking, fishing, and lobster trapping. Commercial fisheries are described further in Section 4.1, Commercial and Recreational Fishing. Recreation is discussed in Section 3.15, Recreation.

A maximum of 500,000 cubic yards of spoils are dredged by the Applicant from the outer basin of the Agua Hedionda Lagoon when required. This dredged beach sand-quality material is placed on the beaches to the north and the south of the Agua Hedionda Lagoon inlet channel and EPS discharge channel.
Figure 3.10-1. Aerial Photo of the Project Area
3.10.2 Regulatory Setting

3.10.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 1-2.

3.10.2.2 Local

The City of Carlsbad’s land use plans and regulations applicable to onshore Project activities include: the General Plan (comprising eight “elements”), Municipal Code (Zoning), Encina Power Station Precise Development Plan, and the South Carlsbad Coastal Redevelopment Project Area Plan. The City has an adopted Local Coastal Program (City of Carlsbad 2010a); however, the segment covering the Project area (Agua Hedionda Lagoon Segment) is not used because certification by the California Coastal Commission was deferred. The North County MHCP and HMP for Natural Communities are applicable to the City, including Agua Hedionda Lagoon, but not the Project site. Specific goals, objectives, and policies from the above mentioned plans applicable to land use are discussed below.

City of Carlsbad General Plan

The City of Carlsbad (2013a) General Plan Land Use Element identifies the desirable pattern for the ultimate development of the City and addresses the provision of adequate public facilities necessary to serve the land uses identified in the General Plan. Specifically, the Land Use Element identified the following land use goal, objective, and policies relevant to onshore Project activities.

- Goal: A City which protects and conserves natural resources, fragile ecological areas, unique natural assets and historically significant features of the community.
- Objective: To establish the preservation of the natural habitat of the rivers, riverbanks, streams, bays, lagoons, estuaries, marshes, beaches, lakes, shorelines and canyons and other areas containing rare and unique biological resources as a high priority.
- Policy C.5: Limit future development adjacent to the lagoons and beach in such a manner so as to provide to the greatest extent feasible the physical and visual accessibility to these resources for public use and enjoyment.
- Policy C.7: Require comprehensive environmental review in accordance with the California Environmental Quality Act (CEQA) for all projects that have the potential to impact natural resources or environmental features.
• Policy C.8: Require that the construction of all projects be monitored to ensure that environmental conditions and mitigating measures are fully implemented and are successful.

• Policy C.9: Implement to the greatest extent feasible the natural resource protection policies of the Local Coastal Program.

The City of Carlsbad (2006) General Plan OSCE also contains goals, resources, and policies that are relevant to the Project.

• Goal A.1: An open space system of aesthetic value that maintains community identity, achieves a sense of natural spaciousness, and provides visual relief in the cityscape.

• Objective B.1: To preserve, protect and enhance those areas of the City that provide unique and special open space functions including, but not limited to, cultural and visual amenities, active and passive recreational uses, landmarks, buffers between incompatible land uses, wildlife habitats, and unique and desirable vegetation.

The City of Carlsbad is updating its General Plan and has proposed draft goals and policies that are either: the same as existing goals, objectives, or policies; a modified version of one or more existing goal, objective or policy (some existing goals, objectives, and policies have been reworded and/or combined to build upon the intent, clarify, reflect current status, and/or to reduce redundancy); or new, meaning that the topic is not addressed by an existing goal, objective, or policy. Based upon a review of the City of Carlsbad’s (undated[c]) “Comparison of Proposed and Existing General Plan Goals and Policies” document, the following new General Plan policies, if adopted, may be considered relevant to the Project.

• Proposed Land Use and Community Design Element:
  o Policy: Carlsbad Boulevard/Agua Hedionda Center, 2.P.79 West of the Railroad Tracks. This policy calls for the decommissioning, demolition, and remediation of the EPS site among other items.

• Proposed Open Space, Conservation and Recreation Element
  o Goal: Beaches, Parks and Recreation, 4-G.8 - Improve and maintain high quality beaches for residents and visitors.

• Proposed Arts, History, Culture and Education Element
  o Policy: Archaeological and Paleontological Resources, 7-P.10 - Require consultation with the appropriate organizations and individuals (e.g., Information Centers of the California Historical Resources Information Systems, the Native American Heritage Commission, and Native American groups and individuals) to minimize potential impacts to cultural resources that may occur as a result of a proposed project.
Encina Power Station Precise Development Plan

The Encina Power Station Precise Development Plan (City of Carlsbad 2014a) applies to approximately 95 acres of property owned by the Applicant. This plan acknowledges that decommissioning the EPS and remediating the site has begun.

South Carlsbad Coastal Redevelopment Project Area Plan

No elements of the South Carlsbad Coastal Redevelopment Project Area Plan are directly relevant to the Project. The plan states, however, that uses for the generation and transmission of electrical energy require a finding of “extraordinary public benefit (Carlsbad Housing and Redevelopment Commission 2005).” The City Council has made a finding that the potential future amended Carlsbad Energy Center Project (CECP) would be of extraordinary public benefit. Decommissioning of EPS components furthers a goal of a potential future Amended CECP within the redevelopment plan area.

3.10.3 Impact Analysis

a) Physically divide an established community?

No Impact. The Project is a short-term decommissioning project and would not physically divide an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. The Project does not propose any uses that are inconsistent with planned uses of the Project site and, over the long-term, would maintain the natural assets of the Project area. Decommissioning activities would result in short-term impacts both onshore (e.g., use of the beach and parking spaces on Carlsbad Boulevard near the Project site) and offshore (e.g., uses of the ocean for recreation), including direct preclusion from the placement of construction vehicles, vessels, equipment, workers, and materials and indirect preclusion of persons seeking to avoid construction noise. However, physical areas of impact would be restored to pre-Project conditions and the Project schedule is generally based on a 5-day, 12-hour/day work week, that avoids high use periods (summer months and weekends). Exceptions to this general schedule may occur as described in Section 2.6, Preliminary Decommissioning Schedule. Decommissioning activities requiring the use of equipment within the City of Carlsbad require compliance with Chapter 8.48 of the City Municipal Code, which limits disturbing or offensive construction noise to the hours between 7:00 a.m. and sunset on weekdays, between 8:00 a.m. and sunset on Saturdays, and...
prohibits such noise on Sundays and on 10 major holidays; however, Section 8.48.020 allows the City Manager to permit exceptions to these limits in nonresidential zones where there are no inhabited dwellings within 1,000 feet of the noise source. In addition to being temporary, these effects would be limited in area to the Project site, and access to the beach and ocean is plentiful elsewhere in the Carlsbad area.

The EPS is zoned PU (Public Utility) and the land across Carlsbad Boulevard from the EPS is zoned OS (Open Space), each with their own corresponding land use designations. South of the fuel oil submarine pipeline landfall is an area zoned R-1 (One-Family Residential) with a land use designation RLM (Residential Low - Medium Density). The Agua Hedionda Lagoon located north of the pipeline landfall is zoned OS with a corresponding land use designation. Residential land uses located beyond the Agua Hedionda to the north are zoned R-2 (Two-Family Residential) and RD-M (Residential Density - Multiple). The land use designations are also residential (RM and RH respectively) (City of Carlsbad 2012a; 2012b). Decommissioning of the EPS MOT is consistent with these land use and zoning designations, and by decommissioning and restoring the site in an environmentally safe manner, the Project aligns with the goals and polices of the City of Carlsbad’s General Plan (Land Use Element and Open Space and Conservation Element) and Encina Power Station Precise Development Plan. Removal of the pipeline offshore, including any associated infrastructure and debris, would also restore the ocean bottom in support of Coastal Act Chapter 3 policies.

The Applicant would have to obtain additional required permits/approvals, as listed in Section 1.7, prior to the start of decommissioning. With implementation of the MMs identified in this MND and compliance with any conditions required by other agencies with jurisdiction over the Project, the Project would be consistent with applicable plans, policies, and regulations; therefore, the impact would be less than significant.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. As described in Section 3.4, Biological Resources, the EPS is located within the boundary of the City of Carlsbad’s HMP, which guides local implementation for the North County MHCP. The North County MHCP focuses on habitat preservation and enhancement for the California gnatcatcher, and Agua Hedionda Lagoon and adjacent areas to the east have been designated a core habitat area in the MHCP. The Project would not adversely affect the California gnatcatcher or its habitat; therefore, the Project would not conflict with any applicable habitat or natural community conservation plan.

3.10.4 Mitigation Summary

The Project would not result in significant impacts to land use and planning; no mitigation is required.
1 **3.11 MINERAL RESOURCES**

<table>
<thead>
<tr>
<th>MINERAL RESOURCES – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

2 **3.11.1 Environmental Setting**

The Project site is located in and offshore of the City of Carlsbad. The onshore component is located immediately west of Carlsbad State Beach and south of Agua Hedionda and supports recreational, open space, and industrial uses. No mineral resource extraction occurs at or within the vicinity of the Project site. According to the City of Carlsbad (2006) OSCE, Carlsbad does not have any economically significant mineral resources. According to California Geological Survey (2012a, 2012b) reports regarding aggregate sustainability in California, Western San Diego County is one of the areas with the greatest projected future need for aggregate due to a significant deficit in local production in this area (only 167 tons of production of 1,014 required million tons).

3 **3.11.2 Regulatory Setting**

4 **3.11.2.1 Federal and State**

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.11-1.

5 **Table 3.11-1. Laws, Regulations, and Policies (Mineral Resources)**

<table>
<thead>
<tr>
<th>CA</th>
<th>Surface Mining and Reclamation Act (SMARA) (Pub. Resources, §§ 2710-2796)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In accordance with SMARA, the California Geological Survey classifies the regional significance of mineral resources and assists in the designation of lands containing significant aggregate resources. Mineral Resource Zones (MRZs) have been designated to indicate the significance of mineral deposits. The MRZ categories are:</td>
</tr>
<tr>
<td></td>
<td>• MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.</td>
</tr>
<tr>
<td></td>
<td>• MRZ-2: Areas where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.</td>
</tr>
<tr>
<td></td>
<td>• MRZ-3: Areas containing mineral deposits the significance of which cannot be evaluated from available data.</td>
</tr>
<tr>
<td></td>
<td>• MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.</td>
</tr>
</tbody>
</table>
3.11.2.2 Local

The City of Carlsbad (2006) General Plan OSCE addresses mineral resources; however, since there are no economically significant mineral resources in the City, there are no relevant goals, objectives, or policies relevant to onshore Project activities.

3.11.3 Impact Analysis

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No Impact. The Project area consists of a developed energy facility site, public road, beach, and ocean, and no mineral resource areas are located at the Project site, adjacent to the Project site, or within the City of Carlsbad. Therefore, the project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The Project area consists of a developed energy facility site, public road, beach, and ocean, and no mineral resource areas are located at the Project site, adjacent to the Project site, or within the City of Carlsbad. Therefore, the Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

The beach valve pit would be backfilled and compacted with approximately 87 cubic yards of native soil from off-site sources (see Figure A1-3 and Figure A2-5 in Appendix A). Native backfill soil and sand from off-site sources will be obtained from approved and permitted sources in accordance with the Surface Mining and Reclamation Act and will have similar grain size characteristics and color to the surrounding soil and sand at the Project site.

3.11.4 Mitigation Summary

The Project would not result in significant impacts to mineral resources; no mitigation is required.
### 3.12 NOISE

<table>
<thead>
<tr>
<th>NOISE – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

### 3.12.1 Environmental Setting

The MOT lies primarily offshore, with approximately 300 feet of fuel oil submarine pipeline located onshore below riprap on Carlsbad State Beach and extending under Carlsbad Boulevard to the beach valve pit within the EPS. Noise sources in the Project area include: traffic on Carlsbad Boulevard, I-5, and other local roads; passing trains; ocean waves; marine vessels; and various sounds from local land uses. Residential uses (considered to be noise sensitive) are located north and south of Project area, with the closest located about 1,400 feet south of the pipeline landfall.

### 3.12.1.1 Air Noise Characteristics

Noise is defined as unwanted or objectionable sound. Measurement of sound involves determining three variables: (1) magnitude, (2) frequency, and (3) duration. The magnitude of variations in air pressure associated with sound waves results in the quality commonly referred to as loudness. Human ears respond to a very wide range of sound pressures producing numbers of awkward size when sound pressures are...
related on an arithmetic (1, 2, 3…) scale. It has therefore become customary to express
sound pressure level in decibels which are logarithmic (1, 10, 100…) ratios comparing
sound pressures to a reference pressure. The reference pressure commonly used for
noise measurements in air is 20 μPa. The quietest sound that a normal young adult
human ear can hear is assigned the value 0 dB. A multiplication of sound pressure by a
factor of 10 corresponds to an increase in sound pressure level of 20 dB. A doubling of
any value of sound pressure corresponds to an increase in sound pressure level of 6
dB. As a rule of thumb, a 1 dB change in sound level requires close attention to notice a
change in loudness, whereas a 3 dB change is clearly noticeable, and a 10 dB change
would be nearly twice (or one-half) as loud. Some sample typical SPLs for common
sounds are: 10 dB for rustling of leaves; 60 dB for ordinary conversation at 3 feet; and
100 dB for a power mower at 5 feet.

Because decibels are logarithmic ratios, they cannot be manipulated in the same way
as arithmetic numbers. Addition of decibels produces results such as 70 dB + 70 dB =
73 dB. When the difference between two sound levels is greater than about 10 decibels,
the lesser sound is negligible in terms of affecting the total level.

Sound level diminishes as distance from the source increases. For a “point” source of
sound in free space, the rate at which the sound attenuates is inversely proportional to
the square of the distance from the source. This means the sound level would drop 6 dB
each time the distance from the source is doubled. A stream of vehicles on a busy
highway represents a “line” source of sound and the attenuation rate is only about 3 dB
for each doubling of distance.

Another characteristic of sound that must be considered is frequency, which is
measured in Hz. One vibration per second equals 1 Hz. The human ear responds to
sounds in the frequency range from 20 Hz to 20 kHz. While loudness depends primarily
on sound pressure, it is also affected by frequency, and while pitch is closely related to
frequency, it also depends on sound pressure. Thus, a 2 kHz tone at 5 dB SPL sounds
just as loud as a 20 Hz tone at 70 dB SPL. A 20 Hz sound at 70 dB is quiet to the ear,
while a 2 kHz sound at 70 dB is quite loud. Because of these variations, systems have
been developed to relate physical measurements of sound to human response.
Presently, the most widely used measure of loudness for community noise evaluation is
the A-weighted sound level. Sound levels using this system are referred to as dBA.

The duration of noise and the time period at which it occurs are important factors in
determining the human response to sound. For example, noise induced hearing loss is
directly related to the magnitude, frequency, and duration of exposure. Annoyance due
to noise is also associated with how often noise is present and how long it persists. One
approach to quantifying time-varying noise levels is to calculate the Energy Equivalent
Sound Level (Leq) for the time period of interest. The Leq represents a sound level which,
if continuous, would contain the same total acoustical energy as the actual time-varying noise which occurs during the observation period.

In a residential or other noise sensitive environment, noise is more disturbing at night than during the day. Thus, noise indices have been developed to account for the differences in intrusiveness between daytime and nighttime noise. The Community Noise Level Equivalent (CNEL) and the Day-Night Average Sound Level ($L_{dn}$) are such indices. CNEL and $L_{dn}$ values result from the averaging of hourly $L_{eq}$ values for a 24-hour period, with a weighting factor applied to the nighttime $L_{eq}$ values (and the evening values for CNEL). The CNEL penalizes noise levels during the night (10:00 p.m. to 7:00 a.m.) by 10 dB to account for the increased sensitivity of people to noise after dark. Evening noise levels (7:00 p.m. to 10:00 p.m.) are penalized 5 dB by the CNEL. The $L_{dn}$ also penalizes nighttime noise levels by 10 dB, but does not penalize evening levels. These two indices are generally equivalent. In general, the CNEL may be thought qualitatively as an accumulation of noise associated with individual events occurring throughout a 24-hour period. The noise of each individual event is accounted for in a separate, discrete measurement that integrates the changing sound level over time as, for example, when an aircraft approaches, flies overhead, then continues off into the distance. These integrated sound levels for individual operations are referred to as SELs. The accumulation of the SELs from each individual operation during a 24-hour period determines the CNEL for the day.

To limit population exposure to physically and/or psychologically significant noise levels, the State and various local cities and counties in the state have established guidelines and/or ordinances to control noise as discussed in Section 3.12.2, Regulatory Setting.

### 3.12.1.2 Existing Community Noise Environment

Padre Associates, Inc. collected ambient (baseline) noise measurements at two onshore locations near the Project area using a Larson Davis LXT noise meter (Figure 3.12-1). Noise level readings were taken in 15-minute intervals using an A-weighted frequency. Table 3.12-1 describes the two locations and the results of ambient noise measurements taken on January 14, 2013, between 9:15 a.m. and 9:35 a.m. (weekday morning). These measurements provide a snapshot of the existing noise environment and are representative of daytime noise levels within that timeframe only.

<table>
<thead>
<tr>
<th>Approximate Location</th>
<th>Ambient Noise Level ($L_{eq}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlsbad Beach, within the existing fuel oil submarine pipeline alignment, approximately 50 feet from the edge of Carlsbad Boulevard</td>
<td>62.8 dBA</td>
</tr>
<tr>
<td>Carlsbad Beach, approximately 1,300 feet south of the fuel oil submarine pipeline alignment, 150 feet from the center of Carlsbad Boulevard</td>
<td>60.6 dBA</td>
</tr>
</tbody>
</table>
3.12.1.3 Underwater Noise Characteristics

According to the National Research Council of the National Academies (2003), in the absence of shipping, natural forces are the dominant sources of long-term averaged noise at all frequencies in the ocean. The dominant source of naturally occurring ocean noise across the frequencies from 1 Hz to 100 kHz is associated with ocean surface waves generated by the wind acting on the sea surface. Above 100 kHz, the thermal agitation of the ocean medium itself is the dominant contributor to ocean noise. Additionally, biological sounds such as dolphin whistling and echolocation, whale calls, and snapping shrimp make noticeable contributions to ocean noise at specific times. Elastic vibrations in the earth are also known to contribute to ocean noise.

Anthropogenic or human-caused noise in the marine environment is an important component of ocean noise and includes the following general noise-source categories: shipping, seismic surveying, sonars, explosions, industrial activity, and miscellaneous sources. Vessel traffic is a major contributor to noise in the world’s oceans, especially at low-frequencies between 5 and 500 Hz.

Sound waves in the underwater environment are similar to sound in air; however, sound attenuates much quicker in air than in water, meaning that sound can propagate over longer distances in water than in air. Sound in water also propagates much faster. The
speed of sound in water is generally accepted as approximately 1,500 meters per second (m/s) or 4,921 feet per second (feet/s) compared to 340 m/s or 1,115 feet/s in the air, though it is affected by numerous variables such as temperature and salinity, etc. A major difference between underwater and in-air sound measures is that the amplitude of the reference pressure variation in the case of underwater sound is by definition 1 µPa (versus 20 µPa in air). This difference is an important cause of misunderstanding when comparing above-water sound levels with underwater sound levels because both are expressed in decibels, but with respect to a different reference level. A second important difference is the difference in characteristic impedance between water and air. The characteristic impedance (Z) is the product of density ρ and speed of sound c. Thus, \( Z = \rho \times c \). In water, impedance is approximately 1,000 x 1,500 kilograms per square meter seconds (kg/m²s), whereas in air impedance is approximately 1.2 x 340 kg/m²s. This difference corresponds to a factor of almost 3,700, meaning that a particular pressure variation in water represents much less power than the same pressure variation in air (Ainslie et al. 2009).

Numerous factors influence the efficiency of sound transmission in the ocean, including, but not limited to: the variation of sound speed within the water column, bottom bathymetry, sediment and subbottom layer composition and thickness. As reported by Greeneridge (Appendix J), in the case of the MOT decommissioning site, the parameters describing the acoustic waveguide environment are generally associated with high transmission loss, which means that sound energy decreases rapidly with distance in this environment. The very shallow waters (roughly 30 m or less) lend themselves to repeated interactions of sound waves with the seafloor and sea surface, with sound energy lost in each interaction. In addition, the fine sand comprising the sediment layer attenuates sound energy more than sediments of larger grain size. Furthermore, historical sound speed profiles measured in the shallow waters off California are typically isovelocity (approximately the same sound speed throughout the water column) or downward-refracting (refracts sound waves toward the seafloor) and thus do not enhance long-range sound transmission. All of these waveguide characteristics suggest that sound originating at the MOT decommissioning site would likely suffer from relatively high acoustic transmission loss and its received levels would decrease rapidly with distance from the source.

### 3.12.2 Regulatory Setting

#### 3.12.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.12-2.
Table 3.12-2. Laws, Regulations, and Policies (Noise)

<table>
<thead>
<tr>
<th>U.S.</th>
</tr>
</thead>
</table>
| • The Noise Control Act (42 USC 4910) required the USEPA to establish noise emission criteria, as well as noise testing methods (40 CFR Chapter 1, Subpart Q). These criteria generally apply to interstate rail carriers and to some types of construction and transportation equipment. The USEPA published a guideline (USEPA 1974) containing recommendations for acceptable noise level limits affecting residential land use of 55 dBA $L_{dn}$ for outdoors and 45 dBA $L_{dn}$ for indoors.
| • The Department of Housing and Urban Development Environmental Standards (24 CFR Part 51) set forth the following exterior noise standards for new home construction (for interior noise levels, a goal of 45 dBA is set forth and attenuation requirements are geared to achieve that goal):
| o 65 $L_{dn}$ or less – Acceptable
| o 65 $L_{dn}$ and < 75 $L_{dn}$ – Normally unacceptable, appropriate sound attenuation measures must be provided
| o > 75 $L_{dn}$ – Unacceptable
| • Federal Highway Administration Noise Abatement Procedures (23 CFR Part 772) are procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. It establishes five categories of noise sensitive receptors and prescribes the use of the Hourly $L_{eq}$ as the criterion metric for evaluating traffic noise impacts.
| • Federal Energy Regulatory Commission Guidelines On Noise Emissions From Compressor Stations, Substations, And Transmission Lines (18 CFR 157.206(d)(5)) require that “the noise attributable to any new compressor stations, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a $L_{dn}$ of 55 dBA at any pre-existing noise sensitive area (such as schools, hospitals, or residences).”
| • NTIS 550-9-74-004, 1974 (“Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety”). In response to a Federal mandate, the USEPA provided guidance in this document, commonly referenced as the, “Levels Document,” that establishes an $L_{dn}$ of 55 dBA as the requisite level, with an adequate margin of safety, for areas of outdoor uses including residences and recreation areas. The USEPA recommendations contain a factor of safety and do not consider technical or economic feasibility (i.e., the document identifies safe levels of environmental noise exposure without consideration for achieving these levels or other potentially relevant considerations), and therefore should not be construed as standards or regulations.

| CA | State regulations for limiting population exposure to physically and/or psychologically significant noise levels include established guidelines and ordinances for roadway and aviation noise under California Department of Transportation as well as the now defunct California Office of Noise Control. The California Office of Noise Control land use compatibility guidelines provided the following:
| • An exterior noise level of 60 to 65 dBA Community Noise Equivalent Level (CNEL) is considered "normally acceptable" for residences.
| • A noise level of 70 dBA CNEL is considered to be "conditionally acceptable" (i.e., the upper limit of "normally acceptable" noise levels for sensitive uses such as schools, libraries, hospitals, nursing homes, churches, parks, offices, and commercial/professional businesses).
| • A noise level of greater than 75 dBA CNEL is considered "clearly unacceptable" for residences.

1. 3.12.2.2 Local

2. To address noise-related issues, the City of Carlsbad relies on two primary documents:

3. the City of Carlsbad General Plan Noise Element (1994) and Noise Guidelines Manual
The purpose of the Noise Guidelines Manual is to provide guidelines and procedures to implement policies outlined in the Noise Element of the City of Carlsbad General Plan, which establishes general policies and specific noise standards to achieve noise compatibility between land uses. The Noise Element identified one objective applicable to onshore Project activities:

- Objective B.2: To control harmful or undesirable noise is relevant to the Project.

Noise generated from construction activities is regulated by Carlsbad Municipal Code Section 8.47. When potential noise impacts from construction activities have been identified (for projects requiring approval from the City), conditions from the Noise Guidelines Manual may be implemented to minimize those impacts. For example, prior to project approval, the project proponent may be required to produce evidence acceptable to the City that:

- All construction vehicles or equipment, fixed or mobile, operated within 1,000 feet of a dwelling or noise sensitive use shall be equipped with properly operating and maintained mufflers;
- Stockpiling and/or vehicle staging areas shall be located as far as practicable from dwellings and other noise sensitive receptors.

Carlsbad Municipal Code Section 8.48 addresses construction noise with a limit to construction working hours as follows.

- 8.48.010 Limitation of hours for construction (Ord. 3109 § 1 (part), 1978)). The erection, demolition, alteration, or repair of any building or structure or the grading or excavation of land in such manner as to create disturbing, excessive or offensive noise during the following hours, except as hereinafter provided, is a violation of this code:
  - After sunset on any day, and before seven a.m., Monday through Friday, and before eight a.m. on Saturday; and

- 8.48.020 Exceptions (Ord. 3109 § 1 (part) 1978).
  - An owner/occupant or resident/tenant of residential property may engage in a home improvement or home construction project involving the erection, demolition, alteration or repair of a building or structure or the grading or excavation of land on any weekday between the hours of seven a.m. and sunset and on weekends between the hours of eight a.m. and sunset, provided such project is for the benefit of said residential property and is personally carried out by said owner/occupant or resident/tenant.
The city manager may grant exceptions to Section 8.48.010 by issuing a permit in the following circumstances: when emergency repairs are required to protect the health and safety of any member of the community; and in nonresidential zones, provided there are no inhabited dwellings within one thousand feet of the building or structure being erected, demolished, altered or repaired or the exterior boundaries of the site being graded or excavated.

Based on the City of Carlsbad Noise Guidelines Manual, an exterior noise level of up to 60 dBA CNEL is considered "normally acceptable" for residential uses. A noise level between 60 and 70 dBA CNEL is considered to be "normally unacceptable" and a noise level of greater than 75 dBA CNEL is discouraged for construction of new residences. Noise levels up to 70 dBA CNEL are considered to be normally acceptable for water recreation areas (these are general standards, not construction noise thresholds).

### 3.12.3 Impact Analysis

#### a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

**Noise in Air**

**Less than Significant with Mitigation.** Decommissioning activities would generate temporary noise in the vicinity of the Project site. Noise levels and potential noise-related impacts at receptor points near the Project site depend on three factors: (1) the location and type of noise-generating equipment (source); (2) the distance between the noise sources and sensitive receptors; and (3) the obstacles or barriers between the noise sources and sensitive receptors that may influence sound propagation. The nearest sensitive receptors are residential uses located about 1,400 feet south of the fuel oil submarine pipeline landfall. To estimate noise levels at this location, a worst case “noise-producing” scenario (requiring the most equipment/vessels in operation) was calculated based on: construction equipment and vessel noise levels during decommissioning activities in the onshore, beach, surf zone, and offshore segments; the percent usage factor for each piece of equipment or vessel; and the distance between each noise-generating piece of equipment or vessel and the sensitive receptor using the Federal Highway Administration Roadway Construction Noise Model (RCNM). Table 3.12-3 shows the reference noise levels at 50 feet from the source for the types of equipment associated with the Project under the modeled scenarios, as well as the expected percent usage factor for the worst case phase/task for a given decommissioning segment (e.g., hours of operation for the piece of equipment/total operating hours [days x 12 hours per day]). Equipment with usage factors of less than one percent is not included in the table below.
### Table 3.12-3. Noise Levels at 50 Feet from Typical Project Equipment

<table>
<thead>
<tr>
<th>Equipment Type (Number of Pieces)</th>
<th>Noise Level ($L_{max}$) at 50 Feet (dBA)</th>
<th>Percent Usage Factor (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offshore Segment – Excavate and Remove Pipeline</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barge with Generator (1)</td>
<td>81.0</td>
<td>100</td>
</tr>
<tr>
<td>Barge with Crane (1)</td>
<td>85.0</td>
<td>67</td>
</tr>
<tr>
<td>Barge Anchor Winches (2)</td>
<td>79.0</td>
<td>17</td>
</tr>
<tr>
<td>Barge with Pull Winch (1)</td>
<td>79.0</td>
<td>67</td>
</tr>
<tr>
<td>Tugboat #1 (1)</td>
<td>82.1</td>
<td>33</td>
</tr>
<tr>
<td>Tugboat #1 – Generator (1)</td>
<td>83.0</td>
<td>100</td>
</tr>
<tr>
<td>Tugboat #2 (1)</td>
<td>82.1</td>
<td>33</td>
</tr>
<tr>
<td>Tugboat #2 – Generator (1)</td>
<td>83.0</td>
<td>100</td>
</tr>
<tr>
<td>Crew Boat (1)</td>
<td>88.0</td>
<td>17</td>
</tr>
<tr>
<td>Crew Boat – Generator (1)</td>
<td>83.0</td>
<td>100</td>
</tr>
<tr>
<td>Welding Machine (1)</td>
<td>74.0</td>
<td>33</td>
</tr>
<tr>
<td>Jet Pump (1)</td>
<td>81.0</td>
<td>33</td>
</tr>
<tr>
<td>Industrial Air Compressor (1)</td>
<td>78.0</td>
<td>8</td>
</tr>
<tr>
<td>5120 Divers Air Compressor (1)</td>
<td>67.6</td>
<td>83</td>
</tr>
<tr>
<td><strong>Surf Zone Segment – Excavate and Prepare for Surf Zone Extraction (Onshore)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavator (2)</td>
<td>80.7</td>
<td>67</td>
</tr>
<tr>
<td>Dozer (1)</td>
<td>81.7</td>
<td>67</td>
</tr>
<tr>
<td>Loader (1)</td>
<td>79.1</td>
<td>33</td>
</tr>
<tr>
<td>Crane (1)</td>
<td>80.6</td>
<td>33</td>
</tr>
<tr>
<td>Divers Compressor (1)</td>
<td>67.6</td>
<td>67</td>
</tr>
<tr>
<td>Light Plant (2)</td>
<td>50.0</td>
<td>33</td>
</tr>
<tr>
<td><strong>Surf Zone Segment – Excavate and Prepare for Surf Zone Extraction (Offshore)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barge with Generator (1)</td>
<td>80.0</td>
<td>100</td>
</tr>
<tr>
<td>Barge with Crane (1)</td>
<td>85.0</td>
<td>83</td>
</tr>
<tr>
<td>Barge Anchor Winches (2)</td>
<td>79.0</td>
<td>8</td>
</tr>
<tr>
<td>Barge with Pull Winch (1)</td>
<td>79.0</td>
<td>33</td>
</tr>
<tr>
<td>Tugboat #1 (1)</td>
<td>82.1</td>
<td>33</td>
</tr>
<tr>
<td>Tugboat #1 – Generator (1)</td>
<td>83.0</td>
<td>100</td>
</tr>
<tr>
<td>Crew Boat (1)</td>
<td>88.0</td>
<td>33</td>
</tr>
<tr>
<td>Crew Boat – Generator (1)</td>
<td>83.0</td>
<td>100</td>
</tr>
<tr>
<td>Welding Machine</td>
<td>74.0</td>
<td>50</td>
</tr>
<tr>
<td>Jet Pump (1)</td>
<td>81.0</td>
<td>50</td>
</tr>
<tr>
<td>Industrial Air Compressor (1)</td>
<td>78.0</td>
<td>33</td>
</tr>
<tr>
<td>5120 Divers Air Compressor (1)</td>
<td>67.6</td>
<td>33</td>
</tr>
<tr>
<td><strong>Beach Segment – Remove/Store Riprap Groin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavators (2)</td>
<td>80.7</td>
<td>42</td>
</tr>
<tr>
<td>Bulldozer (1)</td>
<td>81.7</td>
<td>67</td>
</tr>
<tr>
<td>Front-End Loader (1)</td>
<td>79.0</td>
<td>67</td>
</tr>
<tr>
<td>Crawler Crane (1)</td>
<td>81.0</td>
<td>67</td>
</tr>
</tbody>
</table>
Table 3.12-3. Noise Levels at 50 Feet from Typical Project Equipment

<table>
<thead>
<tr>
<th>Equipment Type (Number of Pieces)</th>
<th>Noise Level ($L_{max}$) at 50 Feet (dBA)</th>
<th>Percent Usage Factor (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onshore Segment – Cut and Demolish Underpass End Structure Vertical Vault</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavators (2)</td>
<td>81.0</td>
<td>67</td>
</tr>
<tr>
<td>Bulldozer (1)</td>
<td>82.0</td>
<td>67</td>
</tr>
<tr>
<td>Front-End Loader (1)</td>
<td>79.0</td>
<td>67</td>
</tr>
<tr>
<td>Generator (1)</td>
<td>81.0</td>
<td>83</td>
</tr>
<tr>
<td>Industrial Air Compressor (1)</td>
<td>78.0</td>
<td>50</td>
</tr>
<tr>
<td>Concrete Breaker (1)</td>
<td>90.0</td>
<td>33</td>
</tr>
</tbody>
</table>

Acronyms: $L_{max}$ = maximum sound level; dBA = A-weighted sound level.
Notes: Noise levels are mostly provided from the Roadway Construction Noise Model (RCNM); however, tug and crew boat noise levels are from California State Lands Commission (2004). Winch noise levels were not available; as a result, the assumed noise level is based on RCNM levels for a rivet buster/chipping gun. Noise levels for the concrete breaker were not available; as a result, the assumed noise level is based on RCNM levels for a mounted impact hammer. The diver air compressor noise level is from the specifications for a MCH-6/EM single-phase electric compressor (Aerotecnica Coltri, S.p.A. 2014).

Decommissioning of the offshore and onshore segments would occur concurrently. For the analysis, below, the beach directly in front of the EPS was considered the closest sensitive noise receptor location from decommissioning activities in the offshore segment, with Project work vessels and offshore equipment estimated to be as close as 1,200 feet from the beach. Given the information above and using the assumptions in Table 3.12-3, noise levels from offshore decommissioning activities closest to the beach are estimated to be 66.2 dBA $L_{eq}$. As a result, the increase in noise level over ambient is expected to be in the order of 3.4 dBA (derived from subtracting the appropriate ambient site-specific noise level from Table 3.12-1 [62.8 dBA] from the estimated noise level from offshore decommissioning activities [66.2 dBA]), and noise levels at the closest residence are estimated to be 65.2 dBA or 4.6 dBA above ambient noise levels. Generally, a 3 dBA increase in noise level is considered to be perceptible to most receptors; therefore it is expected that noise associated with offshore decommissioning activities (which are scheduled to span a 3-month period) would be noticeable to the closest residences and beachgoers.

It is noted that the reference noise level for the tugboat in Table 3-12.3 is not illustrative of a tugboat under load (e.g., moving a loaded barge). Over the course of the Project, barges would be loaded with anchors and chains for offshore recycling and disposal, which may elevate noise levels above those indicated in Table 3.12-3 for tugboat operations and could be discernable to sensitive receptors on the beach and in residential areas; however, these increased noise levels would be intermittent and would only occur when a tugboat moves a loaded barge. Furthermore, the modeled scenario does not take into account noise that may result from discrete events, such as the placement of anchors and chains on the barge. Noise levels generated by the placement of these objects on the barge would be dependent upon the barge surface...
and method of placement; however, because the contractor would need to comply with Occupational Safety and Health Administration (OSHA) regulations for workers, the number of anchors and chains, as well as the distance of the operation from shore, it is not expected that this activity would result in significant noise impacts on the public.

For the onshore segment, the demolishing of the vertical vault of the underpass end structure (on the west side of Carlsbad Boulevard) was considered the worst-case noise-producing scenario. Under the worst-case scenario (i.e., all equipment operating at the same location), noise levels would be 82.8 dBA, or 20.0 dBA higher than ambient, at a distance 100 feet from the work area, which would mask any noise from offshore operations. Noise levels at the closest residence (1,400 feet away) are estimated to be 63.4 dBA, an increase of 2.8 dBA, which is not typically considered a perceptible increase in noise; however, when combined with the noise produced as a result of decommissioning activities in the offshore segment, noise levels at the closest residence would be 66.4 dBA, an increase of 5.8 dBA from ambient. This particular worst-case noise-producing scenario would last about three weeks. Remaining decommissioning work in the onshore and offshore segments, including work in both segments that would overlap (which would last approximately 3 months), would be considerably less.

Most of the decommissioning work in the surf zone and beach segments would overlap, with work occurring in the surf zone segment from September to early December and in the beach segment from September to mid-November. The worst-case noise-producing scenario for these segments would occur during the simultaneous restoration of the riprap groin on the beach and the extraction of the fuel oil submarine pipeline from the surf zone. Noise levels during the removal of the riprap groin are expected to be 78.1 dBA at 100 feet and, assuming that offshore work would occur 1,200 feet from shore, noise levels from work in the surf zone segment would be 63.0 dBA onshore (not including the use of DPR). The two combined noise levels from work in the surf zone and beach segments in addition to the ambient noise level in the area would be 78.5 dBA onshore. At the closest residence, noise levels are estimated to be 63.0 dBA (combined noise) during this worst-case noise-producing scenario. This noise level is an increase of 2.4 dBA above ambient and is generally not considered a perceptible increase in noise. More distant homes would experience lower Project-related noise levels due to distance and some shielding (from beach activities) provided by buildings.

Beach decommissioning activities that do not overlap with offshore work (e.g., removal and storage of riprap) are expected to increase noise levels at the closest residence by an estimated 1.3 dBA, which is not considered a perceptible increase in noise; however, within 100 feet of the work area, the noise level would be 79.1 dBA, which is 16.3 dBA above ambient.
Additionally, if DPR were used to extract the fuel oil submarine pipeline from the surf zone, a Taurus Rammer would generate additional noise over an approximate 4-hour period. With a reference noise level of 93 dB at 50 m (164 feet) the Taurus Rammer would result in a barely noticeable difference in construction noise relative to the otherwise expected noise level at the beach and a substantial increase in noise at the closest residence during this combined surf zone and beach segment work (2.2 dBA and 9.7 dBA, respectively) (TT Technologies, Inc. 2014).

Decommissioning activities requiring the use of equipment within the City of Carlsbad would require compliance with Chapter 8.48 of the City of Carlsbad Municipal Code, which limits disturbing or offensive construction noise between 7 a.m. and sunset on weekdays, between 8 a.m. and sunset on Saturdays, and prohibits such noise on Sundays and on 10 major holidays (Section 8.48.020 allows the city manager to permit exceptions to these limits in nonresidential zones where there are no inhabited dwellings within 1,000 feet of the noise source).

During decommissioning work in the surf zone and beach segment, nighttime or early morning work, and possibly some weekend work, may be required to take advantage of low tides in order to access the fuel oil submarine pipeline or riprap groin. The exact timing of these events, if necessary at all, would depend on the tide schedule and the progress of removing the pipeline and riprap groin. If nighttime, early morning, or weekend work is necessary, an exemption from the requirements of Chapter 8.48 of the City of Carlsbad Municipal Code would be required.

Overall, Project-generated noise levels may be considered significant in some cases, as described above, where sensitive receptors would be subject to a noticeable increase in noise levels. To ensure that potential short-term noise impacts associated with Project activities are avoided or mitigated to less than significant, the following measures would be implemented.

**MM NOI-1: Advanced Noticing.** Advanced notices shall be posted on the beach and/or along Carlsbad Boulevard within a 1,500-foot radius around the fuel oil submarine pipeline to notify the public about the location and timing of decommissioning operations. The notices shall be: (1) posted at least 1 week prior to any decommissioning operations on the beach or ocean, and shall include a map of the Project site, contact name and phone number; (2) maintained until all Project operations impacting the beach and marine environment have been completed; and (3) removed within 1 week of completing the operations described in the notice.

---

13 For purposes of this analysis, the dB value for the Taurus Rammer was assumed to be equivalent to the noise level of this equipment if it were A-weighted. This may not be the case, however, and the noise level as weighted for the human hearing range may be higher or lower.
**MM NOI-2: Shielding of Stationary Equipment.** Onshore stationary noise sources shall be shielded, where feasible, using enclosures or barriers constructed of temporary prefabricated sound blankets or sound walls.

Additionally, proposed Project scheduling would avoid the summer months and weekends, which are the times when residents would be most likely to utilize outdoor living areas.

**Underwater Noise**

**Less than Significant with Mitigation.** The potential effects associated with DPR on marine wildlife are evaluated in Section 3.4, Biological Resources. The potential impacts to humans from underwater noise generated by DPR are discussed below.

Studies have shown that high levels of underwater noise can cause dizziness, hearing damage, or other sensitive organ damage to divers and swimmers and may elicit startle responses (TNO 2008). Table 3.12-4 presents noise thresholds identified for unprotected recreational divers.

**Table 3.12-4. Suggested Noise Thresholds for Recreational Divers**

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency Range (Hz)</th>
<th>Maximum Value (dB re 1 μPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATO Undersea Research Center</td>
<td>600 to 2,500</td>
<td>154</td>
</tr>
<tr>
<td>Diving Medical Advisory Committee</td>
<td>Unspecified; believed to be 1,500</td>
<td>201</td>
</tr>
<tr>
<td>Parvin</td>
<td>500 to 2,500</td>
<td>155</td>
</tr>
</tbody>
</table>

*Source: TNO 2008*

Based on the studies summarized above, which considered different noise sources (that may not be directly transferable to the proposed Project), underwater noise levels in excess of 154 dB re 1 μPa could be considered potentially harmful to recreational divers and swimmers in the Project area.

As described in the Greeneridge report, the vibratory pile driving proxy showed sound energy over a broad range of frequencies. The highest sound level was estimated at approximately 180 dB re 1 μPa (rms) for the one-third octave band centered at 1 kHz. The frequency range 400 Hz to 3 kHz is a region of high energy for vibratory driving, with received levels of 170 dB re 1 μPa (rms) or more. Within a wider frequency range from 200 Hz to 10 kHz, received levels exceeded 160 dB re 1 μPa (rms) (based on measured sound levels back propagated to 1 meter [3.28 feet]) However, Greeneridge also stated that because of the limited and highly variable acoustic measurements for vibratory pile driving, meaningful quantitative comparison of metrics to thresholds is prohibited.
Based on the information for the vibratory pile driving proxy, noise levels in excess of
the human safety threshold would be exceeded in close proximity to DPR operations.
Although divers, swimmers, surfers, or other persons may be present in the vicinity of
the offshore Project area, it would be unlikely that such persons would be able to
approach the Project work area as an offshore safety zone would be established (see
Figure A1-1 in Appendix A) and monitored by Project support boats; however, this
safety zone, as currently identified, may not be adequate for the protection of persons
underwater during DPR operations. Therefore, noise levels produced underwater by
DPR could be harmful to humans.

To ensure that potential noise impacts to divers, swimmers, surfers, or other persons
underwater from DPR operations are avoided or minimized to less than significant, the
following measures would be implemented.

**MM NOI-3: Advanced Notice to Swimmers and Divers.** At least 1 week prior to
and during dynamic pipe ramming (DPR) operations, written notice to swimmers
and divers shall be posted at area dive shops and along the beach within 1,500
feet of the DPR site indicating that swimming and diving in the Project area may
be harmful due to underwater noise impacts during DPR operations. The notice
shall state that the Project area should be avoided during the DPR operation
period, which shall be identified on the notice along with a map showing the
Project area and suggested area of preclusion for divers and swimmers. The
notice will also provide a contact name and phone number.

This notice may be a supplement by the notice described in **MM NOI-1** above.

**MM NOI-4: Observation and Removal of Divers and Swimmers from Waters
in Project Area.** Marine wildlife monitors (MWMs) onboard Project vessels shall
be instructed to observe for non-Project-related divers or swimmers in or about to
enter the safety zone established for marine wildlife; however, the safety zone for
human divers and swimmers may be modified based on the sound source
characterization to be conducted for dynamic pipe ramming. If such persons are
observed by MWMs or vessel crews, a support vessel shall be mobilized to
inform them that their presence is not allowed in the Project safety zone, and the
vessel crew shall arrange for them to be escorted from the active survey area.

**b) Result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?**

**Less than Significant Impact.** The Project would require the use of terrestrial
construction equipment and vehicles; however, none of the equipment or vehicles are
expected to create any greater vibration than that associated with the common garbage
truck. Additionally, the construction site is distant enough from sensitive receptors (i.e.,
residences are located about 1,400 feet south of the fuel oil submarine pipeline landfall)
that vibrations from the Project would not be noticeable to these receptors; therefore, the impact would be less than significant.

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. The Project would result in a short-term increase in noise as a result of decommissioning activities; however, the Project would not result in a substantial permanent increase in ambient noise levels above existing levels; therefore, there would be no impact.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant with Mitigation. See response for a) above.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Project is not located within the Noise Hazard Area as identified in the McClellan-Palomar Airport Land Use Compatibility Plan (San Diego County Airport Land Use Commission 2010). As a result, the Project would not expose residents or workers in the Project area to excessive noise associated with aviation; therefore, there would be no impact.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Project site is not in the vicinity of a private airstrip; therefore, there would be no impact.

3.12.4 Mitigation Summary

Implementation of the following mitigation measure(s) would reduce the potential for Project-related noise impacts to less than significant.

- MM NOI-1: Advanced Noticing.
- MM NOI-2: Shielding of Stationary Equipment.
- MM NOI-3: Advanced Notice to Swimmers and Divers.
- MM NOI-4: Observation and Removal of Divers and Swimmers from Waters in Project Area.
3.13 POPULATION AND HOUSING

<table>
<thead>
<tr>
<th>POPULATION AND HOUSING – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
</tbody>
</table>

3.13.1 Environmental Setting

The EPS is located in the City of Carlsbad, whose population is growing at a rate three times that of the region as a whole. From 2000 to 2010, the City of Carlsbad's population grew from 78,274 to 105,328 people, with a projected population of 117,700 people by 2020. A review of employment characteristics for Carlsbad, as shown in the Housing Element, indicates that of its employed residents, 5 percent are employed under the category of “Construction/Extraction/Maintenance” (City of Carlsbad 2014c). For comparison, 8 percent of the employed population in the County of San Diego falls into this category of employment (City of Carlsbad 2014a).

There were 44,422 housing units of all types within the City of Carlsbad in 2010 (City of Carlsbad 2014a). Of these, 52 percent were single-family detached. The remaining units were single-family attached, multi-family, mobile homes, and other. The overall housing vacancy rate in 2010 was 7.4 percent; however, this rate does not take into account the number of second homes that are in Carlsbad that are not available for sale or rent. Of the units available, the for-sale vacancy rate was 0.8 percent and the rental vacancy rate was 1.6 percent.

3.13.2 Regulatory Setting

3.13.2.1 Federal and State

No Federal or State laws relevant to this issue area are applicable to the Project.
The City of Carlsbad (2014b) Draft General Plan Housing Element addresses housing in the city; however, because the Project is a short-term decommissioning project, there are no relevant goals, objectives, or policies applicable to onshore Project activities.

### 3.13.3 Impact Analysis

**a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**Less than Significant Impact.** The Project would not induce substantial population growth in the area, either directly or indirectly. The Project is a short-term and would not provide new housing or long-term employment. Short-term construction employment opportunities would be created, many of which would be for persons with specialized skills (e.g., marine vessel, equipment operators). These workers are expected to come from the Project region or be mobilized from ports in Southern California. As such, no demand for additional permanent housing would result; therefore, the impact would be less than significant.

**b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The Project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. The Project is short-term and workers are expected to come from the Project region or be mobilized from Ports in Southern California. As such, the Project would not displace existing housing; therefore, there would be no impact.

**c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The Project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. The Project is short-term and workers are expected to come from the Project region or be mobilized from Ports in Southern California. As such, the Project would not displace people from the area; therefore, there would be no impact.

### 3.13.4 Mitigation Summary

The Project would not result in significant impacts to population and housing; no mitigation is required.
3.14 PUBLIC SERVICES

<table>
<thead>
<tr>
<th>PUBLIC SERVICES</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire protection?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Police Protection?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Schools?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Parks?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Other public facilities?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

3.14.1 Environmental Setting

The Project is located in and offshore of the City of Carlsbad, which provides its citizens with public services within city limits. Onshore and offshore service providers are listed below in Table 3.14-1.

Table 3.14-1. Summary of Public Service Providers

<table>
<thead>
<tr>
<th>Service</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Protection</td>
<td>Carlsbad Fire Department</td>
</tr>
<tr>
<td>Police Protection</td>
<td>Carlsbad Police Department</td>
</tr>
<tr>
<td>Schools</td>
<td>Carlsbad Unified School District</td>
</tr>
<tr>
<td>Parks</td>
<td>Carlsbad Parks and Recreation Department</td>
</tr>
<tr>
<td>Other: Maritime Law Enforcement</td>
<td>U.S. Coast Guard, Station San Diego</td>
</tr>
</tbody>
</table>

Fire Protection

The Carlsbad Fire Department includes a Fire Prevention Division and citywide Emergency Preparedness Division, including the Community Emergency Response Team and Hazard Mitigation Programs (City of Carlsbad 2015b). The closest fire stations to the Project site are Fire Stations No. 1 and No. 3, located in north Carlsbad approximately 1.5 miles north and northeast, respectively (City of Carlsbad 2015c).
Police Protection

Law enforcement services in the Project area are provided by the Carlsbad Police Department. The Carlsbad Police Department employs 162 full-time personnel, of which 114 are sworn officers (City of Carlsbad 2015d). The Carlsbad Police Department is located approximately 4 miles east of the Project site. The San Diego County Sheriff is located approximately 5.5 miles northeast of the Project site.

Schools

Carlsbad Unified School District provides elementary and secondary education in the City of Carlsbad. There are no schools located adjacent to the Project site. The closest school to the Project site is Jefferson Elementary School, located 0.95 mile north of the Project site (Carlsbad Unified School District 2014).

Parks

Impacts to parks are discussed in Section 3.15, Recreation.

Maritime Law Enforcement

The U.S. Coast Guard (USCG) is responsible for maritime law enforcement. The USCG Sector San Diego office is located approximately 30 miles south of the Project site. This station enforces Federal Law from the U.S.-Mexico border to as far north as San Mateo Point (USCG 2015). In the event of an unauthorized spill to the marine environment, the USCG National Response Center would direct and assist with cleanup efforts.

3.14.2 Regulatory Setting

3.14.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.14-1.

Table 3.14-2. Laws, Regulations, and Policies (Public Services)

| U.S. Code of Federal Regulations | • Under 29 CFR 1910.38, whenever an Occupational Safety and Health Administration (OSHA) standard requires one, an employer must have an Emergency Action Plan that must be in writing, kept in the workplace, and available to employees for review. An employer with 10 or fewer employees may communicate the plan orally to employees. Minimum elements of an emergency action plan are: 
  o Procedures for reporting a fire or other emergency; 
  o Procedures for emergency evacuation, including type of evacuation and exit route assignments; 
  o Procedures to be followed by employees who remain to operate critical plant operations before they evacuate; |
|---------------------------------|--------------------------------------------------------------------------------------------------|
### Table 3.14-2. Laws, Regulations, and Policies (Public Services)

<table>
<thead>
<tr>
<th>CA</th>
<th>California Code of Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Under <strong>Title 19, Public Safety</strong>, the California State Fire Marshal (CSFM) develops regulations relating to fire and life safety. These regulations have been prepared and adopted to establish minimum standards for the prevention of fire and for protection of life and property against fire, explosion, and panic. The CSFM also adopts and administers regulations and standards necessary under the California Health and Safety Code to protect life and property.</td>
</tr>
</tbody>
</table>

1. **3.14.2.2 Local**

2. The City of Carlsbad (undated[a]) General Plan Public Safety Element contains the following public service goals and objectives relevant to onshore Project activities.

3. • **Goal A (Fire and Emergency Medical Services):** A City which minimizes the injury, the loss of life and damage to property resulting from fire hazards.

4. • **Objective B.5:** To consider, in land use decisions, site constraints in terms of hazards and current levels of emergency service delivery capabilities. In areas where population or building densities may be inappropriate to the hazards present, measures shall be taken to mitigate the risk of life and property loss.

5. • **Goal A (Crime Hazards):** A City which minimizes injury, loss of life, and damage to property resulting from crime.
• Objective B.4: To encourage crime prevention through the planning process by establishing specific design criteria and standards to be used in the review of land use development.

3.14.3 Impact Analysis

a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
• Fire protection?
• Police Protection?
• Schools?
• Parks?
• Other public facilities?

No Impact. The Project is a short-term decommissioning project that does not involve the construction of any residences, buildings, or infrastructure. During decommissioning activities, there is the potential for a temporary increase in demand for fire, police, or maritime law enforcement services; however, the Project is short-term and would not require any additional services outside of those mentioned above and already available. Therefore, there would be no impacts resulting from the Project that would require new or physically altered governmental facilities associated with fire protection, police services, schools, parks, or other public services.

3.14.4 Mitigation Summary

The Project would not result in significant impacts to public services; no mitigation is required.
3.15 **RECREATION**

<table>
<thead>
<tr>
<th>RECREATION</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
</tbody>
</table>

### 3.15.1 Environmental Setting

The EPS is fronted by Carlsbad Boulevard and Carlsbad State Beach. Carlsbad State Beach and the Pacific Ocean provide recreational benefits such as opportunities for surfing, swimming, walking, nature observations, and other uses. Additionally, as shown in the City of Carlsbad (2013b) Circulation Element, Carlsbad Boulevard is designated as a bicycle route. The Agua Hedionda Lagoon is also a proximate recreational amenity. According to the Agua Hedionda Lagoon Foundation (2014) website, recreational activities associated with the Lagoon include a YMCA day camp, recreational boating, a mussel and abalone aquaculture facility, and a white-sea bass breeding and research facility. The Lagoon also provides opportunities for hiking, bird watching, wildlife photography and fishing.

In addition to the shoreline areas, the City of Carlsbad (2003) General Plan Parks and Recreational Element describes two other recreational areas within the Project vicinity. These include Cannon Park, located approximately 0.3 mile south of the nearshore 20-inch pipe landing and Cannon Lake located approximately 0.5 mile south of the nearshore 20-inch pipe landing. Cannon Park is designated by the City of Carlsbad as a “Special-Use” area while Cannon Lake is designated as a “Future Special Use Area”.

### 3.15.2 Regulatory Setting

#### 3.15.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.15-1.
Table 3.15-1. Laws, Regulations, and Policies (Recreation)

<table>
<thead>
<tr>
<th>U.S.</th>
<th>CZMA (see Table 1.2).</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Coastal Act Chapter 3 policies (see also Table 1-2)</td>
</tr>
<tr>
<td></td>
<td>Coastal Act Chapter 3 policies applicable to this issue area are:</td>
</tr>
<tr>
<td></td>
<td>• Section 30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.</td>
</tr>
<tr>
<td></td>
<td>• Section 30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.</td>
</tr>
<tr>
<td></td>
<td>• Section 30222. The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.</td>
</tr>
<tr>
<td></td>
<td>• Section 30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.</td>
</tr>
<tr>
<td></td>
<td>• Section 30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.</td>
</tr>
</tbody>
</table>

3.15.2.2 Local

The City of Carlsbad (2003) General Plan Parks and Recreation Element addresses goals, policies, and objectives relating to park and recreation facilities within the city; however, none are relevant to onshore Project activities.

3.15.3 Impact Analysis

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact. As a result of decommissioning activities in the area, it is possible that onshore construction workers may utilize park and recreation facilities in the short-term; however, due to the limited number of workers and the short-term nature of the Project, the Project would not introduce a new population that would create a demand for parks or other recreational facilities. Therefore, this impact is considered less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?
No Impact. Decommissioning activities on the beach would require the temporary removal of the lifeguard tower, which would require the Applicant to obtain a right-of-entry permit from the California Department of Parks and Recreation. However, the Project does not include the construction of recreational facilities, nor would it create a demand for parks and recreational facilities such that new construction would be warranted; therefore, there would be no impact.

3.15.4 Mitigation Summary

The Project would not result in significant impacts to recreation; no mitigation is required.
1 3.16 TRANSPORTATION/TRAFFIC

<table>
<thead>
<tr>
<th>TRANSPORTATION/TRAFFIC – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
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<tr>
<td>e) Result in inadequate emergency access?</td>
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</tr>
<tr>
<td>f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?</td>
<td>☐</td>
<td>☒</td>
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<td>☐</td>
</tr>
</tbody>
</table>

2 3.16.1 Environmental Setting

Regional access to the Project site is provided from the south and the north via I-5. Both Cannon Road and Carlsbad Boulevard provide local access to the Project site. Roadways that would be used for onshore Project activities are described below.

- I-5 is a major north-south freeway with four lanes in each direction near the Project site. Access from I-5 to the EPS and onshore Project areas occurs via Cannon Road. According to the California Department of Transportation (Caltrans 2011), I-5 carried approximately 200,000 average annual daily vehicle trips north of Cannon Road in 2011, and truck traffic accounts for approximately 4.6 percent of all trips in this area.
• Cannon Road is an east-west roadway that connects Carlsbad Boulevard to I-5 south of the Project site. According to the City of Carlsbad (2013b) General Plan Circulation Element, Cannon Road is classified as a major arterial. Major arterials typically limit access to adjacent properties and enable circulation within the city, as well as provide connection to regional roadways and freeways. It is an undivided arterial with two lanes in each direction.

• Tamarack Avenue is an east-west roadway classified as a modified collector street between Carlsbad Boulevard and Skyline Road.

• Carlsbad Boulevard is a north-south roadway that connects the Project site to Cannon Road to the south and Tamarack Avenue to the north. According to the City of Carlsbad (2013b) General Plan, Carlsbad Boulevard is a major arterial. It is a divided arterial with two lanes in each direction with a designated bike route.

Data from the CECP environmental review (CEC 2009) indicate that all area roadways in the Project vicinity were operating at an acceptable level, Level of Service C or better. Truck routes in the City of Carlsbad are defined in the City Municipal Code and are listed below (J. Kim, personal communication, 2014) (routes likely to be used by Project-related traffic are in bold). Trucks must enter the EPS from the south (so that entry into the facility can be made safely via a right turn) and must exit the EPS by making a right turn onto Carlsbad Boulevard heading north.

1. Carlsbad Boulevard from the northerly to the southerly city limits;
2. Carlsbad Village Drive from Carlsbad Boulevard east to I-5 Freeway;
3. Tamarack Avenue from I-5 Freeway to Carlsbad Boulevard;
4. Cannon Road from Carlsbad Boulevard to El Camino Real;
5. I-5 Freeway, northerly city limits to southerly city limits;
6. Palomar Airport Road from Carlsbad Boulevard to easterly city limits;
7. El Camino Real from northerly city limits to southerly city limits;
8. La Costa Avenue from the westerly city limits to El Camino Real;
9. Rancho Santa Fe Road from the southerly city limits to the northerly city limits;
10. Olivenhain Road from the westerly city limits to Rancho Santa Fe Road;
11. Melrose Drive from Palomar Airport Road to the northerly city limits;
12. Faraday Avenue from Cannon Road to the easterly city limits;
13. College Boulevard from Palomar Airport Road to El Camino Real; and
14. El Fuerte Street from Palomar Airport Road to Faraday Avenue.

3.16.2 Regulatory Setting

3.16.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.16-1.
Table 3.16-1. Laws, Regulations, and Policies (Transportation/Traffic)

| U.S. Ports and Waterways Safety Act | This Act provides the authority for the USCG’s program to increase vessel safety and protect the marine environment in ports, harbors, waterfront areas, and navigable waters, including by authorizing the Vessel Traffic Service, controlling vessel movement, and establishing requirements for vessel operation. |
| CA California Vehicle Code | Chapter 2, Article 3 of the Vehicle Code defines the powers and duties of the California Highway Patrol, which has enforcement responsibilities for the vehicle operation and highway use in the State. |
| CA Other | The California Department of Transportation is responsible for the design, construction, maintenance, and operation of the California State Highway System and the portion of the Interstate Highway System in California. |

3.16.2.2 Local

The City of Carlsbad (2013b) General Plan Circulation Element the following transportation/traffic objective applicable to onshore Project activities.

- Objective B.2: To reduce the number and severity of vehicular, bicycle and pedestrian-related accidents.

3.16.3 Impact Analysis

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than Significant with Mitigation. The Project includes decommissioning activities that require land-based operations that would result in congestion and potential safety hazards to pedestrians, bicyclists, and motorists. Movement of workers, construction equipment, and materials would generate short-term vehicular trips for an approximate 6-month period while land-based decommissioning activities occur (a preliminary decommissioning schedule is provided as Table A1-1 in Appendix A).

During any given phase of the Project, an estimated maximum of 25 workers would transit to and from the site. Staging for decommissioning and parking for land-based workers would be provided within the EPS. Five large pieces and several smaller pieces of equipment would be transported to the site and would be in use for most of the work period. Due to the lengthy intervening period between work in the onshore segment and beach segment, this equipment may need to be mobilized to the site on two separate occasions. Flatbed trucks, dump trucks, vacuum trucks, and cement trucks would also need to access the Project site for the transport and removal of recovered materials (e.g., anchors, chains, and pipeline) for recycling or disposal, and to import backfill (beach sand) and cement. An estimated 98 truck trips would be required for these purposes over the 6-month period. Additional land-based trips would be generated at
the Project’s shore base, which would be located at Oceanside Harbor, the Unified Port of San Diego, Port of Long Beach, or Port of Los Angeles.

As shown on Figure 2-17, approximately 150 linear feet of parking area on Carlsbad Boulevard would be used for temporary truck parking during loading operations, which would impact an estimated seven parking spaces (assuming a stall length of 20 to 22 feet). Loading operations would be limited to periods when land-based equipment would be brought to and from the beach and during other limited work tasks in the onshore and beach segments, including: the removal of concrete, rebar, gravel, and riprap from the underpass end structure (four truck trips); the import of beach sand backfill (nine truck trips); and while backfilling the underpass end structure with beach sand (11 truck trips). Although work in the onshore and beach segments would last 6 months (3 months for each segment), the parking spaces would not have be blocked off during that entire period, only during the specific operations previously identified. In order to temporarily block the parking spaces, the City of Carlsbad would require the Applicant to obtain a Right-of-Way Permit. The permit requires that signage be posted a week prior to the blockage and that the parking area be returned to its original condition when it is no longer needed. The City of Carlsbad typically does not require mitigation for temporary closures (J. Geldert, personal communication, July 7, 2014); however, the Applicant would comply with all requirements of the Right-of-Way Permit, including the provision of temporary replacement parking should it be required.

Implementation of the following measures would ensure that potential roadway congestion (levels of service) impacts are avoided or mitigated to less than significant.

**MM TRA-1: Trucks Avoid Peak Hours.** Construction truck traffic affecting State highways shall be confined to hours outside of the peak AM and PM commute periods.

**MM TRA-2: Carpooling.** The contractor shall implement a worker carpool program to minimize the number of vehicular trips required to transport workers to and from the Project site. This measure shall be identified as a requirement in the contractor bid package.

To ensure that potential impacts associated local traffic safety hazards (including hazards to pedestrians, bicyclists, and motorists) are avoided or mitigated to less than significant, the following measure will be implemented.

**MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC) Plan.** A CSTMC Plan shall be developed for review by the City of Carlsbad and implemented. The Plan shall include, but not necessarily be limited to: (1) traffic control strategies; (2) traffic control devices to be used; (3) public awareness strategies; (4) motorist information methods; (5) alternate pedestrian and bicycle
access routing; (6) work zone safety management strategies; and (7) contingency and incident plans.

The Plan would include the requirement that the contractor obtain the necessary Right-of-Way Permit required by the City of Carlsbad.

To ensure that potential impacts to public infrastructure from construction traffic are avoided or reduced to less than significant, the following measure would be implemented.

**MM TRA-4: Protect Infrastructure Improvements.** The Applicant shall ensure that the onshore contractor include proper precautions to protect all existing pavement, curbs, gutters, and drainage structures from unintentional damage during Project construction. Any portion damaged as a result of Project construction shall be repaired or replaced in accordance with current City of Carlsbad Standard Construction Details.

Offshore vessel activity associated with the surf zone and offshore segments may also temporarily interfere with vessels transiting through the marine work area; however, the Project site is located outside of any recognized vessel transit lanes, and marine construction traffic for the Project would abide by all applicable maritime regulations.

To ensure that potential impacts associated with offshore transportation hazards are avoided or reduced to less than significant, the following measure would be implemented.

**MM TRA-5: Local Notice to Mariners.** All offshore operations shall be described in a Local Notice to Mariners to be submitted to the U.S. Coast Guard at least 15 days prior to decommissioning activities.

b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**No Impact.** SANDAG is responsible for regional transportation management in San Diego County. In 2011, the SANDAG Board of Directors adopted the 2050 Regional Transportation Plan and Sustainable Communities Strategy to facilitate a long-term planning strategy for transportation in the region (SANDAG 2014); however, these documents do not include any elements that are applicable to the Project, which is a short-term decommissioning project. Therefore, there would be no impact.

c) **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**
No Impact. The Project would not require increased air traffic or result in any changes to air transportation; therefore, there would be no impact.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant with Mitigation. The Project would result in the temporary introduction of roadway and sidewalk hazards due to construction as detailed in item a) above. Therefore, MM TRA-1 through MM TRA-3 would be implemented to avoid or mitigate safety hazards due to incompatible uses (construction vehicles conflict with motorists, bicyclists and pedestrians) to less than significant.

e) Result in inadequate emergency access?

Less than Significant Impact. The Project may result in a short-term encroachment on Carlsbad Boulevard. In this case, a Right-of-Way Permit from the City of Carlsbad would be required (J. Geldert, personal communication, July 7, 2014). All conditions of the encroachment permit would be implemented and no long-term effect on roadway access would result; therefore, the Project would have a less than significant impact on emergency access.

f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than Significant with Mitigation. The Project would result in the temporary introduction of roadway and sidewalk hazards due to construction as detailed in item a) above. Therefore, MM TRA-1 through MM TRA-3 would be implemented to avoid or mitigate conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities to less than significant.

3.16.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the potential for Project-related impacts to transportation/traffic to less than significant.

- MM TRA-1: Trucks Avoid Peak Hours.
- MM TRA-2: Carpooling.
- MM TRA-4: Protect Infrastructure Improvements.
- MM TRA-5: Local Notice to Mariners.
## 3.17 UTILITIES AND SERVICE SYSTEMS

<table>
<thead>
<tr>
<th>UTILITIES AND SERVICE SYSTEMS – Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
<td>☐</td>
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<td>☒</td>
</tr>
<tr>
<td>c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
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<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
<td>☐</td>
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<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project’s projected demand in addition to the provider’s existing commitments?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
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<tr>
<td>f) Be served by a landfill with sufficient permitted capacity to accommodate the Project’s solid waste disposal needs?</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>g) Comply with federal, state, and local statutes and regulations related to solid waste?</td>
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</table>

### 3.17.1 Environmental Setting

The Project is a short-term decommissioning project that would not result in the construction of new utility or service systems, nor create a new demand for permanent utilities or service systems. With respect to utilities and service systems, the primary needs of the Project include the ability to recycle or dispose of hazardous and non-hazardous waste.

During decommissioning, the Project would require temporary sanitation facilities that would be accomplished through the use of portable toilets and washing stations. Additionally, Project activities would have the potential to generate hazardous and non-hazardous solid waste associated with the removal of the fuel oil submarine pipeline. Potential hazardous waste associated with the Project components, including ACM, LBP, and/or other known and potential unknown contaminants are further discussed in
Section 3.8, Hazardous Materials. All hazardous materials will be taken to a facility authorized to receive these materials.

Within the City of Carlsbad, Waste Management provides residential and commercial trash service through a contract with the city; however, solid waste generated as a result of decommissioning activities would likely be taken to Miramar Landfill for recycling and/or disposal. According to the City of San Diego, the Miramar Landfill has capacity anticipated until 2022 (City of San Diego 2015). The remaining capacity is over 15 million cubic yards (CalRecycle 2015). Disposal of anchors and chains would also require transit to San Diego Harbor, located approximately 35 miles south of the Project site, or to the Port of Long Beach/Port of Los Angeles for transfer to Miramar Landfill.

### 3.17.2 Regulatory Setting

#### 3.17.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.17-1.

<table>
<thead>
<tr>
<th>CA</th>
<th>Coastal Act Chapter 3 policies (see also Table 1-2)</th>
<th>Coastal Act Chapter 3 policies applicable to this issue area are:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Section 30254 states: New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal-dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development. • Section 30254.5 states in part: Notwithstanding any other provision of law, the commission may not impose any term or condition on the development of any sewage treatment plant which is applicable to any future development that the commission finds can be accommodated by that plant consistent with this division.</td>
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</tbody>
</table>

#### 3.17.2.2 Local

There are no local goals, policies, and/or regulations applicable to this issue area that are relevant to the Project.
3.17.3 Impact Analysis

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less than Significant Impact. The Project would be limited to onshore and offshore decommissioning activities and would not exceed the wastewater treatment requirements of the RWQCB. Short-term sanitary needs would be met by existing facilities or systems on Project vessels or platforms and through the use of portable restrooms (the companies providing these services are responsible for complying with the applicable regulations pertaining to the disposal of sanitary waste). Therefore, there would be a less than significant impact to wastewater treatment requirements.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The Project would be limited to onshore and offshore decommissioning activities and would not require or result in the construction of new, or the expansion of existing, water or wastewater treatment facilities. Short-term sanitary needs would be met by existing facilities or systems on Project vessels or platforms and through the use of portable restrooms; therefore, there would be no impact.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Due to the nature of the Project, no additional stormwater drainage facilities or expansion of such facilities would be required; therefore, there would be no impact.

d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. The short-term water needs of the Project would be met by local purveyors. Due to the minimal Project demand for water, no significant impact would result.

e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project’s projected demand in addition to the provider’s existing commitments?

Less than Significant Impact. See response to a) above.
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project’s solid waste disposal needs?

Less than Significant Impact. The Project would result in some decommissioning residuals (e.g., anchors, chains, riprap, piping); however, the volume of these materials would be insubstantial relative to the solid waste stream of the Project area. Additionally, the Applicant proposes to implement the following APM to further reduce the Project’s solid waste disposal needs at landfills.

APM UTI-1: Reuse and Recycle Debris. The decommissioning contractor shall dispose of recovered materials (e.g., anchors, chains, riprap, piping) that can be reused and recycled at an appropriate facility if feasible.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less than Significant Impact. See response to f) above.

3.17.4 Mitigation Summary

The Project would not result in significant impacts to utilities and service systems; no mitigation is required. However, the following APM would further reduce the Project’s less than significant impact to solid waste disposal capacity and would support the intent of State regulations pertaining to solid waste reduction.

• APM UTI-1: Reuse and Recycle Debris.
### 3.18 MANDATORY FINDINGS OF SIGNIFICANCE

The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per State CEQA Guidelines, § 15065).

<table>
<thead>
<tr>
<th>MANDATORY FINDINGS OF SIGNIFICANCE –</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</td>
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<tr>
<td>b) Does the project have impacts that are individually limited, but cumulatively considerable? (&quot;Cumulatively considerable&quot; means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?</td>
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<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</td>
<td>☐</td>
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<td>☐</td>
</tr>
</tbody>
</table>

a) **Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

Less than Significant with Mitigation. As described in this MND, the Project has the potential to significantly impact the following environmental disciplines: Aesthetics, Biological Resources, Cultural and Paleontological Resources, Hazards and Hazardous...
Materials, Hydrology and Water Quality, Noise, and Transportation/Traffic. However, measures have been identified in each environmental discipline’s respected section that would reduce these impacts to a level of less than significant.

b) Does the project have impacts that would be individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less than Significant with Mitigation. Past, current, and reasonably foreseeable projects that are within 0.25 mile of the proposed Project are provided in Table 3.18-1.

**Table 3.18-1. Relevant Cumulative Projects**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Brief Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agua Hedionda Lagoon Dredging</td>
<td>Periodic dredging of Agua Hedionda Lagoon to ensure adequate flow to the cooling water inlet for the EPS.</td>
<td>Periodic dredging</td>
</tr>
<tr>
<td>2. I-5 North Coast Corridor Project</td>
<td>I-5 Freeway improvements from La Jolla Village Drive in the City of San Diego and extend northward (approximately 27 miles) to Harbor Drive in the City of Oceanside.</td>
<td>Pending construction</td>
</tr>
<tr>
<td>3. Carlsbad Desalination Plant</td>
<td>The Carlsbad Desalination Plant is currently being built on industrially zoned land adjacent to the EPS by Poseidon Water.</td>
<td>Under construction</td>
</tr>
<tr>
<td>4. Carlsbad Boulevard Improvement Project</td>
<td>Carlsbad Boulevard improvements would be in support of the City of Carlsbad’s Mobility Element in its draft General Plan. Improvements include: completion of pedestrian and bikeway paths/lanes; construction of a roundabout at the intersection of Cannon Road and Carlsbad Boulevard; and improvements at the intersection of Carlsbad Boulevard and Tamarack Avenue.</td>
<td>Pending construction</td>
</tr>
<tr>
<td>5. PDP 00-02(C) - Agua Hedionda Sewer Lift Station &amp; Gravity &amp; Force Mains</td>
<td>This project extends in a north-south direction from the Agua Hedionda Lagoon to the Encina Water Pollution Control Facility. The project involves the installation of a sewer trunk line (3,960-foot-long force main and a 8,420-foot-long gravity sewer line), a sewer lift station (50 million gallons/day capacity), and a sewer support bridge (140-foot weathered steel span), and improvements to the Vista/Carlsbad Sewer Interceptor System.</td>
<td>Under construction</td>
</tr>
<tr>
<td>6. Carlsbad Energy Center Project</td>
<td>Construction of a new electric generating facility to be sited along the eastern boundary of the EPS that would replace the aging, inefficient EPS Units 1-5 that employ once-through cooling using seawater. Once constructed and operational, the project includes the removal and remediation of existing EPS generating equipment and structures.</td>
<td>Pending construction</td>
</tr>
</tbody>
</table>

As provided in this MND, the Project has the potential to significantly impact the following environmental disciplines: Aesthetics, Biological Resources (Marine), Cultural and Paleontological Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation/Traffic. However, measures have been identified that would reduce these impacts to a level of less than significant. For any
impacts to act cumulatively on any past, present, or any reasonably foreseeable projects, these projects would have to have individual impacts in the same resource areas at the same time and in the same localized area as the proposed Project. Because the potential impacts of the proposed Project could be exacerbated by other projects, the potential for cumulative impacts are described below.

**Aesthetics.** Projects that may impact the same visual receptor locations as the Project include the CECP and the Carlsbad Boulevard Improvement Project (it is anticipated that Agua Hedionda Lagoon Dredging would not occur concurrently with the Project). These projects together with the proposed Project would exacerbate short-term aesthetic impacts. The approved CECP has a requirement for landscape and fence screening of certain visible construction areas (CEC 2009), and the Project would limit onshore decommissioning months outside of the peak public use period. Project-specific mitigation measures (identified in Section 3.1, Aesthetics), and the short-term nature of the proposed Project and other projects in the area, would further mitigate the Project’s contribution to cumulative aesthetic impacts. Therefore, impacts to aesthetics would be less than significant and are not cumulatively considerable.

**Biological Resources (Marine).** There are no identified pending or approved projects in the Project area that, together with the proposed Project, would result in cumulative impacts to marine resources. Therefore, impacts to marine biological resources are not cumulatively considerable.

**Cultural and Paleontological Resources.** Impacts to cultural and paleontological resources are potentially cumulatively significant under any circumstance; however, Project-specific mitigation measures for cultural and paleontological resources (identified in Section 3.5, Cultural and Paleontological Resources) would further mitigate the Project’s contribution to cumulative impacts on these resources. Therefore, impacts associated with cultural and paleontological resources would be less than significant and are not cumulatively considerable.

**Hazards and Hazardous Materials.** Worker and public health hazards associated with the Project are generally site-specific in that they are associated with potential on-site hazardous materials (e.g., LBP, ACM, hydrocarbon-containing soils). However, the potential exposure to toxins may be considered cumulatively significant due to the ubiquitous nature of toxins in the environment. Project-specific mitigation measures for hazardous materials (identified in Section 3.8, Hazards and Hazardous Materials) would further mitigate the proposed Project’s contribution to cumulative hazardous materials impacts. Therefore, impacts associated with hazardous materials would be less than significant and are not cumulatively considerable.

**Hydrology and Water Quality.** Dredging of the Agua Hedionda Lagoon and other construction projects, including the proposed Project, have the potential to result in
water quality impacts to marine and freshwater systems. It is expected that all projects would comply with stormwater pollution management regulations, as well as project-specific mitigation. Project-specific mitigation measures for water quality (identified in Section 3.9, Hydrology and Water Quality) would further mitigate the proposed Project’s contribution to cumulative water quality impacts. Therefore, impacts associated to water quality would be less than significant and are not cumulatively considerable.

Noise. The CECP is the only cumulative project listed above that is close enough (spatially or temporally) to the Project area and of a nature to result in cumulative noise impacts. Noise impacts resulting from the proposed Project would be short-term, and all projects within the City of Carlsbad must comply with Chapter 8.48 of the City’s Municipal Code, which generally limits disturbing or offensive construction noise to the hours between 7:00 a.m. and sunset on weekdays and between 8:00 a.m. and sunset on Saturdays, and prohibits such noise on Sundays and major holidays. Project-specific mitigation measures for noise (identified in Section 3.12, Noise) would further mitigate the proposed Project’s contribution to cumulative noise impacts. Therefore, impacts to noise would be less than significant and are not cumulatively considerable.

Transportation/Traffic. Construction of the CECP and any other project in the vicinity of, and at the same time as, the proposed Project would add traffic to local roadways and could impact the existing traffic load and capacity of the street system. Construction activities could also impact emergency access and parking capacity, encroach on public transportation and pedestrian facilities, and introduce oversized and overweight vehicles. The CECP includes a mitigation measure to address short-term transportation impacts, which requires the project owner to consult with the City of Carlsbad and prepare and submit a construction traffic control plan and implementation program to the Compliance Project Manager for approval. Additionally, Project-specific mitigation measures for transportation and traffic (identified in Section 3.16, Transportation/Traffic) would further mitigate the proposed Project’s contribution to cumulative transportation and traffic impacts. The Project-incorporated mitigation measure MM TRA-3 requires that the Applicant prepare and submit to the City of Carlsbad a Construction Safety and Traffic Management/Control (CSTMC) Plan and obtain “Right-of-Way” Permits from the City. This measure would ensure appropriate coordination with the City of Carlsbad such that proposed improvements to Carlsbad Boulevard and Project implementation would not conflict. With the implementation of mitigation, impacts to transportation and traffic would be less than significant and are not cumulatively considerable.

Recreation/Utilities and Service Systems. The Project requirements for parks and recreation facilities and utilities and service systems (e.g., water, sewage, solid waste disposal capacity) are inconsequential (de minimis) on a cumulative basis due to the short-term duration and nature of the Project. Therefore, impacts to these environmental disciplines would be less than significant and are not cumulatively considerable.
The Project would have no impact on the following environmental disciplines and, therefore, would not contribute to any cumulatively considerable impacts: Agriculture and Forest Resources, Mineral Resources, and Public Services.

Mitigation measures that are required to reduce Project-specific impacts would reduce the proposed Project's contribution to cumulatively significant impacts, as identified above; therefore, no additional mitigation is required.

c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant with Mitigation. As described in this MND, the proposed Project may cause environmental effects that would cause substantial adverse effects on human beings. For detailed information on these environmental effects, please refer to the following environmental disciplines: Aesthetics, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation/Traffic. However, measures are identified in each environmental discipline's respected section that would reduce these impacts to a level of less than significant.
4.0 OTHER MAJOR AREAS OF CONCERN

4.1 COMMERCIAL AND RECREATIONAL FISHING

Coastal waters support both commercial and recreational fishing activities within the Project area, and offshore decommissioning activities associated with the Project have the potential to affect both commercial and recreational fisheries. Although this environmental issue is not included in the California Environmental Quality Act (CEQA) Appendix G Checklist, the California State Lands Commission (CSLC) is including it here due to the location of the Project.

4.1.1 Environmental Setting

The California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game) has established a series of reporting areas (Fish Blocks) within the marine waters offshore California. Each Fish Block is 10° latitude by 10° longitude; however, the area of water covered can be less than 100 square nautical miles due to shoreline irregularities. Each Fish Block is uniquely numbered and commercial fishers and recreational party boat operators report catch by including the Fish Block number within which fish are caught. Summary catch data are available through the CDFW Fisheries Statistics Branch (Los Alamitos, California) and are used to characterize commercial and party boat recreational fishing within a project area. Figure 4.1-1 shows the Fish Blocks within the Project region; the Project is located within Fish Block 822.
Because Fish Block 822 encompasses water depths of up to 2,300 feet and the catch is not separated by water depth at the time of reporting, it may not provide an accurate picture of what type of catch would occur at the Project site. Catch data from the adjacent and inshore Fish Block 821, which has a maximum water depth of about 900 feet and is completely within State waters, are probably more characteristic of the commercial and recreational catch likely to occur within the Project site.

### 4.1.1.1 Commercial Fishing

Table 4.1-1 lists the total reported pounds and value of the commercial catch from these two Fish Blocks for the most recently available 5-year period (2008 through 2012).

<table>
<thead>
<tr>
<th>Year</th>
<th>Fish Block 821</th>
<th>Fish Block 822</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pounds</td>
<td>Value</td>
</tr>
<tr>
<td>2008</td>
<td>38,406</td>
<td>$374,771</td>
</tr>
<tr>
<td>2009</td>
<td>47,368</td>
<td>$329,939</td>
</tr>
<tr>
<td>2010</td>
<td>107,024</td>
<td>$585,812</td>
</tr>
<tr>
<td>2011</td>
<td>44,294</td>
<td>$633,006</td>
</tr>
<tr>
<td>2012</td>
<td>7,772</td>
<td>$85,368</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>244,864</strong></td>
<td><strong>$2,008,896</strong></td>
</tr>
</tbody>
</table>

Source: CDFW unpublished.

For this 5-year period, the combined total commercial catch of three taxa, lobster (134,338 pounds, $1,863,948), market squid (50,935 pounds, $12,734), and all species of crab (27,590 pounds, $23,587) accounted for 87 percent of the total pounds and 95 percent of the total value of the reported catch from Fish Block 821. Within Fish Block 822, the commercial catch for this period was dominated by market squid (1,576,534 pounds, $413,271), sardines (42,196 pounds, $2,386), and lobster (13,426 pounds, $166,237). Combined, these three taxa accounted for 98 percent of the total pounds reported and 95 percent of the total value.

The four most abundant taxa for these two Fish Blocks (lobster, market squid, all species of crab, and sardines) could be expected to be caught within the water depths and seafloor habitats within or adjacent to the Project site. Traps, usually left in-place for 24 to 36 hours, are used to catch crab and lobster, while seine nets are used to catch the pelagic species (squid and sardines). Rocky seafloor habitats would be targeted for lobster, while crab traps are placed in both sedimentary and rocky habitats, depending upon which crab species is being sought. Most of the seining for sardines and squid would be expected to occur within water depths that are shoreward of the State 3-nautical mile limit.
4.1.1.2 Recreational Fishing

The commercial passenger vessel (party boat) recreational fishing catch for the two Fish Blocks is summarized in Table 4.1-2 and includes the number of individuals kept and thrown back.

Table 4.1-2. Commercial Party Vessel (Recreational) Catch (Number of Individuals) from Fish Blocks 821 and 822 (2008–2012)

<table>
<thead>
<tr>
<th>Year</th>
<th>Block</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>821</td>
<td>822</td>
</tr>
<tr>
<td>2008</td>
<td>2,567</td>
<td>16,495</td>
</tr>
<tr>
<td>2009</td>
<td>715</td>
<td>12,031</td>
</tr>
<tr>
<td>2010</td>
<td>928</td>
<td>12,063</td>
</tr>
<tr>
<td>2011</td>
<td>506</td>
<td>13,239</td>
</tr>
<tr>
<td>2012</td>
<td>1,404</td>
<td>10,058</td>
</tr>
<tr>
<td>Total</td>
<td>6,120</td>
<td>63,886</td>
</tr>
</tbody>
</table>

Three taxa (kelp bass [2,118 individuals], barred sand bass [*Paralabrax nebulifer*] [1,015], and Pacific mackerel [983]) contributed 67 percent of the total reported recreational catch for this period within Fish Block 821. The recreational catch from Fish Block 822 was substantially larger than that reported from within Fish Block 821 with four taxa (kelp bass [23,218], Pacific mackerel [12,938], barracuda [11,441] and barred sand bass [7,785]), which contributed 87 percent of the total reported catch. The composition of the catch suggests that party boats target water column (barracuda and mackerel) and both rocky and sedimentary seafloor habitats. The submarine canyons and relatively deep water that is particularly common within Fish Block 822 suggests that most of the party boat fishing occurs within the State 3-nautical mile limit.

4.1.2 Regulatory Setting

4.1.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 4.1-3.

4.1.2.2 Local

There are no local goals, policies, and/or regulations applicable to this issue area.
Table 4.1-3. Laws, Regulations, and Policies (Commercial/Recreational Fishing)

<table>
<thead>
<tr>
<th>CA</th>
<th>Coastal Act Chapter 3 policies (see also Table 1-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Act</td>
<td>Coastal Act Chapter 3 policies applicable to this issue area are:</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>- Section 30234 states: Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.</td>
</tr>
<tr>
<td>Other</td>
<td>- Section 30234.5 states: The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.</td>
</tr>
</tbody>
</table>

CA Other
- California Commercial Fishing Laws and Licensing Requirements. Commercial fishing is regulated by a series of laws passed by the Fish and Game Commission and issued each year in a summary document. Seasonal and gear restrictions within the various CDFW Districts, licensing instructions and restrictions, and species-specific fishing requirements are provided in the document. Most of the MPAs have commercial fishing restrictions (based on the designation of each area), which are also listed in the summary document.
- California Ocean Sport Fishing Regulations. Each year, the Fish and Game Commission issues regulations on the recreational fishing within the marine waters of the State, specifying the fishing season for species, size and bag limits, and gear restrictions, licensing requirements; a section on fishing restrictions within MPAs is also now included.

4.1.3 Impact Analysis

No Federal or State significance criteria for impacts to commercial and recreational fisheries have been established and Appendix G of the State CEQA Guidelines does not list fisheries as a specific resource area. Given the prevalence and importance of recreational and commercial fishing in California, previous CSLC environmental analyses have evaluated the potential loss of available area, reduction of habitat, and/or substantial decrease in the number of organisms of commercial or recreational value as the basis for analyzing impacts. The criteria are generally based on what level of loss of access to fishing areas or seasons would be expected to substantially interfere with or adversely affect commercial or recreational fishers' livelihoods. For this assessment, a significant impact to commercial or recreational fisheries would occur if the following is expected.

a) Fishermen are precluded from 10 percent or more of the fishing grounds during the Project;

Less than Significant Impact. The decommissioning of the offshore MOT and removal of the fuel oil submarine pipeline, including the presence of vessels and anchor lines associated with Project activities, has the potential to preclude fishermen from the offshore Project area (area around the anchored marine vessels required for decommissioning operations). Decommissioning of the offshore and surf zone segments is expected to last approximately 7 months, with the offshore segment...
Other Major Areas of Concern

occurring from September through January and the surf zone segment occurring from
September through early December. During this time, the area at the terminal end of the
fuel oil submarine pipeline within the anchor spreads would not be available to
commercial or recreational fishing activities.

As indicated in Section 4.1.1, the principal taxa representing an estimated 95 percent of
the commercial catch by value in the Project area (Fish Blocks 821 and 822) include
lobster, squid, crab and sardines. Squid and sardines (the two most abundant taxa in
the commercial catch within Fish Block 822) are highly mobile and commercial fishing
for those species occurs throughout the region. Due to the extensive available area to
fish for squid and sardines within the region, the preclusion of the offshore Project area
is not considered significant for fishermen targeting these species.

Decommissioning of the offshore and surf zone segments would partially overlap with
the commercial lobster season, which occurs from October through March (CDFW
2015a); however, because the impacted area is limited to sandy bottom habitat, it is not
an area that would be targeted for trapping lobster. Additionally, the Project’s general
avoidance of hard bottom habitat (where lobster trapping is concentrated) for vessel
anchoring would further reduce the potential for impacts to lobstermen. Therefore,
impacts to lobstermen are expected to be less than significant.

Commercial crab fishing is seasonally unrestricted with the exception of Dungeness
crab; however, Dungeness crab is only occasionally caught south of Monterey,
California (CDFW 2015b) and was not identified in the above referenced catch data for
Fish Blocks 821 and 822. Other species of crab likely to be found in the Project area
based on the catch data include rock crab (yellow, red, and brown) (Cancer sp.) and
spider crab (also referred to as sheep crab [Loxorhynchus granidis]), which may be
found along the entire coast of southern California. The habitat preferences for these
crabs include rocky reefs and kelp beds with the exception of the spider crab, which is
found on soft bottom (CDFW 2015c). Due to the extensive available area to fish for crab
within the region, the temporary preclusion of the offshore Project area is not
considered significant for fishermen targeting these species.

Recreational species targeted in the Project area mainly comprise four taxa: kelp bass,
Pacific mackerel, barracuda, and barred sand bass. All of these species are found along
the entire coast of southern California. However, barracuda and barred sand bass are
more abundant during late spring though early summer and summer, respectively
(Schultze 1983; CDFW 2015d). Due to the limited area of preclusion for recreational
fishing, the temporary nature of the preclusion and the extensive area available to
recreational fishers to pursue these species elsewhere in the vicinity, the impact to
recreational fishing is not considered significant.
As stated above, impacts to commercial and recreational fishing would be less than significant primarily because opportunities to fish for target species are readily available in the Project region and the preclusion of the offshore Project area to fishing would be temporary. Minimizing the number of vessel anchors and the length of anchor lines, which would reduce the size of the necessary preclusion area, would also reduce potential impacts to commercial and recreational fishing. Avoiding the placement of anchors on rocky substrate, the preferred habitat for lobster and most crabs, would further reduce the potential impacts on lobster and crab fishing. Although no mitigation is required, MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP) and MM TRA-5: Local Notice to Mariners incorporated into the Project would further reduce this less than significant impact.

b) The Project alters the seafloor in such a manner as to reduce the availability of that area to commercial or recreational fisheries;

Less than Significant Impact. Exposed segments of the fuel oil submarine pipeline may provide locations along which lobster and crab traps could be oriented and may provide habitat for rockfish species targeted by recreational fishermen; however, due to its limited habitat value, removal of the pipeline would result in less than significant impacts on lobster, crab, and rockfish resources. Additionally, the removal of the pipeline, anchors, and chains would result in a temporary disturbance of seafloor habitat; however, this impact is expected to be short-term and less than significant, with seafloor sedimentary habitat expected to return to pre-removal conditions within three to 6 months of the completion of decommissioning activities. Therefore, the impact would be less than significant.

c) The Project results in loss or damage to commercial fishing equipment;

Less than Significant Impact. The majority of commercial fishing activities in the Project area result in the placement of traps adjacent to hard bottom habitat or purse seine for pelagic species (squid and sardines). Any traps that may be set in the Project area are expected to be in or adjacent to hard bottom areas and away from the immediate work area with the possible exception of spider crab traps. Hard bottom areas will be avoided as provided by MM BIO-6.

Project vessels transiting between local ports and the Project site may result in the potential for fishing gear to be damaged. During pre-Project training, as required under MM BIO-6 and MM BIO-1: Marine Wildlife Contingency Plan (MWCP), Project-related vessel operators are instructed to monitor for fishing gear as they transit to work areas and are instructed to avoid observed gear. Commercial fishers would also be notified and aware of the additional vessel traffic that would be associated with the Project as a result of MM TRA-5: Local Notice to Mariners. As such, the potential for
loss or damage to commercial fishing equipment is unlikely and not considered to be significant.

d) The Project results in a substantial reduction in the Essential Fish Habitat required by one or more of the species managed by the Pacific Fisheries Management Council’s (PFMC) fisheries management plans.

Less than Significant Impact. The Magnuson-Stevens Act defines Essential Fish Habitat (EFH) as those waters and substrate necessary for spawning, breeding, feeding, or growth to maturity (PFMC 1998). Within the Pacific region, the fisheries for coastal pelagic species, Pacific coast groundfish (over 80 species) (PFMC 2005), west coast highly migratory species, and west coast salmon species are federally managed and EFH for these species is identified (NOAA 2015).

The offshore Project area is within the EFH for coastal pelagic species (including northern anchovy, Pacific sardine [Sardinops sagax caerulea], Pacific mackerel [Scomber japonicas], Jack mackerel [Trachurus symmetricus], and market squid) (PFMC 2011), groundfish, and certain U.S. west coast highly migratory species (e.g., sharks such as the common thresher shark [Alopias vulpinus], pelagic thresher shark [Alopias pelagicus], and bigeye thresher shark [Alopias superciliosus]) (PFMC 2003, 2005). Additionally, the offshore Project area includes canopy kelp and hard bottom substrate (rocky reef), which are both identified as a habitat areas of particular concern (HAPC) (PFMC 2014). The canopy kelp HAPC includes those waters, substrate, and other biogenic habitat associated with canopy-forming kelp species (e.g., Macrocystis spp. and Nereocystis sp.). The rocky reef HAPC includes those waters, substrates, and other biogenic features associated with hard substrate (e.g., bedrock, boulders, cobble, gravel) to the mean higher high water mark.

The Coastal Pelagic Species Fisheries Management Plan (Plan) identifies non-fishing effects on coastal pelagic species EFH. Identified effects that are relevant to the Project include discharge of oil or release of hazardous substances. As stated in the Plan, the discharge of oil or release of a hazardous substance into estuarine and marine habitats, or exposure to a product of reactions resulting from the discharge of oil or a release of a hazardous substance, can have both acute and chronic effects of fish resources and their prey, and also potentially reduce the marketability of target species.

As described in Section 3.4, Biological Resources, an accidental discharge of petroleum products from Project vessels and equipment would have the potential to impact marine resources and EFH identified above. Additionally, although the fuel oil submarine pipeline has been flushed and pigged, it is possible that residual petroleum products and the biocide associated with the Nalco EC6106A preservative could be released into the water column, potentially impacting EFH. Effects of the biocide from an accidental
discharge of the fuel oil submarine pipeline preservative are addressed in Section 3.4, Biological Resources, and Section 3.8, Hazards and Hazardous Materials.

The Project has the potential to impact hard bottom substrate and kelp as described in Section 3.4, Biological Resources, if anchors and/or anchor lines from Project-related vessels are placed onto hard bottom substrate and kelp. Also as described in Section 3.4, Biological Resources, removal of the pipeline, which is partially exposed on the seafloor, would reduce hard substrate at the Project site; however, the small area of pipeline is not significant and artificial hard bottom is not identified as HAPC.

Although no mitigation is required, implementation of MM BIO-7: Oil Spill Response Plan (OSRP) and MM BIO-8: Flush Fuel Oil Submarine Pipeline already incorporated into the Project would further reduce this less than significant impact. Implementation of MM BIO-6, which is also already incorporated into the Project, would ensure that potential impacts to HAPC remain less than significant.

4.1.4 Mitigation Summary

The Project would not result in significant impacts to commercial and recreational fishing; therefore, no mitigation is required. However, the implementation of the following mitigation measures would further avoid or reduce this less than significant impact:

- MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- MM BIO-7: Oil Spill Response Plan (OSRP).
- MM BIO-8: Flush Fuel Oil Submarine Pipeline.
- MM TRA-5: Local Notice to Mariners.

4.2 CSLC ENVIRONMENTAL JUSTICE POLICY

Environmental justice is defined by California law as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” This definition is consistent with the Public Trust Doctrine principle that the management of trust lands is for the benefit of all the people. The CSLC adopted an environmental justice policy in October 2002 to ensure that environmental justice is an essential consideration in the agency’s processes, decisions, and programs. Through its policy, the CSLC reaffirms its commitment to an informed and open process in which all people are treated equitably and with dignity, and in which its decisions are tempered by environmental justice considerations.
As part of the CSLC environmental justice policy, the CSLC pledges to continue and enhance its processes, decisions, and programs with environmental justice as an essential consideration by:

1) Identifying relevant populations that might be adversely affected by CSLC programs or by projects submitted by outside parties for its consideration;

2) Seeking out community groups and leaders to encourage communication and collaboration with the CSLC and its staff;

3) Distributing public information as broadly as possible and in multiple languages, as needed, to encourage participation in the CSLC’s public processes;

4) Incorporating consultations with affected community groups and leaders while preparing environmental analyses of projects submitted to the CSLC for its consideration;

5) Ensuring that public documents and notices relating to human health or environmental issues are concise, understandable, and readily accessible to the public, in multiple languages, as needed;

6) Holding public meetings, public hearings, and public workshops at times and in locations that encourage meaningful public involvement by members of the affected communities;

7) Educating present and future generations in all walks of life about public access to lands and resources managed by the CSLC;

8) Ensuring that a range of reasonable alternatives is identified when siting facilities that may adversely affect relevant populations and identifying, for the CSLC’s consideration, those that would minimize or eliminate environmental impacts affecting such populations;

9) Working in conjunction with Federal, State, regional, and local agencies to ensure consideration of disproportionate impacts on relevant populations, by instant or cumulative environmental pollution or degradation;

10) Fostering research and data collection to better define cumulative sources of pollution, exposures, risks, and impacts;

11) Providing appropriate training on environmental justice issues to staff and the CSLC so that recognition and consideration of such issues are incorporated into its daily activities;

12) Reporting periodically to the CSLC on how environmental justice is a part of the programs, processes, and activities conducted by the CSLC and by proposing modifications as necessary.
4.2.1 Methodology

The CSLC environmental justice policy does not specify a methodology for conducting programmatic-level analysis of environmental justice issues. Due to the limited extent of the Project’s impacts on the human environment, as established in Section 3 of this document, this section provides a qualitative consideration of the Project’s potential to disproportionately affect low-income or minority communities.

This analysis focuses primarily on whether the Project has the potential to affect areas of high-minority populations and/or low-income communities disproportionately and thus create an adverse environmental justice effect. For the purpose of the environmental analysis, the Project’s inconsistency with the CSLC’s Environmental Justice Policy would occur if the Project would:

- Have the potential to disproportionately affect minority and/or low-income populations adversely; or
- Result in a substantial, disproportionate decrease in employment and economic base of minority and/or low-income populations residing in immediately adjacent communities.

4.2.2 Project Analysis

The proposed Project includes the removal and/or decommissioning of the Encina Power Station (EPS) Marine Oil Terminal (MOT) located in and offshore of the City of Carlsbad, San Diego County. The property under lease from the CSLC includes parcels of tidelands and submerged lands lying immediately west and offshore of Carlsbad State Beach. Onshore decommissioning activities would occur primarily within the EPS property boundary (within U.S. Census Tracts 178.13, 179, and 180; however, work activities would be limited to U.S. Census Tract 178.13 [U.S. Census Bureau 2014a]), but would also extend onto Carlsbad Boulevard and Carlsbad State Beach. Additionally, in order to support offshore decommissioning activities, a shore base would be established and would serve as the local embarkation point for offshore crews and equipment. The shore base for offshore marine operations is unknown at this time; however, the most likely local embarkation point would be Oceanside Harbor due to its proximity to the Project area. If dockage cannot be found there, the shore base may be located in the Port of Long Beach, Port of Los Angeles, or Unified Port of San Diego.

The Project’s limited impact on the human environment is established in various sections of this document. The discussion below considers the Project’s potential to disproportionately affect and low-income or minority communities.
Demographics

As indicated in Table 4.2-1, a summary of the regional demography shows that the proposed Project site (within Tract 178.13) is located within an area consisting of a predominantly white (88.3%), non-minority population. The demographics from Tract 178.13 are consistent with its surroundings, as the City of Carlsbad is also comprised of a predominantly white (82.8%), non-minority community. By comparison, these areas contain considerably less minority populations (11.7 - 17.3%) than the County of San Diego as a whole, which has a minority population of up to 36 percent. However, the adjacent City of Oceanside (where offshore operations would likely originate) includes a minority population of approximately 34.7 percent, which is more consistent with the County of San Diego as a whole.

Table 4.2-1. U.S. Census Regional Demographic Comparisons (2010)

<table>
<thead>
<tr>
<th>County/City /Tract</th>
<th>Total Population</th>
<th>White Population (%)</th>
<th>Black or African American</th>
<th>American Indian and Alaska Native</th>
<th>Asian</th>
<th>Native Hawaiian and Other Pacific Islander</th>
<th>Two or More Races</th>
<th>Some Other Race</th>
<th>Minority Population (%)</th>
<th>Persons of Hispanic or Latino Origin From Total Population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tract 178.13</td>
<td>4,106</td>
<td>88.3</td>
<td>0.6</td>
<td>0.4</td>
<td>5.5</td>
<td>0.1</td>
<td>3.1</td>
<td>2.0</td>
<td>11.7</td>
<td>7.9</td>
</tr>
<tr>
<td>City of Carlsbad</td>
<td>105,328</td>
<td>82.8</td>
<td>1.3</td>
<td>0.5</td>
<td>7.1</td>
<td>0.2</td>
<td>4.2</td>
<td>4.0</td>
<td>17.3</td>
<td>13.3</td>
</tr>
<tr>
<td>City of Oceanside</td>
<td>167,086</td>
<td>65.2</td>
<td>4.7</td>
<td>0.8</td>
<td>6.6</td>
<td>1.3</td>
<td>5.8</td>
<td>15.5</td>
<td>34.7</td>
<td>35.9</td>
</tr>
<tr>
<td>County of San Diego</td>
<td>3,095,313</td>
<td>64.0</td>
<td>5.1</td>
<td>0.9</td>
<td>10.9</td>
<td>0.5</td>
<td>5.1</td>
<td>13.6</td>
<td>36.0</td>
<td>52.3</td>
</tr>
</tbody>
</table>


Hispanic and Latino persons are considered minority persons, which is consistent with Federal and State environmental justice policies. However, as characterized in the U.S. Census data, above, Hispanic or Latino persons may fall within or identify with any racial category (e.g., White, Black, Native American). Because an unspecified percentage of Hispanic or Latino persons identify themselves as White, the U.S. Census data do not include Hispanic or Latino in the category of “ethnic minorities.” As a result, for a given population, the total percentage of persons belonging to “ethnic minorities,” as listed in Table 4.2-1, underestimates the actual percentage of minority community members. Since Hispanic and Latino persons represent a substantial portion of the minority communities within the Project area, the percentage of each area’s population identifying themselves as Hispanic or Latino is summarized below. As shown in Table 4.2-1, approximately 7.9 percent of persons within the Project area in Tract...
178.13 classify themselves as being of Hispanic or Latino decent. This is relatively consistent with the City of Carlsbad, where approximately 13.3 percent of persons classify themselves as being Hispanic or Latino; however, with respect to the ethnic minority populations listed above, these percentages are considerably lower than the adjacent City of Oceanside (35.9%) and the County of San Diego as a whole (52.3%).

**Socioeconomics**

As shown in Table 4.2-2, the Project site and surrounding areas (within U.S. Census Tract 178.13) contain the highest incomes (approximately $53,875 per capita and $102,768 per median family) and the lowest percentage of individuals (5.7%) or families (5.3%) below the established poverty level compared to the City of Carlsbad the nearby City of Oceanside, and the County of San Diego.

<table>
<thead>
<tr>
<th>County/City/Tract</th>
<th>Per Capita Income</th>
<th>Median Household Income</th>
<th>Median Family Income</th>
<th>Percentage of Individuals below Poverty Level</th>
<th>Percentage of Families Below Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tract 178.13*</td>
<td>$53,875</td>
<td>$90,136</td>
<td>$102,768</td>
<td>5.7%</td>
<td>5.3%</td>
</tr>
<tr>
<td>City of Carlsbad</td>
<td>$44,142</td>
<td>$82,681</td>
<td>$104,505</td>
<td>11.9%</td>
<td>9.5%</td>
</tr>
<tr>
<td>City of Oceanside</td>
<td>$25,944</td>
<td>$48,375</td>
<td>$56,546</td>
<td>16.7%</td>
<td>12.6%</td>
</tr>
<tr>
<td>County of San Diego</td>
<td>$30,844</td>
<td>$61,426</td>
<td>$71,608</td>
<td>15.2%</td>
<td>11.3%</td>
</tr>
</tbody>
</table>

Sources: *U.S. Census Bureau, 2008-2012 American Community Survey 5-Year Estimates (DP03) (U.S. Census Bureau 2014c) and U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates (DP03) (U.S. Census Bureau 2014d).*

**Onshore, Beach, and Surf Zone Decommissioning Activities**

As indicated in Tables 4.2-1 and 4.2-2, the onshore decommissioning area (including the onshore, beach, and surf zone segments) within the EPS and the City of Carlsbad contains a small percentage of minority and low-income populations. In comparison to regional demographics, the Project area shows a lower percentage of minority and low-income populations than the surrounding communities or the County of San Diego as a whole. As such, onshore decommissioning activities would not result in a disproportionate impact on high-minority populations or low-income communities. Additionally, the short-term duration of onshore decommissioning activities (up to 90 days for each segment over two seasons) and the limited number of crew members (approximately 18 to 25 persons) would not result in a significant increase in traffic or need for long-term housing in nearby communities. Finally, the Project would not decrease the number of employment opportunities for minority and/or low-income populations in adjacent communities because the Project is limited to the short-term decommissioning of idle infrastructure.
As discussed in Section 4.1, decommissioning activities would also have the potential to preclude fishing activities from the Project area or result in damage to fishing gear due to the presence of Project vessels and anchor lines. As mentioned above, decommissioning activities in the beach and surf zone segments would occur for up to 90 days during the Project’s second season. Project-incorporated measures including MM BIO-6 and MM TRA-5 would reduce the potential impacts of anchors and anchor lines to hard bottom habitat and fishing gear and would notify mariners of Project activities, respectively. Following decommissioning, no further preclusion would be required and seafloor conditions would return to pre-removal conditions within 3 to 6 months. As a result, no long-term socioeconomic impacts to commercial or recreational fishers would result.

Therefore, onshore, beach, and surf zone decommissioning activities associated with the Project are consistent with the CSLC Environmental Justice Policy.

4.2.2.2 Offshore Decommissioning Activities

Offshore decommissioning activities would occur over approximately 120 days during the first season of the Project and would require approximately 25 crew members and five offshore vessels for the duration of these activities. Offshore decommissioning activities have been scheduled to avoid the summer season in order to minimize potential impacts to users of Carlsbad State Beach. The shore base for marine operations is unknown at this time, however, the most likely local embarkation point would be Oceanside Harbor, which is located approximately 6 miles north of the offshore worksite. During decommissioning, a majority of offshore personnel would likely be housed on vessels, however, others may require temporary housing (hotels) near the selected shore base (e.g., Oceanside Harbor) for up to 4 months. As a result, the addition of offshore crew members for up to 4 months would contribute to a slight increase in housing demand and local traffic in the temporary host community/communities. Although the City of Oceanside has a slightly larger population consisting of minority and low-income persons than the Project site and surrounding areas (within U.S. Census Tract 178.13), the City of Oceanside does not contain a majority of minority populations (34.7%); and its percentage of minority populations is consistent with the percentage of minority populations in San Diego County as a whole (36.0%). A disproportionate impact to low-income or minority populations would not result in association with offshore crew lodging due to the short-term nature of the Project and minor addition of personnel and traffic to the City of Oceanside.

As discussed in Section 4.1, decommissioning activities would also have the potential to preclude the offshore Project area from fishing activities or result in damage to fishing gear due to the presence of Project vessels and anchor lines. As mentioned above, these activities would occur for approximately 120 days during offshore decommissioning. Project-incorporated measures including MM BIO-6 and MM TRA-5
would reduce the potential impacts of anchors and anchor lines to hard bottom habitat and fishing gear and would notify mariners of Project activities, respectively. Following decommissioning, no further preclusion would be required and seafloor conditions would return to pre-removal conditions within 3 to 6 months. As a result, no long-term socioeconomic impacts to commercial or recreational fishers would result.

Therefore, offshore decommissioning activities associated with the Project are consistent with the CSLC Environmental Justice Policy.

4.2.3 Mitigation Summary

The Project would not result in significant impacts to environmental justice populations; therefore, no mitigation is required. However, the implementation of the following Project-incorporated mitigation measures would further avoid or reduce this less than significant impact.

- MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- MM TRA-5: Local Notice to Mariners.
5.0 MITIGATION MONITORING PROGRAM

The California State Lands Commission (CSLC) is the lead agency under the California Environmental Quality Act (CEQA) for the Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project). In conjunction with approval of this Project, the CSLC adopts this Mitigation Monitoring Program (MMP) for implementation of mitigation measures (MMs) for the Project to comply with Public Resources Code section 21081.6, subdivision (a) and State CEQA Guidelines sections 15091, subdivision (d) and 15097.

The Project authorizes Cabrillo Power I LLC (Applicant) to decommission the existing non-operational Encina Marine Oil Terminal (MOT), which is part of the Encina Power Station (EPS), in accordance with the terms and conditions of its existing CSLC Lease PRC 791.1.

5.1 PURPOSE

It is important that significant impacts from the Project are mitigated to the maximum extent feasible. The purpose of a MMP is to ensure compliance and implementation of MMs; this MMP shall be used as a working guide for implementation, monitoring, and reporting for the Project’s MMs.

5.2 ENFORCEMENT AND COMPLIANCE

The CSLC is responsible for enforcing this MMP. The Project Applicant is responsible for the successful implementation of and compliance with the MMs identified in this MMP. This includes all field personnel and contractors working for the Applicant.

5.3 MONITORING

The CSLC staff may delegate duties and responsibilities for monitoring to other environmental monitors or consultants as necessary. Some monitoring responsibilities may be assumed by other agencies, such as affected jurisdictions, cities, and/or the California Department of Fish and Wildlife (CDFW). The CSLC and/or its designee shall ensure that qualified environmental monitors are assigned to the Project.

Environmental Monitors. To ensure implementation and success of the MMs, an environmental monitor must be on site during all Project activities that have the potential to create significant environmental impacts or impacts for which mitigation is required. Along with the CSLC staff, the environmental monitor(s) are responsible for:

- Ensuring that the Applicant has obtained all applicable agency reviews and approvals;
• Coordinating with the Applicant to integrate the mitigation monitoring procedures during Project implementation (for this Project, many of the monitoring procedures shall be conducted during the deconstruction phase); and

• Ensuring that the MMP is followed.

The environmental monitor shall immediately report any deviation from the procedures identified in this MMP to the CSLC staff or its designee. The CSLC staff or its designee shall approve any deviation and its correction.

Workforce Personnel. Implementation of the MMP requires the full cooperation of Project personnel and supervisors. Many of the MMs require action from site supervisors and their crews. The following actions shall be taken to ensure successful implementation.

• Relevant mitigation procedures shall be written into contracts between the Applicant and any contractors.

• For this Project, a marine wildlife training seminar (under MM BIO-1: Marine Wildlife Contingency Plan (MWCP)) for all Project personnel working in the marine environment would be held as part of a Project kickoff meeting wherein Project mitigation would be discussed.

General Reporting Procedures. A monitoring record form shall be submitted to the Applicant, and once the Project is complete, a compilation of all the logs shall be submitted to the CSLC staff. The CSLC staff or its designated environmental monitor shall develop a checklist to track all procedures required for each MM and shall ensure that the timing specified for the procedures is followed. The environmental monitor shall note any issues that may occur and take appropriate action to resolve them.

Public Access to Records. Records and reports are open to the public and would be provided upon request.

5.4 MITIGATION MONITORING TABLE

This section presents the mitigation monitoring table (Table 5-1) for the following environmental disciplines: Aesthetics, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation/Traffic. All other environmental disciplines were found to have less than significant or no impacts and are, therefore, not included below. Additionally, Applicant-proposed measures (APMs) would be implemented, as feasible, to further minimize less than significant impacts for the following environmental disciplines: Air Quality, Biological Resources, Greenhouse Gas Emissions, and Utilities and Service Systems.
These APMs are included here for the purpose of tracking. The table lists the following information by column:

- Potential Impact (impact number, title, and impact class);
- Mitigation [or Applicant-Proposed] Measure (full text of the measure);
- Location (where impact occurs and mitigation measure should be applied);
- Monitoring/Reporting Action (action to be taken by monitor or Lead Agency);
- Timing (before, during, or after construction; during operation, etc.);
- Responsible Party; and
- Effectiveness Criteria (how the agency can know if the measure is effective).
### Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Mitigation Measure (MM)</th>
<th>Location</th>
<th>Monitoring/Reporting Action</th>
<th>Timing</th>
<th>Responsible Party</th>
<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aesthetics</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Scenic Vista View Impact</td>
<td><strong>MM AES-1: Project Scheduling.</strong> Onshore Project decommissioning shall be conducted outside of the peak public beach/ocean-use periods (summer [May 31 to September 5] and weekends) in order to minimize the number of viewers affected by the Project to the extent feasible. Exceptions allowing weekend work may occur in certain limited cases such as when work requires an extreme low tide that only occurs on a weekend.</td>
<td>Onshore</td>
<td>Review Project schedule and observe Project implementation for consistency with approved schedule</td>
<td>Throughout Project</td>
<td>Applicant and CSLC</td>
<td>Peak beach-use periods avoided</td>
</tr>
<tr>
<td></td>
<td><strong>MM AES-2: Night-Lighting Spillage Minimization.</strong> Night-lighting required for Project decommissioning activities shall be shielded and directed to the immediate work area to avoid light spillage onto private property.</td>
<td>Onshore/Offshore</td>
<td>Observe nighttime lighting positioning for compliance</td>
<td>During nighttime work</td>
<td>Applicant and CSLC</td>
<td>Off-site light spillage minimized</td>
</tr>
<tr>
<td><strong>Air Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Emissions and Greenhouse Gases</td>
<td><strong>APM AIR-1: Air Emissions Compliance Program.</strong> The Project will incorporate an Air Emissions Compliance Program to ensure that Project emissions are in conformance with the approved Project. This Program will provide detailed information regarding the internal combustion engines used, the duration of use, the fuel consumed, and the calculated emissions.</td>
<td>Onshore/Offshore</td>
<td>Review Project elements for compliance with Program</td>
<td>Throughout Project</td>
<td>Applicant and CSLC</td>
<td>Program criteria met (e.g., limits on duration of engine use, engine types used, fuel consumed)</td>
</tr>
<tr>
<td></td>
<td><strong>APM AIR-2: Low-Emission Engines – Offshore.</strong> Use marine vessels and offshore equipment with low emissions engines, certified to meet Federal Tier III requirements, if available.</td>
<td>Offshore</td>
<td>Document engines used or attempts to obtain Tier 3 engines</td>
<td>Throughout offshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Reduce Project emissions from offshore and onshore engines</td>
</tr>
<tr>
<td></td>
<td><strong>APM AIR-3: Low-Emission Engines – Onshore.</strong> Use heavy equipment onshore with the best available low emissions engines (Tier III or IV), if available.</td>
<td>Onshore</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>APM AIR-4: Mobilize from Nearest Port.</strong> Mobilize marine vessels and equipment from the nearest port.</td>
<td>Offshore</td>
<td>Document base port location</td>
<td>Throughout offshore</td>
<td>Applicant and CSLC</td>
<td>Minimize emissions</td>
</tr>
</tbody>
</table>
## Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Mitigation Measure (MM)</th>
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<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>nearest port supporting these vessels.</td>
<td></td>
<td></td>
<td></td>
<td>Project operations</td>
<td></td>
<td>associated with trips from base port to Project site</td>
</tr>
<tr>
<td>APM AIR-5: Dispose Materials at Nearest Port. Dispose of recovered anchors and associated materials at the nearest port accepting these materials.</td>
<td>Offshore</td>
<td>Document recovered offshore material disposal sites</td>
<td>Throughout offshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Minimize emissions associated with trips from the Project site to materials disposal site</td>
<td></td>
</tr>
<tr>
<td>APM AIR-6: Low-Sulfur Fuel. All diesel-powered equipment used during the Project shall use diesel fuel with a sulfur content of 15 parts per million (ppm) or less.</td>
<td>Onshore/Offshore</td>
<td>Document fuel source and type used</td>
<td>Throughout Project operations</td>
<td>Applicant and CSLC</td>
<td>Minimize emissions associated with fuel type used</td>
<td></td>
</tr>
<tr>
<td><strong>Biological Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grunion Spawning</td>
<td>APM BIO-1a: Grunion Avoidance. Intertidal activities will be scheduled outside of the grunion spawning season, which is generally three or four nights after the highest tide associated with each full or new moon and then only for a 1- to 3-hour period each night following high tide from late February or early March to August or early September.</td>
<td>Beach/Surf Zone</td>
<td>Retain final Project schedule and conduct site visits</td>
<td>February through September</td>
<td>Applicant and CSLC</td>
<td>Project operations on beach avoided during grunion spawning</td>
</tr>
<tr>
<td></td>
<td>APM BIO-1b: Grunion Surveys and Avoidance. If scheduling is not possible under APM BIO-1a, intertidal grunion surveys will be conducted during grunion spawning tidal periods to document that grunion have not used the site. Intertidal activities shall not occur if grunion spawning is observed in the Project area.</td>
<td>Beach/Surf Zone</td>
<td>Retain copy of grunion surveys</td>
<td>February through September</td>
<td>Applicant and CSLC</td>
<td>Project operations on beach avoided during grunion spawning</td>
</tr>
<tr>
<td>Spread of Non-Native Aquatic Species</td>
<td>APM BIO-2: Prevent Introduction of Non-Native Aquatic Species (NAS). All Project vessels shall: (1) originate from Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay; (2) be Hull cleaning/biofouling removal to Retain Biofouling Removal and Hull Husbandry Biofouling removal Prior to Project</td>
<td></td>
<td></td>
<td>Applicant and CSLC</td>
<td>Introduction of NAS avoided Vessel operators made aware of</td>
<td></td>
</tr>
</tbody>
</table>
Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Mitigation Measure (MM)</th>
<th>Location</th>
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<th>Responsible Party</th>
<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>(NAS)</td>
<td>continuously based out of Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay since last dry docking; or (3) have underwater surfaces cleaned before entering southern California at vessel origination point and immediately prior to transiting to the Project site. Additionally, and regardless of vessel size, ballast water for all Project vessels must be managed consistent with California State Lands Commission (CSLC) ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff. Project vessels shall also be available for inspection by CSLC staff for compliance. Further, as part of the Project kickoff meeting, a qualified marine biologist, approved by CSLC staff, shall provide information to all Project personnel about the spread of NAS in California waters and the programs (CSLC Ballast Water Management Program and Biofouling Removal and Hull Husbandry Reporting) that will be implemented to minimize this hazard.</td>
<td>Offshore</td>
<td>Reporting Forms Conduct ROV survey for compliance with biofouling removal Retain Project kickoff meeting sign-in sheet</td>
<td>vessels transiting to Project site Submit Biofouling Removal and Hull Husbandry Reporting Forms prior to Project operations ROV survey conducted prior to Project operations During Project kickoff meeting</td>
<td>Applicant and CSLC</td>
<td>NAS regulations</td>
</tr>
<tr>
<td>Marine Vessel and Wildlife Interaction</td>
<td><strong>MM BIO-1: Marine Wildlife Contingency Plan (MWCP).</strong> A MWCP shall be prepared for review and approval by California State Lands Commission staff prior to the commencement of decommissioning activities. The MWCP shall include, but not be limited to, the following elements: • Description of the pre-decommissioning training seminar that will be provided to educate Project personnel on identifying marine wildlife in the Project area and to provide an overview of the wildlife mitigation measures to be implemented;</td>
<td>Offshore</td>
<td>Retain MWCP and marine wildlife monitor notes</td>
<td>During all Project activities requiring the use of marine vessels and dynamic pipe ramming</td>
<td>Applicant and CSLC</td>
<td>Vessel- and noise-related impacts to marine wildlife avoided</td>
</tr>
</tbody>
</table>
### Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
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<th>Responsible Party</th>
<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underwater Noise Impact on Marine Wildlife</td>
<td><strong>MM BIO-2: Dynamic Pipe Ramming (DPR) Soft-Start and Ramp-Up Procedure.</strong> The contractor conducting DPR operations shall begin the procedure at a reduced level and repeat the sound producing activity, gradually increasing the intensity of the operation prior to initiating normal construction levels. The duration of the ramp-up during Project operations shall be determined by a qualified marine biologist and based upon the findings of a sound source characterization study for DPR. This procedure shall be used any time DPR operations are initiated.</td>
<td>Surf Zone/Offshore</td>
<td>On-site monitor to verify</td>
<td>During DPR</td>
<td>Applicant and CSLC</td>
<td>Soft-start of DPR alerts wildlife of DPR operations prior to full implementation</td>
</tr>
<tr>
<td></td>
<td><strong>MM BIO-3: Dynamic Pipe Ramming (DPR) Sound Source Characterization.</strong> Prior to DPR operations, a marine acoustics specialist shall be retained to conduct underwater noise measurements during a trial operation of the equipment at the Project site. In coordination with the National Oceanic and Atmospheric Administration (NOAA), the results of the underwater noise measurements shall be used to</td>
<td>Surf Zone/Offshore</td>
<td>Retain copy of sound measurements from underwater acoustic specialist and resulting marine wildlife safety radii</td>
<td>Prior to DPR operations for removal of the surf zone segment of the fuel oil submarine</td>
<td>Applicant and CSLC</td>
<td>Sound source characterization conducted and marine wildlife safety radii determined</td>
</tr>
</tbody>
</table>
Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Mitigation Measure (MM)</th>
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<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>determine preclusion radii for marine wildlife (mammals and reptiles) safety</td>
<td></td>
<td>Pipeline</td>
<td>pipeline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>during DPR operations based on NOAA’s acoustic thresholds in place at the time</td>
<td></td>
<td></td>
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<tr>
<td>of Project operations for permanent and temporary threshold shifts. A copy of the</td>
<td></td>
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<tr>
<td>sound source characterization shall be provided to California State Lands Commission</td>
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<tr>
<td>staff and NOAA within 2 weeks of completion.</td>
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</tr>
</tbody>
</table>

**MM BIO-4: Marine Wildlife Monitoring During Sound Source Characterization and Dynamic Pipe Ramming (DPR).** Qualified marine wildlife monitors (MWMs) shall be onsite and present throughout sound source characterization and DPR operations. Once the marine wildlife preclusion radii (i.e., safety zone) have been determined, MWMs shall be located such that he/she has a clear view of the marine waters within the safety zone and beyond. The MWMs shall indicate that a designated safety zone is clear of marine wildlife (mammals and reptiles) prior to the start of DPR operations and shall have the authority to stop DPR operations if marine wildlife are observed at any time within the safety zone. The initial safety zone to be implemented during sound source characterization will be 1,000 feet. The initial safety zone will be revised to reflect new thresholds for permanent and temporary threshold shifts (PTS and TTS) should they be finalized by the National Oceanic and Atmospheric Administration prior to Project operations. The safety zone to be implemented during DPR will be modified as necessary based on the sound source characterization results and will reflect the PTS and TTS thresholds in place at the time of Project operations.

<table>
<thead>
<tr>
<th>Location</th>
<th>Monitoring/Reporting Action</th>
<th>Timing</th>
<th>Responsible Party</th>
<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surf Zone/Offshore</td>
<td>Retain copy of MWM report</td>
<td>Prior to DPR operations for removal of the surf zone segment of the fuel oil submarine pipeline</td>
<td>Applicant, CSLC, and NMFS</td>
<td>Marine wildlife protected during sound source characterization and DPR</td>
</tr>
<tr>
<td>Potential Impact</td>
<td>Mitigation Measure (MM)</td>
<td>Location</td>
<td>Monitoring/Reporting Action</td>
<td>Timing</td>
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</table>
| Sedimentary Habitat Alteration from Project-generated Debris | **MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris Removal.** The offshore work shall begin and end with seafloor debris surveys. The Applicant’s contractor shall perform a side-scan sonar (with 400% coverage) and bathymetric survey, or multi-beam sonar survey, of the underwater worksite prior to the arrival of the contractor’s marine equipment spread at the worksite. The survey shall encompass the entire underwater worksite bordered by the contractor’s planned derrick barge anchorages plus an offset of approximately 500 feet. Derrick barge anchorages shall be positioned to avoid rock outcroppings and kelp beds. A map shall be produced by the surveyor and shall serve as the baseline for the seafloor conditions at the underwater worksite prior to the start of work.

All surveys employing low-energy geophysical equipment, including remotely operated vehicle surveys, must be conducted by an entity holding a valid geophysical survey permit under the California State Lands Commission’s (CSLC) Low-Energy Offshore Geophysical Permit Program (see www.slc.ca.gov/Programs/OGPP.html). Therefore, the Applicant shall obtain a valid permit prior to initiating the surveys.

After decommissioning work is complete, the contractor shall be required to perform a second side-scan sonar (with 400% coverage) and bathymetric survey in the same underwater work area. The surveyors shall again produce a map of the survey area and use it to identify any items of seafloor debris introduced into the underwater worksite by decommissioning operations. | Offshore | Obtain Offshore Geophysical Survey Permit from the CSLC Retain copies of survey data | Pre-decommissioning survey no more than 90 days prior to prior to marine activities Post-decommissioning surveys and debris removal no more than 90 days after completion of Project activities in the marine environment | Applicant and CSLC | Surveys conducted providing evidence that any Project debris on the ocean floor has been recovered |
### Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Mitigation Measure (MM)</th>
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<th>Monitoring/Reporting Action</th>
<th>Timing</th>
<th>Responsible Party</th>
<th>Effectiveness Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>contractor shall remove all items of debris, if any, related to the offshore tanker berth facilities and operations and the decommissioning work. The Applicant shall provide: (1) the pre-decommissioning survey map to CSLC staff and permitting agencies for approval at least 60 days prior to Project implementation; and (2) the post-decommissioning map to CSLC staff within 30 days of survey completion for agency sign-off.</td>
<td>Offshore</td>
<td>Retain copy of the final MSAP and notes from diver biologist regarding anchor placement</td>
<td>At least 30 days prior to initiation of decommissioning requiring anchoring</td>
<td>Applicant and CSLC</td>
<td>Rocky substrate and kelp beds are avoided during anchor placement</td>
<td></td>
</tr>
<tr>
<td>Impact of Anchor Placement on Rocky Habitat and Kelp Beds</td>
<td>MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP). A final MSAP shall be developed following the analysis of seafloor habitat and bathymetric data to be collected during the pre-decommissioning survey. Additionally, a diver-biologist survey shall be conducted to ensure that all pre-determined vessel anchor locations are positioned in sedimentary habitats and avoid rocky substrate and kelp by at least 50 feet. The final plan shall be submitted to California State Lands Commission staff for review at least 2 weeks prior to the commencement of Project activities.</td>
<td>Offshore</td>
<td>Retain copy of the final MSAP and notes from diver biologist regarding anchor placement</td>
<td>At least 30 days prior to initiation of decommissioning requiring anchoring</td>
<td>Applicant and CSLC</td>
<td>Rocky substrate and kelp beds are avoided during anchor placement</td>
</tr>
<tr>
<td>Accidental Discharge of Petroleum Products into the Marine Environment</td>
<td>MM BIO-7: Oil Spill Response Plan (OSRP). An OSRP has been prepared for the Project. Each Project vessel shall have a copy of the plan and shall maintain the required onboard and subcontracted spill response equipment. Additional shore-based response equipment shall be onsite, which can be used for first-response containment and collection of petroleum that reaches the shoreline. If needed, subcontracted shoreline recovery personnel and additional equipment, as identified in the OSRP shall be deployed to the site to assist in the recovery and disposal of spilled petroleum.</td>
<td>Offshore</td>
<td>Retain copy of OSRP and any incident reports Periodic inspection of vessels and onshore oil spill response equipment</td>
<td>During decommissioning activities in the marine environment</td>
<td>Applicant and CSLC</td>
<td>Discharge of petroleum products into the marine environment are avoided or, if one occurs, it is appropriately handled</td>
</tr>
<tr>
<td>Potential Impact</td>
<td>Mitigation Measure (MM)</td>
<td>Location</td>
<td>Monitoring/ Reporting Action</td>
<td>Timing</td>
<td>Responsible Party</td>
<td>Effectiveness Criteria</td>
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</tr>
<tr>
<td>Accidental Release of Pipeline Water Preservative into Marine Environment</td>
<td><strong>MM BIO-8: Flush Fuel Oil Submarine Pipeline.</strong> Prior to opening the fuel oil submarine pipeline to the ocean during the decommissioning process, this pipeline shall be flushed from its offshore termination to its onshore termination at the beach valve pit with seawater to displace the potable water and preservative. The potable water and preservative mixture shall be recovered at the beach valve pit and transported off-site for treatment and disposal.</td>
<td>Onshore/ Offshore</td>
<td>Site inspection to ensure pipeline was flushed Retain copy of communication indicating that displaced water was disposed at an appropriate facility</td>
<td>Applicant and CSLC</td>
<td>Release of the pipeline water preservative in the marine environment avoided</td>
<td></td>
</tr>
<tr>
<td>Cultural and Paleontological Resources</td>
<td><strong>MM CUL-1: Cultural Resource Training.</strong> A pre-construction meeting, inclusive of agency personnel, shall be organized to educate onsite construction personnel as to the sensitivity of archaeological and tribal cultural resources in the area. If agency personnel cannot attend, the meeting shall be held and documentation of the meeting shall be submitted to those agencies. The Applicant’s personnel shall instruct all construction and Project personnel to avoid removing cultural materials from the Project site. Evidence of compliance with this mitigation measure shall be documented, and provided to California State Lands Commission staff, prior to onshore work.</td>
<td>Document training</td>
<td>Prior to onshore excavations</td>
<td>Applicant and CSLC</td>
<td>Educate workers on the potential for cultural resources</td>
<td></td>
</tr>
<tr>
<td>Disturbance of Archaeological Resources</td>
<td><strong>MM CUL-2: Archaeological and Tribal Cultural Resource Monitoring.</strong> All construction will be confined to previously disturbed areas within the beach valve pit if feasible; however, to ensure no previously unknown archaeological or tribal cultural resources are unintentionally damaged, all excavation shall be monitored by a professional archaeologist and a Native American representative, who shall have the authority to</td>
<td>Onshore</td>
<td>Extended Phase I Subsurface Archaeological Investigation &amp; retain study documentation/ documentation of any additional</td>
<td>Prior to and/or during onshore ground disturbance</td>
<td>Applicant and CSLC</td>
<td>Confine Project disturbance area to previously disturbed areas Any archaeological resources within the Project</td>
</tr>
</tbody>
</table>

Table 5-1. Mitigation Monitoring Program
### Table 5-1. Mitigation Monitoring Program

<table>
<thead>
<tr>
<th>Potential Impact</th>
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</tr>
</thead>
<tbody>
<tr>
<td>temporarily halt or redirect Project construction in the event that potentially significant cultural resources are exposed.</td>
<td></td>
<td></td>
<td>mitigation compliance Alternately, retain monitors’ records and any subsequent mitigation activities (e.g., artifact collection/curation)</td>
<td></td>
<td></td>
<td>disturbance area are identified and appropriately managed</td>
</tr>
</tbody>
</table>

**MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal Cultural Resources are Discovered.** In the event that potentially significant archaeological or tribal cultural resources are discovered any time during construction, all earth disturbing work within the vicinity of the discovery shall be temporarily suspended or redirected until a professional archaeologist and a representative from the culturally affiliated California Native American tribe(s) (tribal representative) as determined by the Native American Heritage Commission have evaluated the nature and significance of the discovery. In the event that a potentially significant archaeological or tribal cultural resource is discovered, Cabrillo Power I LLC, the California State Lands Commission (CSLC), and any local, State or Federal agency with approval or permitting authority over the Project that has requested/required such notification shall be notified. Impacts to previously unknown significant archaeological or tribal cultural resources shall be avoided through preservation in place if feasible. | Onshore/Offshore | Inform Project contractors of archaeological resource notification procedure Document any reported finds including retention of any associated archaeological reports | Throughout ground disturbing Project operations | Applicant and CSLC | Any unanticipated cultural resource finds are avoided until evaluated and mitigated |
<table>
<thead>
<tr>
<th>Potential Impact</th>
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<tbody>
<tr>
<td>Disturbance of Paleontological Resources</td>
<td><strong>MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan.</strong> A qualified paleontologist shall be retained to evaluate the onshore activities and develop a Paleontological Resource Evaluation and Mitigation Plan if Project activities extend into previously undisturbed sedimentary formations. The mitigation plan shall include construction monitoring and collection and archiving of any paleontological finds.</td>
<td>Onshore</td>
<td>Retain paleontologist and resulting report</td>
<td>Throughout onshore ground disturbing Project operations</td>
<td>Applicant and CSLC</td>
<td>Paleontological resources are avoided or appropriately mitigated (e.g., collected and curated)</td>
</tr>
<tr>
<td>Disturbance of Human Remains</td>
<td><strong>MM CUL-5: Proper Disposition of Human Remains.</strong> If human remains are unearthed, State Health and Safety Code section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.98. If the remains</td>
<td>Onshore/Offshore</td>
<td>Retain record of any finds that are investigated as possible human remains</td>
<td>Throughout Project implementation</td>
<td>Applicant and CSLC</td>
<td>Any human remains encountered on the Project site are appropriately managed</td>
</tr>
</tbody>
</table>
### Table 5-1. Mitigation Monitoring Program

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<tr>
<td>Asbestos</td>
<td>MM HAZ-1: Use Certified Asbestos Abatement Contractor. Pipeline removal shall be conducted in accordance with all regulations pertaining to asbestos utilizing a certified asbestos abatement contractor to perform any such work.</td>
<td>Onshore/Offshore</td>
<td>Confirm certified asbestos contractor Conduct site inspections to ensure certified personnel are conducting work</td>
<td>During pipeline removal activities impacting asbestos-containing material</td>
<td>Applicant and CSLC</td>
<td>Asbestos-containing material appropriately handled to avoid health impacts</td>
</tr>
<tr>
<td>Lead-Based Paint (LBP)</td>
<td>MM HAZ-2: Licensed/Certified Lead-Based Paint (LBP) Contractor. A California licensed contractor certified by the California Department of Public Health shall be contracted to accomplish LBP abatement prior to the commencement of onshore demolition and to ensure proper disposal of paint flakes (which must be handled as a hazardous waste), abated pipes, and equipment.</td>
<td>Onshore</td>
<td>Confirm certified LBP contractor Conduct site inspections to ensure certified personnel conducting work</td>
<td>Before decommissioning operations impacting LBP</td>
<td>Applicant and CSLC</td>
<td>LBP health hazard appropriately abated</td>
</tr>
<tr>
<td>Impacted Soil</td>
<td>MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA). An extended Phase I ESA review, as well as the assessment of soils around and in the beach valve pit, shall be conducted to address potential soil contamination issues at the Project site prior to the commencement of decommissioning activities. If contamination is identified, the appropriate measures to address the hazard shall be added to the Contractor Work Plan. This may include excavation and removal of contaminated soil to a legal disposal site, or onsite treatment of contaminated soil. A copy of the Phase 1 ESA Report is retained. Site visits are required to ensure remedial activities are conducted.</td>
<td>Onshore</td>
<td>Retain Extended Phase I ESA Report Conduct site visits to ensure any required remedial activities are conducted</td>
<td>Before start of onshore decommissioning activities</td>
<td>Applicant and CSLC County of San Diego Department of Environmental Health, Hazardous Materials Division</td>
<td>Any on-site contaminated soil is appropriately addressed to ensure that no human or environmental health hazards result from Project activities</td>
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<tr>
<td></td>
<td></td>
<td>Onshore</td>
<td>Retain list of Project</td>
<td>Onshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Any on-site contaminated soil is appropriately addressed to ensure that no human or environmental health hazards result from Project activities</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>personnel and certifications for working with hazardous substances</td>
<td></td>
<td>County of San Diego Department of Environmental Health, Hazardous Materials Division</td>
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<td></td>
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<td>Conduct site visits to ensure certified personnel are working on-site</td>
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<td>shall be provided to California State Lands Commission staff within 2 weeks of completion.</td>
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<td>During onshore Project operations</td>
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<tr>
<td>Alternative to MM HAZ-3a: MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances. All work requiring removal of facilities shall be conducted by personnel trained to work with hazardous substances and any suspicious soils (stained or with an unusual odor) or groundwater (showing a sheen or with an unusual odor), shall be tested and treated in accordance with all applicable laws.</td>
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<td>legt onshore Project</td>
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<tr>
<td>MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil. Soil in the bottom of the beach valve pit known to have levels of TPH shall be disposed of as a petroleum-containing special waste.</td>
<td></td>
<td>Onshore–beach valve pit/vertical vault</td>
<td>Site inspection to ensure impacted soil is being removed from site (as necessary) Retain copy of facility-signed waste manifest indicating soil was accepted at an appropriate waste disposal facility</td>
<td>Before and/or during onshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Any on-site contaminated soil is appropriately addressed to ensure that no human or environmental health hazards result from Project activities</td>
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<tr>
<td>Accidental Release of Hazardous Material</td>
<td><strong>MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan Measures.</strong> The onshore contractor shall develop and implement hazardous materials management and contingency plan measures for onshore operations. The measures shall be provided to California State Lands Commission staff as part of a Stormwater Pollution Prevention Plan or a separate plan prior to Project implementation. Measures shall include, but not be limited to, identification of: appropriate fueling and maintenance areas for equipment; best management practices for fueling and operation of equipment (e.g., daily inspection of equipment); a spill response, and spill response supplies to be maintained onsite.</td>
<td>Onshore</td>
<td>Retain copy of the Plan; Conduct site visits to ensure Plan is being implemented</td>
<td>Prior to onshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Accidental releases of hazardous material is avoided or responded to appropriately</td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td><strong>Implement MM BIO-7: Oil Spill Response Plan (OSRP)</strong> (see above)</td>
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<tr>
<td>Violation of Water Quality Standards</td>
<td><strong>Implement MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP)</strong> (see above)</td>
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<td></td>
<td><strong>Implement MM BIO-7: Oil Spill Response Plan (OSRP)</strong> (see above)</td>
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<td></td>
<td><strong>Implement MM BIO-8: Flush Fuel Oil Submarine Pipeline</strong> (see above)</td>
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<td><strong>Implement MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA)</strong> (see above)</td>
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<td></td>
<td><strong>Implement MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances</strong> (see above)</td>
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<tr>
<td></td>
<td><strong>Implement MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil</strong> (see above)</td>
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<td></td>
<td><strong>Implement MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan Measures</strong> (see above)</td>
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<tr>
<td>Noise</td>
<td><strong>MM NOI-1: Advanced Noticing.</strong> Advanced notices shall be posted on the beach and/or along Carlsbad Boulevard within a 1,500-foot radius around the fuel oil submarine pipeline to notify the public about the location and timing of decommissioning operations. The notices shall be: (1) posted at least 1 week prior to any decommissioning operations on the beach or ocean, and shall include a map of the Project site, contact name and phone number; (2) maintained</td>
<td>Onshore</td>
<td>Retain copy of notice; Photo document notices in place; Conduct site inspections to ensure notices are maintained</td>
<td>At least one week prior to and during beach and offshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Advanced notices posted</td>
</tr>
</tbody>
</table>
Table 5-1. Mitigation Monitoring Program

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<td></td>
<td>until all Project operations impacting the beach and marine environment have been completed; and (3) removed within 1 week of completing the operations described in the notice.</td>
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<tr>
<td><strong>MM NOI-2: Shielding of Stationary Equipment.</strong></td>
<td>Onshore stationary noise sources shall be shielded, where feasible, using enclosures or barriers constructed of temporary prefabricated sound blankets or sound walls.</td>
<td>Onshore</td>
<td>Conduct site inspections to verify use of portable shields</td>
<td>During onshore Project operations</td>
<td>Applicant and CSLC</td>
<td>Shields in place to reduce noise transmission</td>
</tr>
<tr>
<td><strong>Short-term Underwater Noise from DPR</strong></td>
<td><strong>MM NOI-3: Advanced Notice to Swimmers and Divers.</strong> At least 1 week prior to and during dynamic pipe ramming (DPR) operations, written notice to swimmers and divers shall be posted at area dive shops and along the beach within 1,500 feet of the DPR site indicating that swimming and diving in the Project area may be harmful due to underwater noise impacts during DPR operations. The notice shall state that the Project area should be avoided during the DPR operation period, which shall be identified on the notice along with a map showing the Project area and suggested area of preclusion for divers and swimmers. The notice will also provide a contact name and phone number.</td>
<td>Onshore</td>
<td>Retain copy of notice Conduct site inspections to ensure notices are in place</td>
<td>At least one week prior to and during DPR operations</td>
<td>Applicant and CSLC</td>
<td>Advanced notices posted</td>
</tr>
<tr>
<td><strong>MM NOI-4: Observation and Removal of Divers and Swimmers from Waters in Project Area.</strong></td>
<td>Marine wildlife monitors (MWMs) onboard Project vessels shall be instructed to observe for non-Project-related divers or swimmers in or about to enter the safety zone established for marine wildlife; however, the safety zone for human divers and swimmers may be modified based on the sound source characterization to be conducted for dynamic pipe ramming. If such persons are observed by MWMs or vessel crews,</td>
<td>Offshore</td>
<td>Retain copy of MWM report</td>
<td>Immediately prior to and during DPR operations, including sound source characterization</td>
<td>Applicant and CSLC</td>
<td>Project area avoided by swimmers and divers during DPR operations</td>
</tr>
</tbody>
</table>
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<tr>
<td><strong>Transportation/Traffic</strong></td>
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<tr>
<td>Traffic Circulation</td>
<td>a support vessel shall be mobilized to inform them that their presence is not allowed in the Project safety zone, and the vessel crew shall arrange for them to be escorted from the active survey area.</td>
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<tr>
<td><strong>MM TRA-1: Trucks Avoid Peak Hours.</strong></td>
<td>Construction truck traffic affecting State highways shall be confined to hours outside of the peak AM and PM commute periods.</td>
<td>Onshore</td>
<td>Conduct site inspections</td>
<td>During onshore Project operations</td>
<td>Applicant and CSLC</td>
<td></td>
</tr>
<tr>
<td><strong>MM TRA-2: Carpooling.</strong></td>
<td>The contractor shall implement a worker carpool program to minimize the number of vehicular trips required to transport workers to and from the Project site. This measure shall be identified as a requirement in the contractor bid package.</td>
<td>Onshore</td>
<td>Conduct site inspections. Create/maintain list of workers who carpool</td>
<td>During onshore Project operations</td>
<td>Applicant and CSLC</td>
<td></td>
</tr>
<tr>
<td>Traffic Hazards</td>
<td><strong>MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC) Plan.</strong> A CSTMC Plan shall be developed for review by the City of Carlsbad and implemented. The Plan shall include, but not necessarily be limited to: (1) traffic control strategies; (2) traffic control devices to be used; (3) public awareness strategies; (4) motorist information methods; (5) alternate pedestrian and bicycle access routing; (6) work zone safety management strategies; and (7) contingency and incident plans.</td>
<td>Onshore</td>
<td>Retain copy of Plan Conduct site inspections</td>
<td>During onshore Project operations</td>
<td>Applicant, CSLC, and City of Carlsbad</td>
<td>Construction traffic safety measures implemented</td>
</tr>
<tr>
<td>Infrastructure</td>
<td><strong>MM TRA-4: Protect Infrastructure Improvements.</strong> The Applicant shall ensure that the onshore contractor includes proper precautions to protect all existing pavement, curbs, gutters, and drainage structures from unintentional damage during Project construction. Any portion damaged as a result of Project construction shall be repaired or replaced in accordance with current City of Carlsbad Standard</td>
<td>Onshore</td>
<td>List protection measures and photo document roads before/after Project operations Obtain written confirmation that any needed</td>
<td>Prior to, during and, if necessary, after Project operations</td>
<td>Applicant, CSLC, and City of Carlsbad</td>
<td>Infrastructure protection measures implemented and any necessary repairs made</td>
</tr>
</tbody>
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<tr>
<td>Construction Details.</td>
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</tr>
<tr>
<td>Offshore Marine Traffic</td>
<td><strong>MM TRA-5: Local Notice to Mariners.</strong> All offshore operations shall be described in a Local Notice to Mariners to be submitted to the U.S. Coast Guard at least 15 days prior to decommissioning activities.</td>
<td>Offshore</td>
<td>Retain copy of notice</td>
<td>Prior to offshore Project operations</td>
<td>Applicant, CSLC, and U.S. Coast Guard</td>
<td>Notice posted to inform mariners of Project traffic and operations</td>
</tr>
<tr>
<td>Solid Waste Disposal Capacity</td>
<td><strong>APM UTI-1: Reuse and Recycle Debris.</strong> The decommissioning contractor shall dispose of recovered materials (e.g., anchors, chains, riprap, piping) that can be reused and recycled at an appropriate facility if feasible.</td>
<td>Onshore/Offshore</td>
<td>Require contractor to identify final disposition of Project debris</td>
<td>After each Project decommissioning phase</td>
<td>Applicant and CSLC</td>
<td>Documented attempt to reuse or recycle Project debris</td>
</tr>
</tbody>
</table>
This Mitigated Negative Declaration (MND) was prepared by the staff of the California State Lands Commission’s (CSLC) Division of Environmental Planning and Management (DEPM), with the assistance of Padre Associates, Inc. The analysis in the MND is based on information identified, acquired, reviewed, and synthesized based on DEPM guidance and recommendations.

6.1 CSLC STAFF

Project Manager: Kelly Keen, Environmental Scientist, DEPM
Other: Eric Gillies, Assistant Chief, DEPM
Cy R. Oggins, Chief, DEPM

6.2 SECTION AUTHORS AND/OR REVIEWERS

<table>
<thead>
<tr>
<th>Name and Title</th>
<th>Affiliation</th>
<th>MND Sections</th>
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<tbody>
<tr>
<td>Simon Poulter, Principal</td>
<td>Padre</td>
<td>All</td>
</tr>
<tr>
<td>Donna Hebert, Project Manager</td>
<td>Padre</td>
<td>All</td>
</tr>
<tr>
<td>Matthew Ingamells, Senior Biologist</td>
<td>Padre</td>
<td>Terrestrial Biology, Air Quality, Greenhouse Gases</td>
</tr>
<tr>
<td>Ray de Wit, Senior Marine Scientist</td>
<td>Padre</td>
<td>Marine Biology, Commercial Fisheries</td>
</tr>
<tr>
<td>Jennifer Leighton, Environmental Specialist</td>
<td>Padre</td>
<td>Environmental Justice</td>
</tr>
<tr>
<td>Patrick Crooks, Environmental Specialist</td>
<td>Padre</td>
<td>Air Quality, Greenhouse Gases, Commercial Fisheries</td>
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6.3 REFERENCES CITED


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MND Preparation Sources and References


MND Preparation Sources and References


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___ 2014a. Results of Soil and Groundwater Sampling Activities near the Administration Building and Work Plan to Conduct Groundwater Monitoring and
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-. 2014b. Letter Report to Nasser Sionit regarding Soil Assessment and Remediation – Phase 4 Area Encina Power Station, Carlsbad, California, Cabrillo Power I LLC.


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