ATTACHMENT

CITY OF SANTA BARBARA

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ADDENDUM TO:

CITY OF SANTA BARBARA'S AND IONICS, INCORPORATED'S TEMPORARY EMERGENCY DESALINATION PROJECT (SB-106-90)
State Clearinghouse No. 9010859
Final EIR Certified March15, 1991

AND

LONG TERM WATER SUPPLY PROGRAM ENVIRONMENTAL IMPACT REPORT (SB-97-91)
State Clearinghouse No. 91121020
Final EIR Certified May 24, 1994

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TABLE OF CONTENTS

Section **Page No.**

1 INTRODUCTION 5
1.1 PROJECT BACKGROUND AND HISTORY 5
1.2 PURPOSE AND SCOPE 6

2 PROJECT LOCATION AND REGIONAL SETTING 10

3 DESCRIPTION OF APPROVED PROJECT 13
3.1 OCEAN INTAKE 13
3.2 DESALINATION FACILITY 14
3.3 PUMP STATION AND CHEMICAL STORAGE FACILITY 14
3.4 BRINE MIXING AND SAMPLING STRUCTURE 14
3.5 PLANT PIPING AND ELECTRICAL DISTRIBUTION 15
3.6 WEST PADRE STREET PUMP STATION 15

4 DESCRIPTION OF THE REACTIVATION PROJECT 15
4.1 OCEAN INTAKE 15
4.2 DESALINATION FACILITY MAIN SITE 16
4.3 PUMP STATION AND CHEMICAL STORAGE FACILITY (PSCA) 18
4.4 BRINE MIXING AND SAMPLING STRUCTURE 18
4.5 PLANT PIPING AND ELECTRICAL DISTRIBUTION 18
4.6 WEST PADRE STREET PUMP STATION 18

5 ANALYSIS 19
5.1 VISUAL RESOURCES 20
5.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS 22
5.3 BIOLOGICAL RESOURCES 38
5.4 CULTURAL RESOURCES 47
5.5 GEOLOGY AND SOILS 49
5.6 HAZARDS AND HAZARDOUS MATERIALS 52
5.7 NOISE 55
5.8 POPULATION AND HOUSING (GROWTH) 58
5.9 PUBLIC SERVICES AND UTILITIES 60
5.10 RECREATION 63
5.11 TRANSPORTATION AND CIRCULATION 65
5.12 WATER QUALITY AND HYDROLOGY 69
5.13 LAND USE AND PLANNING 74
5.14 CUMULATIVE IMPACTS 75

6 CEQA FINDING 85

7 REFERENCES 86

FIGURES

1 Regional Setting 11
2 Project Vicinity 12

TABLES

1 Estimated Daily Maximum Construction Emissions (pounds per day unmitigated) 25
2 Estimated Total Construction Emissions (tons per year unmitigated) 26
3 Estimated Maximum Daily Operational Emissions (pounds per day, unmitigated) 27
4 Estimated Annual Construction Greenhouse Gas Emissions 34
5 Estimated Annual Operational Greenhouse Gas Emissions (2016) 35

ATTACHMENTS

1. Santa Barbara Desalination Plant Reactivation Biological Assessment Report for Intake Repair and Maintenance Activities (Tenera 2014a)
2. Santa Barbara Desalination Plant Reactivation Utility Work Boat Anchoring Locations Subtidal Biological Survey Report (Tenera 2014b)
3. Archaeological Survey Report City Of Santa Barbara Charles Meyer Desalination Facility In Relation to the State Revolving Fund (SRF) Grant (Dudek 2014a)
4. Biological Assessment for the Charles Meyer Desalination Facility (Dudek 2014b)
5. Biological Resources Assessment Report for the Charles Meyer Desalination Facility in Relation to the State Revolving Fund (SRF) Grant (Dudek 2015a)
6. Charles Meyer Desalination Plant Reactivation Project Air Quality and Greenhouse Gases Technical Memorandum (Dudek 2015b)
7. Charles E. Meyer Desalination Facility Reactivation Project Mitigation Monitoring and Reporting Program.

1 INTRODUCTION

1.1 PROJECT BACKGROUND AND HISTORY

In response to a challenging water supply crisis, the Santa Barbara City Council declared a Stage III drought condition in 1990 based on a projected water supply deficit of 47% for the water year 1990-1991. The City Council then directed City of Santa Barbara (City) staff to solicit proposals from private firms for delivery of alternative water supply in amounts between 2,500 and 5,000 acre-feet per year (AFY) no later than September 1991. The supplemental water supplies were to replace the potential loss of water deliveries from Cachuma Reservoir in the 1992-93 water years and replenish groundwater basins that were over-drafted on an emergency basis.

Based on the proposals received, the City chose to move forward with the analysis and construction of the Charles E. Meyer Desalination Facility (Approved Project), located at 525 East Yanonali Street, to originally provide an emergency water supply. The decision to construct the Approved Project facility was a deliberative process that involved feasibility studies that evaluated alternative intakes and treatment technologies, plant capacities, and facility locations. The Approved Project was analyzed in two separate Environmental Impact Reports (EIR). The first of those EIRs, prepared in 1991, analyzed the construction and operation of the Approved Project as a temporary emergency facility (1991 EIR). After receiving bids, the City Council directed staff to negotiate a final contract with Ionics, Inc. to deliver a desalination project. The contract included the finance, design, construction and operation of a 7,500 AFY desalination facility (expandable to 10,000 AFY). The contract period was for 5 years with an option to renew for another 5 years. Construction of the Approved Project was completed and the facility was put into operation on March 2, 1992. Additionally, the City applied for and was issued a Coastal Development Permit (CDP) for the temporary desalination facility by the California Coastal Commission (CCC) on May 9, 1991 (Permit 4-91-18). The CDP was issued for a 5-year period.

After operating for three months, in the spring of 1992 use of the Approved Project was discontinued when ample rain in March and April 1992 resolved the City's drought situation. The City elected to place the Approved Project into a standby condition during the remainder of the contract term (through 1996), with the caveat that production of water could be restarted with a 1-year notice by the City.

For the purposes of the environmental review in the 1991 EIR and permitting from applicable local and state agencies, the Approved Project was defined as a temporary, 5-year project. However, the treatment equipment was installed for a 25-year (active service) life-cycle and complied with all standards and building codes for permanent structures.

After relief of the drought came in 1992, the City recognized that drought would be a reoccurring regional challenge. The City therefore began a review of its long term water supply situation. This was in part based on a 1991 election where City voters gave overwhelming support to make the Approved Project a permanent part of the City's water supply portfolio. Subsequently,

the City decided to transition the Approved Project into a permanent facility that would produce water supplies that were included in the City's Long-Term Water Supply Plan (LTWSP). Therefore, a second EIR, prepared in 1994, analyzed the operation of the Approved Project as a permanent facility (1994 EIR).

After the City Council certified the 1994 EIR in May of 1994, in December 1995, the City Planning Commission adopted Resolution No. 069-95, which approved a CDP under the City's certified Local Coastal Program to convert the temporary facility to a permanent facility and provided a recommendation to the CCC regarding the proposed project's conformance with the City's Local Coastal Program for the portion of the temporary facility located within the jurisdiction of the CCC. As noted earlier, this action was taken as part of the City's LTWSP for which the 1994 EIR was prepared, analyzing the Approved Project as a permanent part of the City's water supply. The City then applied to the CCC for a CDP allowing the conversion of the temporary facility to a permanent facility, and in October 1996, the CCC approved and issued that CDP (Permit 4-96-119).

In August 1996, the City Council voted to "Direct the Public Works Director to initiate a long-term storage program for the desalination facility, which will ensure activation of the plant, as and when required under the City of Santa Barbara's Long-Term Water Supply Program (LTWSP)."

In January 1997, Ionics, Inc. (Ionics), completed the process of placing the facility into long-term stand-by mode. Ionics provided a report of the activities associated with long-term standby, and a recommended schedule for routine maintenance activities. The City has routinely completed these maintenance activities, preserving the Approved Project in its ready state for reactivation from long-term standby mode.

1.2 PURPOSE AND SCOPE

California is again experiencing a record drought, which is severely affecting fresh water supplies. On February 11, 2014, the Santa Barbara City Council declared a Stage One Drought, seeking a voluntary 20% reduction in customer water use through extraordinary water conservation measures. On May 20, 2014, the Council declared a Stage Two Drought, including water rate increases of up to 103%, initiation of preliminary design for the reactivation of the Approved Project, and mandatory water use restrictions to help ensure the 20% reduction. City water customers met the 20% targeted reduction in July 2014, and exceeded the target with a 25% reduction in August. However, with continued drought, and with the driest consecutive four years on record, a Stage Three Drought Condition was declared by the Santa Barbara City Council on May 5, 2015 with mandatory water use regulations adopted on May 12, 2015. The Stage Three Drought Declaration and Regulations include: additional water use restrictions; some deferral of development activity; and further significant rate increases to reflect the potential award of a contract to reactivate the first 3,125 AFY of desalination capacity at the Approved Project, which is the initial capacity that is anticipated to be required to satisfy the City's water needs based upon the City's 2011 LTWSP and current drought planning projections.

Reactivation of the Approved Project would take approximately one year, meaning that the first 3,125 AFY of desalinated water would be available for production by the summer of 2016. If drought conditions continue through the winter of 2015-2016, a contract amendment may be considered by the City Council for construction of additional production capacity of up to 7,500 AFY. Such an amendment to increase capacity to 7,500 AFY would be developed and operational by spring 2017 to meet anticipated water supply demands. This would be based on a projection that the City's surface water reservoirs would be essentially empty, little or no water from the State Water Project would be available, and groundwater production would begin to decrease as the basins drop into overdraft conditions. With continued drought, the City could be facing a supply shortage of more than 50% by Water Year 2017, with all supplies substantially depleted and the potential for continued drought conditions. Therefore, while the Approved Project maintains permits that allow a production capacity of up to 10,000 AFY, the currently proposed reactivation involves minor repairs, upgrades and modernization to allow a maximum capacity of up to 7,500 AFY, which is the production capacity addressed in this Addendum.

As discussed in Section 1.1, the City previously prepared and certified two separate EIRs that address construction and operation as a temporary facility (the 1991 EIR) and long-term operation and maintenance (the 1994 EIR) of the Approved Project. The focus of this Addendum is to specifically address the proposed reactivation activities to place the Approved Project back into a production mode, which is consistent with the existing permits that were issued for the plant, as well as the City's water supply planning efforts, and current needs in the face of severe drought.

The 1991 EIR and 1994 EIR together provide a comprehensive disclosure and evaluation of the potential environmental impacts related to construction, operation, and maintenance of the Approved Project pursuant to CEQA[1]. The purpose of this Addendum is to analyze the minor changes, upgrades and modernization that are required to place the Approved Project into production mode (Reactivation Project). Based upon this analysis, the City has concluded that the minor changes involved under the Reactivation Project would not result in any new impacts or any increase in the severity of impacts addressed in the 1991 EIR and the 1994 EIR. Therefore, the City has determined that an Addendum is the appropriate environmental review document pursuant to State CEQA Guidelines sections 15162 and 15164.

To provide clarification of some of the key terms used in this Addendum, particularly those that are important in understanding the difference between facilities that have been approved and/or are existing and the minor changes that are proposed, the following definitions are provided.

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[1] Two Addenda were also previously prepared for the 1994 EIR the first dated December 16, 1994, discussed additional information regarding sludge generation, and the second dated June 16, 2006, removed a requirement for undergrounding an overhead power line. Both of these Addenda are part of the record for the 1994 EIR.

"Approved Project" – the Approved Project is more fully described below in Section 3 of this Addendum, and includes all of the components of the Charles E. Meyer Desalination Facility that were originally approved for construction and operation, and that were built and operated in 1992. In addition to the original components, an existing well located on West Padre Street would be employed for use as a pump station for the Reactivation Project. The existing well was approved separately by the City in the 1980's, and was determined to be exempt from the requirements of CEQA at the time of construction, due to the absence of any significant adverse environmental effects.

"Desalination Facility" – the Desalination Facility in the context of this Addendum refers to the facilities associated with the main desalination plant site component of the Approved Project located at 525 East Yanonali Street.

"El Estero Wastewater Treatment Plant (EEWWTP)" – refers to the existing, operating El Estero Wastewater Treatment Plant that currently treats wastewater for the City. Certain components of both the Approved Project and the Reactivation Project are located on the site of the EEWWTP.

"Reactivation Project" – includes reactivation of the Approved Project. The Reactivation Project includes rehabilitation, replacement, refurbishing and upgrading of equipment needed to bring the Approved Project into service mode, as more fully described in Section 4 of this Addendum.

1.3 USE OF AN ADDENDUM

Cal. Code Regs., tit. 14 (hereinafter, "State CEQA Guidelines"), sections 15162 through 15164 set forth the environmental review requirements when a new discretionary action is required for a previously approved project.

Pursuant to State CEQA Guidelines Section 15162:

(a) When an EIR has been certified…for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR…due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete…shows any of the following:

   (A) The project will have one or more significant effects not discussed in the previous EIR;

   (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

   (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

   (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If some changes or additions to a previously-prepared EIR are necessary, but none of the conditions specified in State CEQA Guidelines Section 15162 are present, the lead agency shall prepare an addendum (State CEQA Guidelines, § 15164[a]). Further, the Addendum should include a "brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162," and that "explanation must be supported by substantial evidence." (State CEQA Guidelines, §15164, subd. (e).) The addendum need not be circulated for public review, but may simply be attached to the Final EIR (Ibid.; State CEQA Guideline, § 15164, subd. (c)), and considered by the decision-making body prior to making a decision on the project.

As required by CEQA, this Addendum analyzes the minor changes and additions proposed by the Reactivation Project, any changes to the existing conditions that have occurred, and whether new information exists related to the significance of impacts and/or feasibility of mitigation measures and alternatives since the certification of the 1991 and 1994 EIRs. Based upon the analysis in this Addendum supported by substantial evidence included in the Addendum and its attachments and in the 1991 and 1994 EIRs, the City has determined that a subsequent or supplemental EIR is not required for the Reactivation Project. The minor changes and additions associated with the Reactivation Project are not substantial. There are no new significant impacts resulting from the Reactivation Project and there would not be a substantial increase in the severity of previously identified environmental impacts in the 1991 and 1994 EIRs. In addition, the changes with respect to the circumstances under which the Reactivation Project would be undertaken have not occurred and would not result in new or more severe environmental impacts. Therefore, an addendum is the correct environmental review document pursuant to CEQA.

2 PROJECT LOCATION AND REGIONAL SETTING

The Reactivation Project is located in Sections 17 and 23 of Township 4 North, Range 27 West, of the Santa Barbara, California U.S. Geological Service (USGS) 7.5' topographic quadrangle, within the City of Santa Barbara (see Figures 1 and 2).

SOURCE: ArcGIS Online Basemap (Nat Geo)

FIGURE 1
Regional Setting

City Of Santa Barbara California Environmental Quality Act (CEQA) Addendum to:
The City Of Santa Barbara's and Ionics, Incorporated's Temporary Emergency Desalination Project, and Long Term Water Supply Program Environmental Impact Report

SOURCE: ArcGIS Online Basemap (USA Topo)

FIGURE 2
Project Vicinity

City Of Santa Barbara California Environmental Quality Act (CEQA) Addendum to:
The City Of Santa Barbara's and Ionics, Incorporated's Temporary Emergency Desalination Project, and Long Term Water Supply Program Environmental Impact Report

The locations of the various components of the Reactivation Project consist of the Offshore Intake and Discharge Facilities including the Beach Weir Box located offshore and on East Beach, respectively; the Desalination Facility plant site, located at 525 East Yanonali Street; the Filter Feeder Pump Station and Chemical Storage Area located at 420 Quinientos Street; the EEWWTP Southern California Edison Substation and Outfall Mixing Box located at 520 East Yanonali Street; and the West Padre Street Pump Station located at 310 West Padre Street. The elevation of the plant site and primary facility components is approximately 10 feet above sea level (ASL).

3 DESCRIPTION OF APPROVED PROJECT

As noted earlier, the Approved Project was originally approved and permitted as a temporary facility in 1991, and was constructed and first became operational in 1992. It was later approved and permitted as a permanent facility in 1994. The 1991 and 1994 approvals and EIRs addressed the construction, operation and maintenance of the Approved Project. The various components of the existing Approved Project are as follows:

3.1 OCEAN INTAKE

The existing offshore portions of the Approved Project are located offshore of East Beach and southeast of the terminus of Stearns Wharf in the City of Santa Barbara. The ocean intake consists of two offshore concrete intake structures that are designed and installed with intake pumps, check valves, and intake screens. Each intake structure is constructed of concrete with a footprint of 18.83 feet by 18.83 feet. The concrete intake structures were constructed with removable 20-inch high density polyethylene (HDPE) spools, which connected the structures to a single 36-inch diameter HDPE pipe. The 20-inch spools were removed when the plant was placed into long-term storage mode, but the 36-inch HDPE piping remains on the surface of the sea floor until transitioning to an abandoned 42-inch diameter reinforced concrete outfall pipe (RCP) that was slip-lined with the 36-inch diameter HPDE intake pipe when the intake was originally constructed in 1992. The 36-inch diameter HDPE intake pipeline continues inside the 42-inch RCP abandoned outfall to a raw water booster pump station, located onshore at 420 Quinientos Street. Prior to reaching the booster pump station, the intake pipeline connects to an abandoned outfall weir box on the beach. The weir box serves as a transition point for power and communication wires for the off-shore intake pumps. These wires transition from inside the 36-inch HDPE piping to a duct bank that continues along the intake pipe alignment to the filter feed pump station at 420 Quinientos Street, which is located on the site of the EEWWTP.

Once seawater is pumped from the offshore intakes through the 36 diameter HDPE pipe to the filter feed pump station, it is then pumped through a pipeline beneath the EEWWTP to the Desalination Facility located at 525 East Yanonali Street.

The entire off-shore intake structure complex is located below sea level at an approximate depth of 30 feet (5 fathoms), in an area of soft/sandy seafloor. A required US Coast Guard

navigational buoy marks the location of the intake structure complex. The offshore components of the Approved Project also include a discharge line for disposal of by-product brine water. The brine is blended with treated wastewater discharged through the previously constructed ocean outfall of the EEWWTP. The discharge is fully permitted, including the blending of brine, and the outfall facility requires no repair, maintenance or physical changes associated with the Reactivation Project.

3.2 DESALINATION FACILITY

Processing of the raw seawater that is transported via the Approved Project's offshore intake occurs onshore at the Desalination Facility, located on a 1.46 acre parcel of land, adjacent to U.S. 101, at 525 East Yanonali Street on the lower east side of Santa Barbara. A full description of plant operation was included in the 1994 EIR. The plant was designed and previously approved for a 10,000 AFY production capacity, which is still allowed under existing permits. Treatment capacity of 7,500 AFY was constructed in 1992. Facilities located on the Desalination Facility site include primary and secondary media pre-treatment filter vessels, as well as pre-treatment cartridge filters. Desalination equipment includes five separate reverse osmosis (RO) systems, and an RO feed pumping system. Two 15,000 gallon product storage tanks and one 5,000 gallon flush tank also remain on the site. Three 300 HP product water pumps were used to transfer product water from the tanks into the City's distribution system during prior operation of the Approved Project. When the Approved Project was placed into standby mode as noted above, the existing reverse osmosis membranes and filter media were removed; and the piping, tanks, and vessels were drained and cleaned. The remaining equipment has been maintained on a regular basis under the City's long-term standby program.

3.3 PUMP STATION AND CHEMICAL STORAGE FACILITY

The filter feed pump station and chemical storage facility is located at 420 Quinientos Street adjacent to the EEWWTP. The filter feed pumps receive seawater pumped from offshore submersible intake pumps and boost the pressure to feed the pre-filtration system located at the Desalination Facility. The chemical storage and feed systems are used to store and apply chemical treatment to the product water for purposes of disinfection and corrosion control. The facility has been maintained under the City's long-term desalination plant standby program.

3.4 BRINE MIXING AND SAMPLING STRUCTURE

The brine mixing and sampling structure is a concrete box located within the EEWWTP site and serves to blend the brine discharge from the desalination plant with the wastewater effluent from the EEWWTP for ocean discharge. The existing mixing basin has functioned as the sampling station while the Approved Project has been in standby mode.

3.5 PLANT PIPING AND ELECTRICAL DISTRIBUTION

Plant facility piping and electrical distribution banks run underground through several corridors of the Desalination Facility and EEWWTP sites, and to the Pacific Ocean. The piping and distribution banks include intake water piping, brine water piping, and product water piping, as well as conduit for power and plant control communication.

3.6 WEST PADRE STREET PUMP STATION

The facilities associated with the West Padre Street Pump Station were approved separately from the Desalination Facility as a groundwater production well facility. The well facilities include an existing groundwater well, filtration equipment and piping housed within a 990 square-foot building, as well as a 250 square-foot storage area. The facility is located on the campus of the Santa Barbara City College, and was constructed in 1980's. When it was approved, the facility was determined to be categorically exempt from CEQA based on a determination that no adverse environmental effects would result from its construction and operation.

4 DESCRIPTION OF THE REACTIVATION PROJECT

Reactivation of the Approved Project is now being proposed to bring the facility back into service from its standby mode condition, to initially produce 3,125 AFY, and potentially up to 7,500 AFY for drought relief. The proposed discretionary action that would authorize the Reactivation Project addressed in this Addendum is a Design-Build-Operate contract with IDE and Kiewit Construction (IDE/Kiewit). The IDE/Kiewit proposal identifies the minor repairs, maintenance, upgrades and modernization of the Approved Project that would be involved under the Reactivation Project. The Reactivation Project involves no expansion of use or increased capacity above that previously reviewed, analyzed and approved for the Approved Project operations.

The Reactivation Project involves replacement and/or modernized equipment and/or structures that would be located in the same general location for the same or similar use, and be of similar size and height, as the Approved Project, including conceptual landscape plan and site plan for both the City's 1995 and CCC's 1996 CDPs approving the Approved Project for permanent use.

The components of the Reactivation Project are as follows:

4.1 OCEAN INTAKE

The existing intake structures and HDPE raw water pipeline would be cleaned to remove biological growth. Following cleaning the intake pumps and check valves that were removed during long-term storage would be replaced, as would the associated 20-inch diameter pump discharge piping spools that connect the concrete intake structures to the 36-inch main HDPE intake piping. Pump replacement would also involve reinstallation of power and communications cables which would be accessed via the existing weir box located on East Beach. Installation of

chlorination tubing in the intake pipeline was addressed in the 1991 EIR but never installed. Reactivation Project would include installation of the tubing. Finally, Reactivation Project would include replacement of the intake screens that were removed during long-term storage. The new screens would be designed based on new available technology, recognized by the U.S. EPA as Best Technology Available for intake screening applications in open waters and referenced by an expert panel on desalination intakes that was assembled by the State Water Resources Control Board. The proposed new screen design (cylindrical wedge wire configuration) would have openings of 1 mm in width (.039 inches). The Approved Project also includes an existing brine discharge line and outfall structure which is not proposed for modification with the Reactivation Project. All proposed offshore work for the intake structures, pumps and intake line, would be performed through use of a utility boat which would anchor in the vicinity of the intake structure.

4.2 DESALINATION FACILITY MAIN SITE

The Reactivation Project would implement the following repairs, upgrades and modifications to the Desalination Facility Main Site:

- **Replace Seawater Reverse Osmosis (SWRO) Process Components:** Remove the existing SWRO train units (trailers) and replace with upgraded modular SWRO units that would be similar in size, function and appearance.

- **Upgrade Multi-Media Filtration (MMF):** The existing site design uses horizontal tank vessels for the MMF process that are located adjacent to the existing SWRO train units. The proposed upgrades would integrate the MMF components with the SWRO Process Modules, and the existing MMF tank vessels would be replaced.

- **Replace Cartridge Treatment System:** The Reactivation Project would replace/upgrade this portion of the pre-treatment process with an updated and more efficient modular cartridge pretreatment system. The proposed upgrades would integrate the cartridge treatment system components with the SWRO Process Modules, and the existing CTS would be removed from the site.

- **Lime Storage and Feed System:** The Reactivation Project would upgrade/modify the existing lime storage and feed system located at the Desalination Facility main site, resulting in reduced turbidity of lime solution injected into the product water, improving the overall quality and reliability of product water, as well as improve reliability and simplicity of the lime preparation system.

- **UV Disinfection Process:** The Reactivation Project would implement a UV disinfection process to meet the requirements of new regulations that have been enacted since the Approved Project was originally constructed, significantly reducing or eliminating the use of the current intake chlorination process.

- **Water Storage Tanks and Product Water Pumps**: The Reactivation Project includes refurbishing the existing product water storage tanks and product water pumps. Refurbishment of the product water storage tanks would entail sandblasting and recoating the interior of the tanks. Product water pumps and motors would be replaced with new Variable Frequency Drive pumps that would improve energy efficiency and compatibility with Southern California Edison's system

- **Carbon Dioxide Storage Tank and Dosing System**: The carbon dioxide storage tank and dosing system would be relocated from the Pump Station and Chemical Storage Facility to a location within the Desalination Facility site adjacent to the lime storage and dosing system.

- **Backwash Wastewater Treatment System**: The backwash wastewater treatment system would be refurbished (cleaned and recoated) and returned to service.

- **Service Water and Flushing System**: Refurbishment of flushing tanks would include cleaning and recoating, and the existing flushing pumps would be replaced with new pumps. Service water pumps would be replaced with new, more efficient pumps.

- **Brine Discharge System:** The existing brine discharge pumps and motors currently installed at the Desalination Facility site would be refurbished and re-installed or replaced.

- **Electrical Service Equipment**: Because the City disconnected service from Southern California Edison (SCE) when the Approved Project was placed into long-term standby, SCE considers reactivation of service to be a "new service". As a result, the reactivated electrical service must conform to current SCE standards, which requires reconfiguration and upgrades involving installation of approximately 300 feet of new underground duct bank heading east along the northern El Estero WWTP service road that is parallel to Yanonali Street, but inside the screened and fenced perimeter of the El Estero WWTP.

- **Storm Water Quality Improvements:** The Reactivation Project would not involve introduction of substantial additional impervious surfaces, or changes in runoff flows. However, minor grading to address flood elevations would be required, including movement and recompaction of between 200-300 cubic yards of material. In addition, the storm water conveyance systems would be upgraded to meet current storm water quality standards.

- **Demolition:** As part of the aforementioned activities, minor demolition of equipment pads, old trailers, filter vessels, and other equipment will be needed, as equipment is upgraded and replaced. Demolition activities are anticipated to occur over an approximate 3-month period during the early stages of construction.

4.3 PUMP STATION AND CHEMICAL STORAGE FACILITY (PSCA)

The filter feed pump station and chemical storage facility includes equipment that would be serviced, replaced, or modernized as part of the Reactivation Project. Improvements include the following:

- A new above ground pipe connection would be installed to facilitate by-pass of the existing filter feed pump station.
- The existing pig launching system would be refurbished and used as needed during operation and maintenance of the Reactivation Project. The "pig" is an interior pipeline scrubbing device that is launched from the intake through the pipeline towards the on-shore filter pump area/pig return station. The pig has an abrasive coating that scrubs the pipeline walls, removing any natural buildup of ocean sediments, mineral deposits, and biological growth.
- Existing filter feed pumping systems would be removed and blind flanges installed as necessary to seal off unused piping.
- A static mixer would be installed at the discharge to the filter feed station.
- The existing flow meter would be reconditioned and/or replaced.

4.4 BRINE MIXING AND SAMPLING STRUCTURE

No structural changes are proposed for the existing brine mixing basin that is located in the southwest corner of the EEWWTP property. However, a coating to prevent corrosion of the concrete structure may need to be applied based upon the concrete condition.

4.5 PLANT PIPING AND ELECTRICAL DISTRIBUTION

With the exception of power supply duct bank feeding the EEWWTP, described in Section 4.2, all existing duct bank would be reused. Some replacement of power and communication cable is anticipated due to age and exposure. This would be accomplished from existing access points (i.e., previously installed pull boxes).

4.6 WEST PADRE STREET PUMP STATION

The Reactivation Project includes use of the West Padre Street Well site to distribute the desalinated product water. This location was selected after it was determined that it would better meet the objectives of the overall system improvements. The existing well would be converted to a monitoring well and the existing building would be repurposed for the booster pump station necessary to move water throughout the City's distribution system. Replacement/addition of existing overhead electrical service lines would be required to serve the system. New underground piping will be installed to reconfigure the existing piping from that of a production well feeding into the City's water supply distribution system, to that of a pump station that would

receive product water from the Desalination Facility, and convey it to the City's water supply distribution system. The new piping would be installed at the existing well/housing structure within the City's existing right-of-way and easements.

4.7 RECENT REGULATORY ACTIONS RELATED TO THE REACTIVATION PROJECT

In January 2015, the Central Coast Regional Water Quality Control Board (Regional Board) adopted amendments to Order No. R3-2010-0011 related to the City of Santa Barbara's Charles E. Meyer Desalination Facility. The primary purpose of the amendment was for the Regional Board to make a formal determination that the Approved Project, at the time that it was first permitted by the Regional Board, complied with section 13142.5(b) because it used the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. The Regional Board, with the City's consent, added Provision VI.C.6.c.iii.1 to the Order. This provision requires the City to submit a feasibility study workplan acceptable to the Regional Board by August 31, 2015 to analyze the feasibility of a range of alternatives, including subsurface intake and potable reuse options. These additional measures reflect the City's prior commitment to perform such studies, while also allowing the City to place the facility back into production in accordance with the City's Long-Term Water Supply Plan.

In February 2015, the CCC approved and issued a CDP for the reinstallation of equipment and ongoing maintenance and repair of the Reactivation Project's ocean intake system (Permit 9-14-1781). In doing so, the CCC recognized that the Reactivation Project was a continuation of the Approved Project the CCC approved previously through Permits 4-91-18 and 4-96-119, and that the City would operate the Reactivation Project in a manner similar to that which was previously approved. Moreover, in approving Permit 9-4-1781, the CCC found under its CEQA certified regulatory authority that with the inclusion of ten special conditions, potential environmental impacts resulting from the Reactivation Project within the CCC's original jurisdiction would be avoided, minimized or mitigated. The ten special conditions are referenced in the Mitigation Monitoring and Reporting Program (MMRP) that is attached to this Addendum (Attachment 7). The CCC concluded that "the proposed project, as conditioned, has been adequately mitigated and is determined to be consistent with CEQA." (Staff Report for Permit 9-4-1781, p. 22.)

5 ANALYSIS

The following analysis provides a comparison of the impacts identified for the Approved Project in the 1991 EIR and the 1994 EIR with those potential impacts that could result from the Reactivation Project. The organization of this section follows the City of Santa Barbara's current CEQA Environmental Checklist format, which has been updated since the time that the 1991 and 1994 EIRs were certified to reflect updates that have been made to the State CEQA Guidelines during that period. This section provides a brief summary of the environmental analysis from the previous EIRs, addresses the Reactivation Project changes in light of the previous analyses and the City's significance criteria, addresses any changes in circumstances that could affect previous

significance conclusions, identifies mitigation measures that are recommended to reduce any potential impacts and provides a significance conclusion related to the project changes. Mitigation measures that were previously identified in the 1991 EIR and the 1994 EIR would also be applied to the Reactivation Project, if applicable. Those mitigation measures, in addition to mitigation measures proposed for the Reactivation Project, are included in the MMRP for the Reactivation Project, which is included at Attachment 7 to this Addendum.

5.1 VISUAL RESOURCES

Summary of Analysis from the 1991 EIR: The 1991 EIR analyzed visual/aesthetic impacts and recommended mitigation measures in Section 3.8, Pages 3-79 through 3-90. The analysis focused on the potential for public view impacts resulting from the project facilities proposed in several locations, primarily from the adjacent Rescue Mission, and on a broader basis, from residents of the Santa Barbara Riviera and Eucalyptus Hill communities because of their higher elevation. Impacts were determined to be less than significant with implementation of project design measures, including a screening wall, landscape screening, and standard light and glare shielding measures. Other project components were also determined not to create a significant visual aesthetic effect, including temporary construction effects.

Summary of Analysis from the 1994 EIR: The 1994 EIR analyzed aesthetics and visual impacts and recommended mitigation measures in Section 5.10, Pages 5.10-1 through 5.10-11. The analysis evaluated the long-term impacts on aesthetics and views that would occur with conversion of the temporary emergency Desalination Facility to a permanent facility by essentially assessing the existing condition of the facility. Mitigation including additional screening was required. Impacts were determined to be less than significant with implementation of mitigation measures.

Significance Criteria:

Would the project:

a) Have a substantial adverse effect on a public scenic vista or a private scenic vista enjoyed by a large portion of the community?
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?
c) Substantially degrade the existing visual character or quality of the site and its surroundings?
d) Result in substantial grading on steep slopes or permanent substantial changes in topography?
e) Create a new source of substantial light or glare which would adversely affect day and nighttime views in the area?

Analysis: Since the time of preparation of the 1991 EIR, the Approved Project has been fully constructed and made operational. Implementation of project design features and recommended mitigation measures to reduce potential visual aesthetic impacts to a less than significant level occurred at the time of project construction. In some instances landscape plantings have not survived and require replanting to remain consistent with required mitigation measures requiring that all landscaped areas on the project site are properly irrigated and well maintained for the life of the project (see VIS-3 in the attached MMRP), The Reactivation Project would be subject to requirements to install/replace landscape planting in accordance with the previously identified mitigation measures relating to visual screening and aesthetics, which are included as VIS-1 through VIS-5 in the MMRP,to ensure that the level of screening anticipated for the Approved Project would be achieved. Also any components of the Reactivation Project visible from public views at main site (trailer/modular units and tanks) would be required to have an exterior color treatment compatible with the adjacent Rescue Mission and EEWWTP, pursuant to the applicant proposed measure identified in the 1991 EIR, which is identified as a mitigation measure in the MMRP (VIS-2, Attachment 7). Finally, the Reactivation Project will comply with Special Condition 10 of Permit 9-14-1781, which requires that all project-related lighting be directed downward and inward towards the work areas to the extent feasible. This will further minimize any potential impacts to visual or aesthetic resources and impacts would be less than significant.

Scenic Vistas:

The Reactivation Project is not anticipated to have a substantial adverse effect on a public scenic vista or a private scenic vista enjoyed by a large portion of the community because, as noted in the 1991 EIR, the Desalination Facility is located in an area with limited scenic resources based on the industrial nature of the site. Scenic vistas, such as mountains, skyline trees, or the coastline would not be substantially obstructed by any of the Reactivation Project components because substantial changes in structure heights and densities, or arrangements in structures and equipment are not proposed, as the Reactivation Project involves reuse of many of existing structures on the Desalination Facility site, as well as the existing West Padre Street Pump Station and the beach weir box. Therefore, impacts would be less than significant.

Scenic Resources:

Scenic resources within the Reactivation Project area are limited due to the industrial nature of the Desalination Facility location, but do include trees such as those which were originally planted as screening for the Approved Project. The Reactivation Project would not remove any of the existing trees, and would include additional plantings, including replacement of plantings that have been lost or removed since construction of the Approved Project to comply with Mitigation Measures VIS-3. Other components of the Reactivation Project would not involve alteration of any scenic resources, and therefore impacts would be less than significant.

Visual Character:

As described in Section 4, the Reactivation Project would not involve substantial changes in structure heights, densities or arrangements, or substantial addition of structures or equipment, and therefore would not represent a substantial change in the visual character of the existing Approved Project, would not substantially degrade the visual character of the surrounding area, and impacts would therefore be less than significant.

Steep Slopes/Topography:

There are no steep slopes or substantial topography within the Reactivation Project component locations; therefore, no grading on steep slopes or in areas of substantial topography would occur, and no substantial changes in topography would result. Impacts would be less than significant.

Light and Glare:

The Reactivation Project would not add substantial lighting, or result in use or placement of reflective surfaces that would produce substantial amounts of glare. The Reactivation Project will comply with Special Condition 10 of Permit 9-14-1781, which requires that all project-related lighting be directed downward and inward towards the work areas to the extent feasible. Impacts would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes with respect to circumstances under which the Approved Project would be undertaken, and there is no new information of substantial importance that has become available relative to visual or aesthetic resources. Other than maturation of landscaping that further screens views of the Desalination Facility, no substantial changes in the aesthetic or visual environment have occurred since certification of the FEIR, and no substantial new sensitive receptors or scenic resources have been identified within the vicinity of the Reactivation Project components.

Conclusion: None of the proposed components of the Reactivation Project involve new significant impacts or a substantial increase in previously identified impacts. Additionally, there are no substantial changes to the circumstances under which the Approved Project would be undertaken, and no new information of substantial importance which was not known and could not have been known when either the 1991 EIR or 1994 EIR were certified has since been identified. Therefore, the minor changes to potential Visual Aesthetics impacts resulting from the proposed Reactivation Project do not require a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Summary of Analysis from the 1991 EIR: Analysis of air quality impacts was conducted in the Initial Study for the 1991 EIR and found to be not significant, because emissions associated with

construction and operational vehicle trips were found to be minimal, and therefore less than significant. However, the EIR noted that the Approved Project would consume electricity that would result in indirect emissions. Analysis of indirect emissions from purchased electricity for the Approved Project is included in the Energy Use discussion, Section 3.11 of the 1991 EIR, on pages 3-100 and 3-101. This section of the 1991 EIR acknowledges that the proposed desalination project would require substantial energy to operate and would, therefore, increase demand on existing energy sources. The assessment addressed project energy requirements, energy sources, and energy conservation aspects of the project requirements, energy sources, and energy conservation aspects of the project.

The 1991 EIR quantified indirect emissions associated with purchased electricity consumed by the Approved Project as follows:

- SO_x = 26 tons/year
- NO_x = 37 tons/year
- CO_2 = 38,000 tons/year

The 1991 EIR states that the emissions constitute 0.038 percent of the total emissions generated to supply power to the SCE grid, and concludes that impacts related to energy use were less than significant.

Summary of Analysis from the 1994 EIR: Similar to the 1991 EIR, the 1994 EIR Initial Study also found air quality impacts to less than significant. The 1994 EIR addresses energy use for the Approved Project in Section 5.8, on pages 5.8-1 through 5.8-10, and impacts to energy resources and energy utility purveyors which would result from operation of the plant as a permanent facility were determined to be less than significant.

Significance Criteria:

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
d) Expose sensitive receptors to substantial pollutants?
e) Create objectionable odors affecting a substantial number of people?
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

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

Analysis:

Air Quality

Construction of the Reactivation Project would result in short-term air emissions that would be less than those associated with the original Approved Project construction, because reactivation of the Approved Project would utilize many of the existing structures and improvements that were originally constructed for the Approved Project, such as storage tanks, containers housing filtration equipment, and some of the existing pumps, valves and piping. Moreover, with the exception of energy use, operation of the Reactivation Project would have minor operational emissions similar to the Approved Project. Details regarding emission calculations, methodology and regulatory setting are provided in Appendix A to Attachment 6 of this Addendum.

Consistency with Applicable Air Quality Plan:

Consistency with land use and population forecasts in local and regional plans, including the Clean Air Plan, is addressed in the City's CEQA checklist. The SBAPCD 2013 Clean Air Plan provides an overview of air quality and sources of air pollution within the air basin, and identifies the pollution-control measures needed to meet State and federal clean-air standards.. The 2013 Clean Air Plan, the applicable air quality plan, was adopted by the Santa Barbara County Air Pollution Control District Board on March 19, 2015, and is the most recent applicable air quality plan. The 2013 Clean Air Plan is the 3-year update required by the state to show how the SBCAPCD plans to meet the state 8-hour O_3 standard (SBCAPCD and SBCAG 2015). The Clean Air Plan relies primarily on the land use and population projections provided by the Santa Barbara County Association of Governments (SBCAG) and CARB on-road emissions forecast as a basis for vehicle emission forecasting. The 2013 Clean Air Plan used SBCAG's Regional Growth Forecast 2010–2040, adopted December 2012, to project population growth and associated air pollutant emissions for all of the Santa Barbara County incorporated and unincorporated areas.

The Reactivation Project involves repair and maintenance activities and operation of an existing desalination plant. The Reactivation Project would therefore not conflict with or propose to change existing land uses or applicable land use policies as designated in the City of Santa Barbara General Plan; therefore, the Reactivation Project as a land use, was included in the SBCAG Regional Growth Forecast. As such, the Reactivation Project would not conflict with the 2013 Clean Air Plan, and impacts would be less than significant.

Compliance with Air Quality Standards

Construction Impacts

Construction related to the Reactivation Project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

Ground disturbances and equipment operation during construction activities would produce short-term PM_{10} and $PM_{2.5}$ emissions. Implementation of the Reactivation Project would generate construction-related air pollutant emissions from both entrained dust and vehicle emissions. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions.

Based on construction assumptions that are more fully described in Attachment 6, Table 1, Estimated Daily Maximum Construction Emissions, shows the estimated maximum unmitigated daily winter or summer construction emissions associated with construction related to the Reactivation Project.

Table 1
Estimated Daily Maximum Construction Emissions
(pounds per day unmitigated)

Emissions Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Desalination Plant	3.70	35.05	26.84	0.04	2.81	2.10
Intake	15.95	185.46	50.71	0.08	6.66	6.52
Total	**19.65**	**220.51**	**77.55**	**0.12**	**9.47**	**8.62**

Notes: See Appendix A for detailed results.
These estimates do not reflect compliance with SBCAPCD standard dust control measures.

Standard dust control measures as required by the SBCAPCD for all discretionary construction activities would be implemented as delineated in the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (SBCAPCD 2015a) which are based on the policies of the 1979 Air Quality Attainment Plan, and as enforced through SBCAPCD Rule 302 (Visible Emissions) and 303 (Nuisance). Vehicle exhaust results from internal combustion engines used by construction equipment and vehicles, which results in emissions of ROCs, NO_x, CO, PM_{10}, and $PM_{2.5}$.

Maximum daily NO_x emissions of 220.51 pounds per day would occur during the overlap of a number of construction activities, primarily resulting from the use of marine vessels for repair and maintenance of the seawater intake and simultaneous use of off-road equipment during construction of other components of the Reactivation Project. However, the marine vessel

emissions represent a worst-case scenario that includes the dispersed emissions from the travel of a tug boat and utility boat from the Port of Hueneme to the project site in addition to the emissions from these marine vessels for a full 8 hour work day, which would only occur for one day at the start of construction and one day at the end of construction. This conservative, worst-case scenario also assumes an overlap of these maximum daily marine vessel emissions with the maximum daily construction emissions resulting from the use of off-road equipment for construction of the Reactivation Project. Because the worst-case daily emissions as shown in Table 2 would only occur for one day at the start of construction and one day at the end of construction, the majority of construction activities would result in lower criteria pollutant emissions than levels shown in Table 2.

The SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or daily construction emissions; however, construction activities would be short-term and temporary, and would not require a substantial amount of off-road or in-water equipment to be operating simultaneously for an extended period of time. Additionally, construction activities would not result in extensive truck trips through the construction phase. The Reactivation Project is estimated to involve approximately 74 daily round trips, including 26 construction worker round trips, and 48 material hauling and delivery round trips. The greatest amount of haul truck travel would occur during the demolition phase. As a result, the Reactivation Project air quality impacts in relation to daily construction activity would be considered less than significant.

The County of Santa Barbara is currently nonattainment for the state 8-hour O_3 standard and the state PM_{10} standard; however, the SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or daily construction emissions. Absent adopted thresholds, the SBCAPCD uses 25 tons per year for ROC or NO_x as a guideline for determining the significance of construction impacts. Table 2 presents estimated total construction emissions that would occur during construction of the Reactivation Project in 2015 and 2016.

Table 2
Estimated Total Construction Emissions
(tons per year unmitigated)

Emissions Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Desalination Plant	0.16	1.50	1.19	0.00	0.13	0.09
Intake	0.19	2.18	0.60	0.00	0.09	0.09
Total	**0.35**	**3.68**	**1.79**	**0.00**	**0.22**	**0.18**

Notes: See Appendix A for detailed results.
These estimates do not reflect compliance with SBCAPCD standard dust control measures.

As shown in Table 2, the construction related to the Reactivation Project would not exceed the SBCAPCD's general rule of 25 tons per year of ROC or NO_x used for determining significance of construction exhaust emissions. Therefore, impacts on air quality during construction would not contribute to an existing or projected air quality violation during construction and impacts would be less than significant. However, the MMRP includes updated measures that include

implementation of the SBAPCD construction dust control measures (See AQ/GHG-1 of the MMRP, Attachment 7 to this Addendum).

Operational Impacts

Operation of the Reactivation Project would produce ROC, NOx, CO, SOx, PM10, and PM2.5 emissions from vehicular traffic generated by employees, area sources, and energy use. Emissions associated with project-generated daily traffic were estimated based on information provided by the construction contractor. Approximately eight full-time employees would be on site during the Reactivation Project operations. The California Emissions Estimator Model (CalEEMod) was used to estimate emissions from mobile sources and project area sources. Area sources include gasoline-powered landscape maintenance equipment, consumer products, and architectural coatings for building maintenance.

Table 3, Estimated Maximum Daily Operational Emissions, presents the maximum unmitigated daily summer or winter emissions associated with operation of the Reactivation Project and continued operation of existing land uses. Details of the emission calculations are provided in Attachment 6.

Table 3
Estimated Maximum Daily Operational Emissions
(pounds per day, unmitigated)

Emission Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions	1.21	0.00	0.01	0.00	0.00	0.00
Vehicular (Mobile) Source Emissions	0.07	0.16	0.77	0.01	0.09	0.03
Energy Use Emissions	0.01	0.05	0.04	0.00	0.00	0.00
Combined Total Emissions	**1.29**	**0.21**	**0.82**	**0.01**	**0.09**	**0.03**
Vehicle Source Emissions Threshold	*25*	*25*	–	–	*N/A*	–
Vehicle Source Emissions Threshold Exceeded?	No	No			N/A	
Area[1] + Vehicle Source Emissions Threshold	*240*	*240*			*80*	
Area[1] + Vehicle Source Emissions Threshold Exceeded?	No	No			No	

Notes: See Attachment A detailed results.
Emissions presented are the maximum daily summer or winter emissions results from CalEEMod.
[1] Area source emissions include emissions from energy (e.g., natural gas for space heating) per SBCAPCD guidance.

As shown in Table 3, estimated operational criteria pollutant emissions would not exceed SBCAPCD thresholds for vehicle source emissions or combined area and vehicle source emissions. The Reactivation Project would not generate vehicular emissions that would exceed the vehicle source ROC or NO_x significance thresholds of 25 pounds per day. Additionally, the Reactivation Project combined area source (including energy source) and vehicle source emissions would not exceed the ROC and NO_x significance thresholds of 240 pounds per day or

the PM_{10} significance threshold of 80 pounds per day. Therefore, impacts with respect to air quality standards resulting from operational emissions would be less than significant.

Regional Air Quality Impacts:

Regional air quality impacts for this project would be any effects of long-term emissions of the Reactivation Project plus any existing emissions at the same location, as well as the effect of long-term emissions of regional projects, on the projected regional air quality or localized air pollution in the County. As discussed in the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents*, the cumulative contribution of emissions from the Reactivation Project to regional levels should be compared with existing programs and plans, including the most recent Clean Air Plan (SBCAPCD 2015a).

Due to the County's nonattainment status for the state 8-hour O_3 standard and its regional nature, if a project's emissions from traffic sources of either of the O_3 precursors, ROC or NO_x, exceed the long-term emission thresholds, then the project's regional impacts would be considered significant. For projects that do not have significant O_3 precursor emissions or localized pollutant impacts, if emissions have been taken into account in the most recent Clean Air Plan growth projections, regional impacts may be considered less than significant. When a project's emissions exceed the thresholds and are clearly not accounted for in the most recent Clean Air Plan growth projections, then the project is considered to have significant regional impacts that must be mitigated to a level of less than significant.

In analyzing regional impacts for the Reactivation Project, the assessment specifically evaluated the contribution to the regional increase in pollutants for which the County is designated as nonattainment for the NAAQS or CAAQS. The County is currently in attainment of NAAQS and is in attainment for all CAAQS with the exception of the state 8-hour O_3 standard and the state standards for PM_{10}. Construction and operation of the Reactivation Project would generate emissions of ROC and NO_x (O_3 precursors) and PM_{10} emissions; however, the Reactivation Project would not exceed SBCAPCD guidance for annual construction emissions or SBCAPCD thresholds for daily operational emissions. Since implementation of the Reactivation Project would result in less-than-significant short-term impacts to air quality associated with construction and less-than-significant long-term impacts associated with operation, its contribution to the County's nonattainment status for state 8-hour O_3 and PM_{10} standards would not be regionally considerable. As the Reactivation Project would not result in significant O_3 precursor emissions or PM_{10} emissions, and it would not represent growth beyond the projections of the SBCAPCD 2013 Clean Air Plan, regional impacts would be less than significant.

Sensitive Receptors:

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a

toxic air contaminant (TAC). Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Some classifications of projects are more likely than others to emit toxic pollutants. Such projects involve commercial or industrial activities such as oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, rail yards, etc. (SBCAPCD 2015a). Construction activities are less likely to result in substantial TAC emissions because they are limited in duration, and would therefore not result in substantial chronic accumulation, and because they typically are not of an intensity that would cause any substantial acute risks.

Construction of the Reactivation Project would result in emissions of diesel particulate from heavy construction equipment and trucks accessing the site. Diesel particulate is characterized as a TAC by the State of California. The Office of Environmental Health Hazard Assessment (OEHHA) has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure, but has not identified health effects due to short-term exposure to diesel exhaust. Due to the temporary nature of project construction, and because the project would not generate substantial diesel emissions from construction equipment or trucks, the Reactivation Project would not result in a significant health risk to sensitive receptors, including the adjacent Rescue Mission and nearby multi-family residential uses from TACs during construction.

Additionally, the scope, duration and scale of construction activities are limited, as is evidenced by the low levels of emissions presented in Table 2. Operation of the Reactivation Project would include operation of the facility that would be powered by electricity provided by the SCE grid. Operation of the Reactivation Project would not involve the use of stationary sources such as

generators that are typically associated with TAC emissions and therefore would not result in substantial TAC or criteria pollutant emissions. Accordingly, the Reactivation Project would not result in a potential increase in adverse health effects associated with operation, and a health risk assessment (screening or formal) is not required. Therefore, impacts related to potentially exposing sensitive receptors to substantial pollutant concentrations would be less than significant.

Additionally, the health risk public-notification thresholds adopted by the SBCAPCD Board is 10 excess cancer cases in a million for cancer risk and a hazard index of more than one (1.0) for non-cancer risk. The hazard index of more than 1.0 means that predicted levels of a toxic pollutant are greater than the reference exposure level, which is considered the level below which adverse health effects are not expected. Examples of projects that emit toxic pollutants include oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, and rail yards (SBCAPCD 2015a). Operation of the Reactivation Project would not emit TACs and toxic contaminants are not anticipated to be present at the project site; therefore, a formal health risk assessment would not be required for the Reactivation Project. Accordingly, the Reactivation Project is not anticipated to result in emissions that would exceed the SBCAPCD Board-adopted health risk notification thresholds.

Regarding CO "hot spots", due to the relatively low background ambient CO levels in the County, localized CO impacts associated with congested intersections are not expected to exceed the CO health-related air quality standards (SBCAPCD 2015a). The most stringent ambient air quality standard for CO is the CAAQS at 20 parts per million (ppm) for the 1-hour standard and 9.0 ppm for the 8-hour standard. The Canon Perdido monitoring station, located at 700 East Canon Perdido, is the closest monitoring station to the Desalination Facility site where CO concentrations are measured. The Canon Perdido station reported 1-hour concentrations between 2.0 and 3.2, and 8-hour concentrations between 0.9 to 1.9 during the 2010-2012 monitoring period which is the most recent CO data available for the Canon Perdido station (CARB 2015; EPA 2014). Additionally, the Reactivation Project is not considered a substantial trip-generating project as construction-related trips would be limited to haul trucks removing demolition material, and periodic delivery trucks for phased equipment deliveries over the course of construction. Operational trips associated with on-going facility operations would consist of 8 daily employees. As a result of the minimal vehicle trips generated during short-term construction activities and long-term operations, the Reactivation Project would not generate substantial trips such that CO hot spots would be created at nearby intersections. Therefore, a formal CO “hot spots” analysis is not required.

Odors:

The potential for the Reactivation Project to create objectionable odors affecting a considerable number of people to odors or other air quality nuisance problems is also analyzed in this Addendum. The City’s Initial Study checklist provides guidelines for discussion of odors in the context of nuisance. A public nuisance is defined by SBCAPCD Rule 303 as “such quantities of

air contaminants or other material in violation of Section 41700 of the Health and Safety Code which may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or to the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." Although the SBCAPCD has not adopted quantitative thresholds of significance for odor impacts, the SBCAPCD recommends the development of an Odor Abatement Plan for projects that may generate nuisance odors that may affect a substantial number of people.

Construction Odor Impacts

Potential sources that may emit odors during construction activities include diesel equipment and gasoline fumes and solvents from the application of paint. Odors from these sources would be localized and generally confined to the Desalination Facility site. The Rescue Mission is adjacent to the Desalination Facility site, and is the closest sensitive receptor to the Desalination Facility. In addition, multifamily residences are located approximately 640 feet to the north of the site. The release of potential odor-causing compounds would tend to be during the work day, when many residents would not be at home. Additionally with respect to the multifamily residential uses, odors from construction equipment would be concentrated at the construction site, and would dissipate substantially before reaching the residential uses. Furthermore, the SBCAPCD rules restrict the ROC content (the source of odor-causing compounds) in paints. Such odors are temporary and generally occur at magnitudes that dissipate quickly, and in the case of the Reactivation Project, would not affect substantial numbers of people due to the location of the construction activities relative to sensitive receptors. Therefore, the Reactivation Project would not create objectionable odors affecting a substantial number of people or an odor nuisance, and impacts associated with odors during construction would be considered less than significant.

Operational Odor Impacts

Certain projects have the potential to cause significant odor impacts because of the nature of their operation and their location. Examples include fast food restaurants, bakeries, and coffee roasting facilities (SBCAPCD 2015a). Other projects may be new developments (e.g., residential areas or sensitive receptors) that are located downwind of existing sources of odor. The Reactivation Project would not result in the creation of a new land use that is commonly associated with odors and thus not create objectionable odors affecting a substantial number of people. For the same reasons, the development of an Odor Abatement Plan would not be required for the Reactivation Project. Therefore, project operations would result in a less-than-significant odor impact.

Greenhouse Gases:

The 1991 EIR quantified CO_2 emissions for the Approved Project. The operational characteristics of the Reactivation Project, including energy use, will not substantially change from those of the Approved Project. Since the time that the 1991 EIR was certified, the City has taken certain actions related to climate change, including modification to the City's CEQA Significance Criteria to address greenhouse gas emission and climate change, as well as adoption of a Climate Action Plan (CAP) in 2012. To address climate change in accordance with the updated Significance Criteria, this Addendum provides an analysis of greenhouse gas emissions, and relates those emissions to the City's CAP.

Local Guidance for Analyzing GHG Impacts

City of Santa Barbara

The City of Santa Barbara adopted a CAP with the purpose of reducing the rate of carbon emissions generated within the Santa Barbara community and planning for adaptation of Santa Barbara to climate changes. The City Council adopted both the CAP and an EIR for the CAP on September 19, 2012, which are included among the requirements of CEQA Guidelines Section 15183.5(b) for use as a GHG streamlining tool. The CAP includes an emissions inventory of the City of Santa Barbara's government operations and a citywide GHG emissions estimate for the community of Santa Barbara. These GHG emission inventories were conducted for historical years, including 1990, as well as future estimates for 2020 and 2030 to demonstrate compliance with the goal of reducing communitywide GHG emissions to 1990 levels by 2020. Appendix C of the CAP, Initial Guidelines for Individual Project Design and Permitting, provides initial general guidance for including GHG reduction and climate adaptation measures as presented in a chart form, to which the Reactivation Project was compared. Measures such as energy, travel and land use, and water conservation measures, were compared to determine the Reactivation Project's consistency with the CAP.

Santa Barbara County Air Pollution Control District

The SBAPCD provides suggested guidance for criteria air pollutant quantitative thresholds for purposes of conducting air quality assessments. That guidance is contained in the SBAPCD "Scope and Content for Air Quality Sections of Environmental Documents", but does not include quantitative thresholds for GHG impacts. For many years, the City had a practice of using the SBAPCD recommended thresholds for criteria air pollutants, and those thresholds are included in the City's CEQA Initial Study Guidelines. In 1979, as part of the City's Master Environmental Assessment, the City adopted the air quality thresholds of the predecessor agency of the SBCAPCD for purposes of air quality analysis and attainment. (City MEA, Appendix O, Policy D.) Since that time, the City has utilized the SBCAPCD air quality thresholds when the City has not adopted its own thresholds.

Recently, the SBCAPCD adopted a quantitative CEQA threshold of significance for GHG emissions from stationary source projects. The guidance states that a proposed stationary source project would not have a significant GHG impact, if operation of the project would:

- Emit less than the screening significance level of 10,000 MT per year CO_2E, or
- Show compliance with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions (sources subject to the AB 32 Cap-and-Trade requirements pursuant to Title 17, Article 5 (California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms) would meet the criteria), or
- Show consistency with the AB 32 Scoping Plan GHG emission reduction goals by reducing project emissions 15.3% below Business As Usual (BAU).

The SBCAPCD defines stationary source projects as "equipment, processes and operations that require an SBCAPCD permit to operate" (SBCAPCD 2015b).

The proposed project is not a stationary source and does not require a permit from the SBCAPCD. In addition, SBAPCD has not yet included the 10,000 MT per year CO_2E MT threshold in their Scope and Content Guidelines suggested for other agencies. Nevertheless, the SBCAPCD threshold does provide some guidance when considering whether the Reactivation Project's contribution to GHG emissions should be considered cumulatively considerable. Consistent with adopted City policy, the City utilized the SBCAPCD 10,000 MT per year CO_2E MT threshold in the course of its updated analysis of GHG emissions.

County of Santa Barbara

On May 19, 2015, the County of Santa Barbara amended the Santa Barbara County Environmental Thresholds and Guidelines Manual to specifically add a CEQA threshold to determine the significance of greenhouse gas (GHG) emissions from proposed industrial stationary sources subject to environmental review. The threshold applies to industrial stationary sources subject to discretionary approvals by the County, where the County is the CEQA lead agency. Under the new threshold, projects with GHG emissions higher than 1,000 MT per year CO_2E would be obligated to reduce emissions to below 1,000 MT per year CO_2E through onsite measures, offsite offsets, or both to be considered a less-than-significant cumulative impact.

The threshold applies to both direct and indirect emissions of greenhouse gases, including emissions associated with providing a project with electricity, including generation and transmission. The amended Thresholds and Guidelines Manual does not define an industrial stationary source, but as noted earlier, it specifically applies to uses that are subject to discretionary approvals by the County. The County does not have land use jurisdiction or any other discretionary authority over the Reactivation Project. Since the County's threshold does not legally apply to the Reactivation Project and the City does not have a practice of using

County thresholds for air quality impacts, the City did not look to the County threshold when updating the analysis of GHG emissions.

Construction Impacts

Construction related to the Reactivation Project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. GHG emissions associated with temporary construction activities were quantified using CalEEMod. A detailed depiction of the construction schedule including information regarding phasing, equipment utilized during each phase, haul trucks, vendor trucks, and worker vehicles is included in Attachment 6. On-site sources of GHG emissions include off-road equipment, and off-site sources include hauling and vendor trucks, worker vehicles, and marine vessels used for the desalination plant intake. Emissions from on-site and off-site sources are combined for the purposes of this analysis; and a breakdown of emissions by source is provided in Attachment 6.

Table 4, Estimated Annual Construction Greenhouse Gas Emissions, presents construction emissions for the Reactivation Project in 2015 and 2016 from on-site and off-site emission sources. Additionally, the construction GHG emissions are shown annualized over 25 years, which is conservatively assumed to be the life of the Reactivation Project for purposes of amortizing the construction emissions.

Table 4
Estimated Annual Construction Greenhouse Gas Emissions

Year	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Desalination Plant	196.69	0.04	0.00	197.61
Intake	–	–	–	203.56
Total				**401.17**
Annualized Construction Emissions[1]	–	–	–	***16.04***

Notes: See Appendix A for detailed results.
MT CO_2 – metric tons carbon dioxide, MT CH_4 – metric tons methane, MT N_2O – metric tons nitrous oxide, MT CO_2E – metric tons carbon dioxide equivalent
[1] Construction emissions were annualized over 25 years per SLOCAPCD guidance for commercial (non-residential) projects.

As shown in Table 4, the estimated GHG emissions generated during construction would be approximately 401.17 MT CO_2E total. Estimated construction emissions annualized over 25 years would be approximately 16.04 MT CO_2E per year. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis below.

Operational Impacts

Although the Reactivation Project would result in a production capacity of 3,125 AFY of desalinated water by the summer of 2016, the operational impacts analysis conservatively

assumes that the capacity of the Reactivation Project would be 7,500 AFY, which could be possible if drought conditions continue through the winter of 2015-2016, and the City Council approves a contract amendment. In such a scenario, operation resulting from the Reactivation Project would indirectly generate GHG emissions from electricity used for the desalination of 7,500 AFY of water, employee vehicular traffic, energy use (natural gas and generation of electricity associated with worker facilities), solid waste generation, and generation of electricity associated with water supply and wastewater treatment. The estimated operational project-generated GHG emissions from these sources in 2016 (which is conservative, since the full 7,500 AFY capacity would not be realized in the first year of project operation) are shown in Table 5, Estimated Annual Operational Greenhouse Gas Emissions (2016).

Table 5
Estimated Annual Operational Greenhouse Gas Emissions (2016)

Emission Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Area	0.01	0.00	0.00	0.01
Energy	65.57	0.01	0.00	65.85
Mobile	16.56	0.01	0.00	16.58
Waste	8.31	0.49	0.00	18.63
Water	1.53	0.01	0.00	1.75
Electricity Use for Desalination	–	–	–	8,860.09
Total	–	–	–	***8,962.91***
Annualized Construction Emissions[1]	–	–	–	16.04
Operational and Annualized Construction Emissions	–	–	–	**8,978.95**

Notes: See Appendix A for detailed results.
MT CO_2 – metric tons carbon dioxide, MT CH_4 – metric tons methane, MT N_2O – metric tons nitrous oxide, MT CO_2E – metric tons carbon dioxide equivalent
1 Construction emissions were annualized over 25 years per SLOAPCD guidance.

The estimated annual GHG emissions during operation would be approximately 8,978.95MT CO_2E per year as a result of operation of the Reactivation Project plus annualized construction emissions. SCE would provide electricity to the site. This analysis assumes that SCE has only procured 22% of renewable energy, which was the level of renewable energy procurement by SCE in 2013 and does not account for future procurement of renewable energy by SCE to meet the required 33% California Renewable Portfolio Standard.

The 1991 EIR evaluated the potential impacts of the project's energy use, including addressing the potential GHG emissions that could be produced by energy demand. In this Addendum analysis, the potential GHG emissions resulting from the Approved Project's energy use were addressed based on the SCE energy mix in 1990, at the time that the 1991 EIR analysis was conducted. Although it did not evaluate the significance of GHG emissions on the environment, the 1991 EIR indicated that a 10,000 acre-feet per year (AFY) desalination plant requiring 8

megawatts (MW) of power could result in approximately 38,000 tons of CO_2 per year (approximately 34,473 MT CO_2 per year). As shown in Table 5, the estimated GHG emissions associated with operation of the Reactivation Project would be substantially less than that previously considered in the 1991 EIR.

Although the City has not adopted a quantitative CEQA significance threshold for GHG emissions, the City adopted a CAP that is intended to address the issue of climate change for the City of Santa Barbara in accordance with AB 32, which calls for a reduction in GHG emissions to 1990 levels by 2020. The City Council adopted both the CAP and an EIR for the CAP on September 19, 2012, which are included among the requirements of State CEQA Guidelines Section 15183.5(b) for use as a GHG streamlining tool.

As part of the City's CAP, a GHG emissions inventory was conducted to determine what the citywide level of GHG emissions was in 1990 and to estimate what the citywide GHG emissions would be in 2020 with implementation of the CAP and other statewide measures. The City's CAP states that the citywide GHG emission levels in 1990 were an estimated 724,389 MT CO_2 per year and that the estimated citywide GHG emissions in 2020 with implementation of the CAP and other statewide measures would be an estimated 543,185 MT CO_2 per year. With the addition of the Reactivation Project's estimated annual GHG emissions (8,978.95 MT CO_2E per year), the estimated citywide GHG emissions in 2020 (with implementation of the CAP and other statewide measures) would be approximately 552,164.4 MT CO_2 per year. Annual citywide emissions of 552,164.4 MT CO_2 per year would still be substantially less than the goal of AB 32 to reduce the citywide GHG emission levels in 2020 to 1990 levels, which were approximately 724,389 MT CO_2 per year. Accordingly, the Reactivation Project would not conflict with the target GHG emission levels in the CAP that are required to meet the goal of AB 32. Based on these considerations, impacts associated with the potential for the Reactivation Project to generate GHG emissions, either directly or indirectly, would be less than significant.

<u>Consistency with an Applicable Plan, Policy, or Regulation Adopted to Reduce GHG Emissions</u>

The Reactivation Project would not obstruct the target established in the City's CAP of achieving 1990 citywide GHG emission levels by 2020 (approximately 724,389 MT CO_2 per year). In addition to the quantitative emissions inventory in the City's CAP, the CAP provides initial general guidance for including GHG reduction and climate adaptation measures for projects. The Initial Guidelines for Individual Project Design and Permitting in the CAP, includes measures for carbon reduction and climate adaptation meant for a variety of development projects that are either required or encouraged. The Reactivation Project includes features that are more fully described in Section 4 that improve energy efficiency, such as Variable Frequency Drive pumps, and would also comply with Building Code requirements that reflect the applicable CAP measures, including Installing energy-efficient lighting fixtures, installing occupancy sensors and timer switches, installing lower energy air conditioning systems using fresh air cooling on mild days, installing direct digital controls on heating and air conditioning (HVAC) units, adding sub-meter facilities to monitor and analyze energy use, mechanical retro-

commissioning of City facilities, replacing pumps and motors with more efficient, variable speed equipment, and consolidating office equipment.. As such, the Reactivation Project would not conflict with the City's CAP and impacts would be less than significant.

Energy Use:

Appendix F of the CEQA Guidelines provides guidance on the discussion of energy use of a project in an EIR. As noted in the summary of the previous EIRs, energy use was considered and discussed in the context of electrical energy consumed in the desalination process, as well as how the level of consumption relates to available energy supplies. Moreover, the description of the Reactivation Project at Section 4.2 of this Addendum describes energy efficiency upgrades that will be implemented, including replacement of product water pumps and motors with new Variable Frequency Drive pumps that will improve energy efficiency, and will also compatibility with SCE's system. Therefore, consideration of energy consumption was part of the analyses of the previous EIRs, and in recognizing that energy consumption is a large component of the operational costs, the Reactivation Project proposes to improve energy efficiency to ensure that energy is not used in a wasteful, inefficient or unnecessary fashion.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes with respect to circumstances under which the Approved Project is undertaken, and there is no new information of substantial importance that has become available relative to air quality or greenhouse gas emissions. The Court of Appeal in *Citizens for Responsible Equitable Envtl Dev. V. City of San Diego* (2011) 196 Cal. App. 4th 515, 531 specifically found that the effect of GHG emissions on climate change does not constitute "new information" with respect to a project that was evaluated in a prior EIR. (see also *Citizens against Airport Pollution v. City of San Jose* (2014) 227 Cal App 4th 788).

Conclusion: The Reactivation Project would not increase the severity of previously identified air quality impacts, nor would it result in any new significant effects related to air emission that were not previously identified in either the 1991 EIR or the 1994 EIR. Additionally, in light of the finding in *Citizens for Responsible Equitable Envtl Dev. V. City of San Diego*, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken, and no new information of substantial importance which was not known and could not have been known when the EIRs were certified has since been identified. When compared against the SBCAPCD 10,000 MT per year CO_2E MT screening threshold for industrial stationary sources, the GHG emissions anticipated from the Reactivation Project are less than significant. Therefore, changes to Air Quality and Greenhouse Gas Emissions resulting from the proposed Reactivation Project do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines, section 15162.

5.3 BIOLOGICAL RESOURCES

Summary of Analysis from the 1991 EIR: Analysis of biological resources impacts and EIR-identified mitigation measures for the Approved Project are contained in the 1991 EIR, Section 3.4, pages 3-37 through 3-46. The 1991 EIR biological resources assessment considered both terrestrial and marine resources.

Terrestrial Biology: The assessment regarding terrestrial biological resources indicated that no significant adverse impacts to terrestrial biology would result from construction or operation of the Approved Project. The 1991 EIR describes the Approved Project sites as being located in an urban setting, with most, if not all, vegetation comprised of landscaping or other non-sensitive communities. No significant impacts were identified.

Marine Biology: The 1991 EIR characterizes the marine habitats in the vicinity of the intake structures, including rocky reefs, kelp beds, and sand flats, as well as four forests of giant kelp within one mile of the coast line that in the vicinity of the southern end of the existing ocean outfall. It identifies commercial and sport fisheries, including some shellfishing being present, and notes that among the large number of fish species which may be observed in the City's coastal waters are sanddabs, surf perch, rock fish, croakers, sharks, halibut, and bass. Macroinvertebrates are noted to include sea urchins, octopus, starfish, shrimp, crab, scallops, and sea cucumbers.

The EIR also describes and includes data related to plankton. The plankton surveyed as part of the desalination plant studies were reported to be composed of the following groups: Predominant zooplankton: Copepods, Larvaceans, and Ostracods. The following three groups composed less than 1 percent of total by number: Acantharia, larval fish, and Chaetognaths (rare). Copepods were noted to make up over 80 percent of zooplankton biomass. The concentration of organisms reported was noted to be high for open-ocean but said to be common, although high, for some coastal regions.

The 1991 EIR identifies construction-related work associated with the intake structure and intake pipe to be minor, and to result in less-than-significant impacts.

The 1991 EIR noted that the operation of intake pumps would generate seawater velocities through the screens that are substantially lower than the lowermost range of the natural ocean currents that have been reported in the vicinity of the outfall. Consequently, this flow was not considered sufficient to cause the entrainment of organisms (e.g. fishes, mammals) in the vicinity of the intake structure. However, plankton, fish and eggs that pass through the 3/8 inch intake screen are pumped along with seawater. These organisms, primarily planktonic, would expire when exposed to the desalination process. This impact was found to be less than significant because it would not result in a significant depletion of these organisms based on their relative abundance and rapid regeneration as a consequence of their short life cycles.

The 1991 EIR also assesses the effects related to variable salinity in the combined discharge of the Approved Project and the EEWWTP, and found that the anticipated range of salinities were not expected to result in significant effects to marine organisms.

Summary of Analysis from the 1994 EIR: The 1994 EIR did not address terrestrial biology or construction, as it only analyzed conversion of the Approved Project from temporary to permanent use. It did however contain a detailed assessment of the marine systems potentially affected by the Approved Project, and included a marine biology study as a separate appendix to the EIR. The following is a brief summary of that characterization, focusing on effects related to converting the screened open ocean intake to a permanent operating condition.

The 1994 EIR references 24 plankton studies conducted over several decades, including a project specific study that was conducted for the desalination plant in 1991, that characterize the type and relative abundance of plankton within the project area, and provide regional context within the Southern California Bight.

The 1994 EIR concluded that plankton losses due to entrainment would be unavoidable, but would be a less-than-significant impact under all production levels (up to 10,000 AFY of desalinated water production). The 1994 EIR states that because planktonic organisms regenerate quickly, and the Santa Barbara Channel is a zone of high plankton productivity because of local upwelling processes, plankton mortality resulting from seawater intake is not expected to adversely affect local or regional populations of plankton.

Significance Criteria:

Would the project:

a) Have a substantial adverse effect on any riparian habitat or other sensitive natural community?
b) Have a substantial adverse effect on protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
c) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?
d) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
e) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species?
f) 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?

Analysis:

Riparian Habitats, Sensitive Natural Communities:

Construction: Because the Reactivation Project involves repair and maintenance activities at the intake structures, as well as at some of the upland facility locations, analyses of biological effects from the repair and maintenance activities were conducted by Tenera Environmental and by Dudek for marine and terrestrial biological impacts, respectively (Santa Barbara Desalination Plant Reactivation Intake Inspection and Biological Assessment Report (Tenera 2014a), Santa Barbara Desalination Plant Reactivation Work Barge Anchoring Locations Subtidal Biological Survey Report (Tenera 2014b), Biological Assessment for the Charles Meyer Desalination Facility (Dudek 2014b), and Biological Resources Assessment Report for the Charles Meyer Desalination Facility in relation to the State Revolving Fund (SRF) Grant (Dudek 2015a)). These studies are included as attachments 1, 2, 4, and 5 to this Addendum.

Terrestrial Communities: Surveys of each of the locations where construction of the Reactivation Project components would take place were performed. As noted earlier, most of the onshore facilities were originally sited so as to avoid direct disturbance of sensitive habitats, and as such are located in developed areas that are devoid of native vegetation and species. The surveys concluded that the Reactivation Project would have less than significant impacts on terrestrial biological resources (Dudek 2015a). The existing weir box location on East Beach has been previously identified as potential habitat for Western snowy plover. The recent surveys included a focused habitat assessment for snowy plover, which concluded that a combination of natural and anthropogenic disturbances within the construction area is expected to continue to preclude this species from nesting in proximity of the weir box. Nonetheless, to further minimize any potential impact to snowy plover or any other wildlife of concern, mitigation measures for a worker education program (BIO-2), temporary fencing and access control/restrictions (BIO-3 through BIO-5), lighting restrictions (BIO-6), pre-construction surveys and monitoring (BIO-7 through BIO-13) are listed in the MMRP (Attachment 7) for the Reactivation Project (Dudek 2014b). Avoidance of indirect effects will be achieved with application of measures BIO-14 through BIO-18. Moreover, as part of Permit 9-14-1781, the Reactivation Project must comply with Special Conditions imposed by the CCC to minimize impacts on coastal habitat, including protective avian species. This includes the requirement to prepare a Nest Survey Plan to identify the presence of nearby nests and to reduce potential impacts to active nests (Special Condition 8). These Special Conditions are listed in an attachment to the MMRP, which is also attached to this Addendum. Implementation of the above described mitigation measures and these Special Conditions will minimize potential impacts to terrestrial communities to below a level of significance

Marine Communities: A biological assessment of the proposed repair and maintenance work at the intake structures is set forth in two studies by Tenera Environmental (Tenera 2014a, 2014b). The biological surveys conducted for the Reactivation Project by Tenera Environmental in September and October 2014 concluded that marine resources in the area of the intake and

outfall structures are substantially unchanged since the time of certification of the 1991 EIR (i.e., seabed within the project area is primarily sandy flat bottom with minimal hard strata, consistent with previous EIR analysis). The reports conclude that with implementation of measures BIO-19 through BIO-21 outlined in the MMRP (Attachment 7), including a marine mammal protection plan and anchoring plan, impacts to marine resources generated by the preparation and installation of the screen structures would be less than significant, consistent with findings of the 1991 EIR. In addition, as part of Permit 9-14-1781, the Reactivation Project will need to comply with the Special Conditions imposed by the CCC to minimize impacts on coastal waters, habitats, and species, including the preparation of additional anchoring plans (Special Conditions 3 and 4), the implementation of a Turbidity Minimization Plan (Special Condition 5), the implementation of a Marine Mammal Monitoring Plan (Special Condition 6), and a Hazardous Material Spill Prevention and Response Plan for all vessels and vehicles to be used during project activities (Special Condition 7). Implementation of the above described mitigation measures and these Special Conditions will minimize potential impacts to marine communities to below a level of significance.

Operation: The Reactivation Project would not result in any changes to the operational characteristics of the Approved Project relative to biological resources, because the basic operation and the production capacity of the Approved Project would not change with the Reactivation Project, and impacts would be less than significant.

Terrestrial Communities: No aspects of the proposed operation of the Reactivation Project would deviate from the operational characteristics of the Approved Project as analyzed in both the 1991 EIR and the 1994 EIR with respect to terrestrial biological communities. Therefore, no changes in the analysis or conclusions of the analyses presented in those documents would result, and impacts would be less than significant.

Marine Communities: The operational characteristics of the Approved Project related to the intake and discharge would be the same with the proposed Reactivation Project. Therefore, the conclusions reached in the 1991 EIR and the 1994 EIR with respect to the significance of impacts on marine life would also not change. In issuing an amendment to the Approved Project's discharge permit in January 2015 (REVISED ORDER NO. R3-2010-011, NPDES No. CA0048143), the Central Coast Regional Water Quality Control Board (Regional Board) found that the Approved Project's technology complied with Section 13142.5(b) of the California Water Code at the time it was permitted. Section 13142.5(b) requires the Regional Board to ensure that facilities that utilize seawater for cooling or industrial purposes to demonstrate that the best available site, design, technology and mitigation feasible are employed to minimize intake and mortality of all forms of marine life. These findings are consistent with the findings made by the CCC in their approval of both the temporary and permanent CDPs for the Approved Project – specifically that operation of the Approved Project would be consistent with Sections 30230 and 30231 of the California Coastal Act, pertaining to protection of marine resources. Moreover, in

approving Permit 9-14-1781, the CCC found that the project, "as conditioned, conforms to the relevant marine life and coastal water protection policies of the Coastal Act."

The Reactivation Project also includes replacing the existing intake screen structures with new structures that use newer technology, as described in Section 4.1 of this Addendum. The new screens would exclude organisms that are greater than 1mm in size, further reducing the number of entrained organisms as compared to the screens previously approved for the Approved Project.

As with the intake operation, the operational characteristics of the discharge would also not be modified from what was analyzed and put into operation for the Approved Project. No increase in brine disposal is proposed with the Reactivation Project, and no change to the method of disposal is proposed.

In summary, the level of impact analyzed in the 1991 EIR and 1994 EIR regarding effects on marine communities from variable salinity levels in the discharge would remain the same under the Reactivation Project. The level of impact analyzed in the 1991 EIR and 1994 EIR regarding effects on marine communities , or from impingement and entrainment impacts associated with the source water intake would be slightly less with the Reactivation Project, because improved screening technology would result in reduced impacts. Impacts would be less than significant.

Wetlands:

The Reactivation Project does not involve construction in wetland areas. Mitigation measures that include avoidance of wetland resources, and protection from indirect effects on wetlands would be implemented, and have been included in the MMRP (BIO-18), which is attached to this Addendum (Attachment 7).Therefore, impacts would be less than significant.

Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) Conflicts:

The Reactivation Project does not involve any construction or operational impacts within an area of an approved HCP or NCCP, and therefore impacts are less than significant.

Local Policies/Ordinances Protecting Biological Resources:

Applicable local policies protecting biological resources are found in the City's Local Coastal Program (LCP), which are also consistent with the California Coastal Act. The City approved Coastal Development Permit (CDP) for the Approved Project, including findings of consistency with the LCP. The Reactivation Project would result in upgrades and improvements related to reduction in impacts on biological results, such as updated intake screens that would provide additional protection of marine resources. Additionally, the Reactivation Project is subject to the same mitigation measures and conditions that were required of the Approved Project (see MMRP, Attachment 7). In addition to the City-issued CDP, the California Coastal Commission (CCC) also issued two CDPs for the Approved Project initially for construction and later

conversion of the Approved Project to a permanent use. More recently, the CCC additionally issued a CDP for the Reactivation Project, which specifically addresses the repair and maintenance activities within the CCC jurisdiction related to the Reactivation Project. Special Conditions imposed on the CDP are referenced as an attachment to the MMRP, which is also attached to this Addendum.

Effects on Candidate, Sensitive, or Special Status Species:

Construction: Because the Reactivation Project involves repair and maintenance activities at the intake structures, as well as at some of the upland facility locations, analyses of effects on candidate, sensitive and special status species from the repair and maintenance activities were conducted by Tenera Environmental and by Dudek for marine and terrestrial biological species, respectively (Santa Barbara Desalination Plant Reactivation Intake Inspection and Biological Assessment Report (Tenera 2014a), Santa Barbara Desalination Plant Reactivation Work Barge Anchoring Locations Subtidal Biological Survey Report (Tenera 2014b), Biological Assessment for the Charles Meyer Desalination Facility (Dudek 2014b), and Biological Resources Assessment Report for the Charles Meyer Desalination Facility in relation to the State Revolving Fund (SRF) Grant (Dudek 2015a)). These studies are included as attachments 1, 2, 4, and 5 to this Addendum.

Terrestrial Species: Surveys of each of the locations where construction of the Reactivation Project components would take place were performed. As noted earlier, most of the onshore facilities were originally sited so as to avoid direct disturbance of sensitive habitats, and as such are located in developed areas that are devoid of native vegetation and species. The surveys concluded that the Reactivation Project would have less than significant impacts on terrestrial species (Dudek 2015a). The existing weir box location on East Beach has been previously identified as potential habitat for Western snowy plover. The recent surveys included a focused habitat assessment for snowy plover, which concluded that a combination of natural and anthropogenic disturbances within the construction area is expected to continue to preclude this species from nesting in proximity of the weir box. Nonetheless, to further minimize any potential impact to snowy plover or any other wildlife of concern, mitigation measures for a worker education program (BIO-2), temporary fencing and access control/restrictions (BIO-3 through BIO-5), lighting restrictions (BIO-6), pre-construction surveys and monitoring (BIO-7 through BIO-13) are listed in the MMRP (Attachment 7) for the Reactivation Project (Dudek 2014b). Avoidance of indirect effects will be achieved with application of measures BIO-14 through BIO-18. Moreover, as part of Permit 9-14-1781, the Reactivation Project must comply with Special Conditions imposed by the CCC to minimize impacts on coastal habitat, including protective avian species. This includes the requirement to prepare a Nest Survey Plan to identify the presence of nearby nests and to reduce potential impacts to active nests (Special Condition 8). These Special Conditions are listed in an attachment to the MMRP, which is also attached to this Addendum. Implementation of the above described mitigation measures and these Special Conditions will minimize potential impacts to terrestrial species to below a level of significance

Marine Species: A biological assessment of the proposed repair and maintenance work at the intake structures is set forth in two studies by Tenera Environmental (Tenera 2014a, 2014b). The biological surveys conducted for the Reactivation Project by Tenera Environmental in September and October 2014 concluded that marine species in the area of the intake and outfall structures are substantially unchanged since the time of certification of the 1991 EIR (i.e., seabed within the project area is primarily sandy flat bottom with minimal hard strata, consistent with previous EIR analysis). The reports conclude that with implementation of measures BIO-19 through BIO-21 outlined in the MMRP (Attachment 7), including a marine mammal protection plan and anchoring plan, impacts to marine species generated by the preparation and installation of the screen structures would be less than significant, consistent with findings of the 1991 EIR. In addition, as part of Permit 9-14-1781, the Reactivation Project must comply with the Special Conditions imposed by the CCC to minimize impacts on coastal waters, habitats, and species, including the preparation of additional anchoring plans (Special Conditions 3 and 4), the implementation of a Turbidity Minimization Plan (Special Condition 5), the implementation of a Marine Mammal Monitoring Plan (Special Condition 6), and a Hazardous Material Spill Prevention and Response Plan for all vessels and vehicles to be used during project activities (Special Condition 7). Implementation of the above described mitigation measures and these Special Conditions will minimize potential impacts to marine species to below a level of significance.

Operation: The Reactivation Project would not result in any changes to the operational characteristics of the Approved Project relative to candidate, sensitive and special status species, because the basic operation and the production capacity of the Approved Project would not change with the Reactivation Project, and impacts would be less than significant.

Terrestrial Species: No aspects of the proposed operation of the Reactivation Project would deviate from the operational characteristics of the Approved Project as analyzed in both the 1991 EIR and the 1994 EIR with respect to terrestrial species. Therefore, no changes in the analysis or conclusions of the analyses presented in those documents would result, and impacts would be less than significant.

Marine Species: The operational characteristics of the Approved Project related to the intake and discharge would be the same with the proposed Reactivation Project. Therefore, the conclusions reached in the 1991 EIR and the 1994 EIR with respect to the significance of impacts on marine life would also not change. In issuing an amendment to the Approved Project's discharge permit in January 2015 (REVISED ORDER NO. R3-2010-011, NPDES No. CA0048143), the Central Coast Regional Water Quality Control Board (Regional Board) found that the Desalination Facility's technology complied with Section 13142.5(b) of the California Water Code at the time it was permitted. Section 13142.5(b) requires the Regional Board to ensure that facilities that utilize seawater for cooling or industrial purposes to demonstrate that the best available site, design, technology and mitigation feasible are employed to minimize intake and mortality of all forms of marine life. These findings are consistent with the findings

made by the CCC in their approval of both the temporary and permanent CDPs for the Approved Project – specifically that operation of the Approved Project would be consistent with Sections 30230 and 30231 of the California Coastal Act, pertaining to protection of marine resources. Moreover, in approving Permit 9-14-1781, the CCC found that the project, "as conditioned, conforms to the relevant marine life and coastal water protection policies of the Coastal Act."

The Reactivation Project also includes replacing the existing intake screen structures with new structures that use newer technology, as described in Section 4.1 of this Addendum. The new screens would exclude organisms that are greater than 1mm in size, further reducing the number of entrained organisms.

As with the intake operation, the operational characteristics of the discharge would also not be modified from what was analyzed and put into operation for the Approved Project. No increase in brine disposal is proposed with the Reactivation Project, and no change to the method of disposal is proposed.

In summary, the level of impact analyzed in the 1991 EIR and 1994 EIR regarding effects on the marine species from variable salinity levels in the discharge, or impingement and entrainment impacts associated with the source water intake would be slightly less with the Reactivation Project, because improved screening technology would result in reduced impacts. Impacts would be less than significant.

<u>Wildlife Movement:</u>

As noted above, most of the onshore facilities of the Reactivation Project are located in developed areas that are devoid of native vegetation and species, and more particularly in areas that do not serve as corridors or otherwise facilitate wildlife movement. Therefore neither the repair and maintenance activities, nor operation of the Reactivation Project would have the potential to interfere with wildlife movement. Repair and maintenance activities proposed for the offshore components of the Reactivation Project are subject to mitigation measure BIO-21 to avoid impacts on marine mammals, including effects related to movement and migration (MMRP, Attachment 7). Operation of the intake would not have the potential to interfere with the movement of marine species, because the Reactivation Project would not substantially change the existing configuration of the intake structures. Impacts would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance:

There have been no changes in the level of sensitivity or listing status of species present within the terrestrial and marine environments directly or indirectly affected by the Approved Project including with the Reactivation Project. The area of the weir box has been designated as Critical Habitat for the snowy plover, but such designation does not change the regulatory status of the

species, nor does it change the suitability of the habitat in the area of the weir box for the species. Designation of Critical Habitat merely acknowledges constituent elements of habitat for listed species that may be present in a particular area, and imposes certain regulatory procedures if suitable habitat were to be modified adversely. As noted in the Analysis section regarding Riparian Habitats, Sensitive Natural Communities, and Sensitive/Listed Species, because of the disturbed nature of the habitat in the vicinity of the weir structure, the Reactivation Project would not adversely modify the Critical Habitat, and therefore, no regulatory effects of the Critical Habitat designation would be triggered. No changes to habitats or habitat suitability for sensitive species have occurred within areas affected by the Approved Project since the time that either the 1991 EIR or 1994 EIR was certified. Further, organism entrainment and impingement is not a changed circumstance and there is no "new information of substantial importance" available now that was not known and could not have been known with exercise of reasonable diligence when the City certified the 1991 EIR or the 1994 EIR. Numerous studies regarding plankton entrainment had been prepared at the time of the 1994 EIR's certification, it included a specific analysis of the Approved Project's potential entrainment impacts and concluded they would be less than significant.

Conclusion: No new or increased impacts are anticipated for terrestrial resources because the proposed Reactivation Project is within existing developed areas, or areas that are frequently influenced by human presence (in the case of the East Beach weir box). The Reactivation Project is generally within disturbed areas that do not contain any sensitive biological resources or suitable habitat for sensitive species. In addition, the Reactivation Project includes the implementation of various mitigation measures and Special Conditions imposed by the CCC in Permit 9-14-1781 to minimize impacts to terrestrial biological resources. The evaluation of marine resources would not change from that in the 1991 EIR or the 1994 EIR. The EIRs' analyses regarding potential effects from impingement, entrainment, and elevated salinity levels remain valid regardless of the Reactivation Project. Mitigation measures from the previous EIRs and additional mitigation measures related to the Reactivation Project are described in the MMRP (Attachment 7), and would reduce any potential effects. Commitments such as improved intake screening would further reduce and offset any impacts associated with impingement and entrainment. Therefore, no new or increased impacts on marine habitats will result from the Reactivation Project.

None of the proposed Reactivation Project components involve new significant impacts or a substantial increase in previously identified impacts on biological resources. Additionally, there are no substantial changes to the circumstances under which the Approved Project would be undertaken, and no new information of substantial importance regarding biological resources which was not known and could not have been known when either the 1991 EIR or the 1994 EIR were certified has since been identified. Therefore, the proposed Reactivation Project regarding biological resources does not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.4 CULTURAL RESOURCES

Summary of Analysis from the 1991 EIR: Analysis of cultural impacts and mitigation measures of the Approved Project are contained in the 1991 EIR, Section 3.10, pages 3-94 through 3-98. The 1991 EIR identified the possibility of encountering unknown buried deposits during ground-disturbing activities associated with construction of the Approved Project, and included mitigation measures that require contractor notification and avoidance procedures to avoid and minimize potential impacts. Those mitigation measures are identified as CUL-1 through CUL-4, and more fully described in the MMRP (attachment 7), and would also apply to the Reactivation Project.

Summary of Analysis from the 1994 EIR: Because no construction was proposed in converting the Approved Project from a temporary facility to permanent operational status, cultural issues were not addressed in the 1994 EIR.

Significance Criteria:

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Section 15064.5?
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?
c) Disturb any human remains, including those interred outside of formal cemeteries?
d) Directly or indirectly destroy a unique paleontological resource of site or unique geologic feature?

Analysis:

<u>Historical Resources:</u>

No historical resources have been identified within the Area of Potential Effect (APE) of the Reactivation Project. Therefore, no significant impacts to historical resources would result from implementation of the Reactivation Project.

<u>Archaeological Resources:</u>

Cultural resource studies were conducted in 2014 by Dudek (Archaeological Survey Report City Of Santa Barbara Charles Meyer Desalination Facility In Relation to the State Revolving Fund (SRF) Grant (Dudek 2014a), Attachment 3), to assess the potential for any changed circumstances that may exist relative to cultural resources within the areas proposed for the various components of the Reactivation Project. That study concluded that there was less potential for significant impacts to cultural resources than had been determined previously for the Approved Project. For example, the site had been identified previously as in the approximate

location of the 1890's Race Track and Grand Stand ("Agri-Park"), and concern was described regarding potential disturbance of remnants of this resource. Dudek's review of construction plans for improvements of the EEWWTP occurring in the mid 1970's indicated the import of fill material, causing a thickness of 5 to 8 feet of fill to be placed over almost the entire plant site. This significantly reduces the potential for any disturbance of cultural resources due to limits of project construction (i.e. minimal excavation proposed over 5 feet in depth on the EEWWTP).

The Dudek report at Attachment 3 concluded that because of the absence of recorded archaeological resources within the APE of the Reactivation Project, and substantial previous disturbances resulting from urbanization, there is no potential for prehistoric or historic archaeological resources within the APE Permanent Area of Direct Impacts (ADI). As temporary construction access and equipment storage and material laydown areas are all within existing paved areas, there is no potential for prehistoric or historic archaeological resources within the proposed Project Temporary ADI.

The report includes recommendations that are consistent with the mitigation measures included in the 1991 EIR, all of which are still applicable to the Reactivation Project and are included as measures CUL-1 through CUL-5 in the MMRP which is attached to this Addendum (Attachment 7). Those measures require that if unexpected, redeposited, buried cultural materials are encountered during construction, work should stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.

Based on the analyses conducted initially as part of the 1991 EIR, and more recently for the Reactivation Project, and with incorporation of mitigation measures CUL-1 through CUL-5, that are included in the MMRP (attachment 7), the Reactivation Project would not cause a substantial adverse change in significance of an archaeological resource, and impacts would be less than significant.

Human Remains:

Based on studies conducted for the Approved Project as well as for the Reactivation Project no human remains are known to exist within the APE. Additionally, monitoring measures included as mitigation measure CUL-7 in the MMRP (Attachment 7) require that if human remains are unearthed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resources Code Section 5097.98. Therefore, impacts would be less than significant.

Paleontological Resources and Unique Geologic Features: No unique geologic features exist within the Reactivation Project area, therefore no impacts to geologic features would result. Construction of the Reactivation Project may reveal the presence of paleontological resources during excavation work. Implementation of mitigation measure CUL-6 contained in the MMRP

(Attachment 7) would avoid any potential adverse effects to paleontological resources. Therefore, impacts on paleontological resources would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance:

The potential for significant impacts on cultural or paleontological resources within the area of potential effect of the Reactivation Project has not changed since the time of certification of the 1991 EIR. This is primarily due to the fact that the areas potentially affected by the Reactivation Project are actively disturbed and developed. Therefore, no changes in circumstances and no new information of substantial importance relative to cultural or paleontological resources have been identified.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts, because no additional undisturbed areas would be affected by the Reactivation Project. There would be no additional or increased level of impacts at any of the Approved Project facility locations. In addition, all previously identified mitigation measures from the 1991 EIR would be implemented as part of the Reactivation Project, including CUL-1 through CUL-7, which require the involvement of appropriate archaeological and paleontological monitors during construction and appropriate controls for the handling of any potential resources that may be identified during construction of the Reactivation Project.

None of the changes or additions to the Reactivation Project regarding cultural or paleontological resources involve new significant impacts or a substantial increase in previously identified impacts. Additionally, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken, and no new information of substantial importance regarding cultural or paleontological resources which was not known and could not have been known when the 1991 EIR was certified has since been identified. Therefore, the proposed Reactivation Project regarding cultural resources do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.5 GEOLOGY AND SOILS

Summary of Analysis from the 1991 EIR: Analysis of geology and soils impacts and mitigation measures of the Approved Project are contained in the 1991 EIR, Section 3.2, pages 3-1 through 3-11. The 1991 EIR states that while the Approved Project had the potential to be affected by ground shaking and other seismic hazards, this impact would be reduced to a less than significant level with implementation of the recommendations in the Soils Engineering Report prepared for the Approved Project, as well as compliance with building code requirements that would minimize potential hazards associated with ground shaking. These recommendations were included as Mitigation Measures GEO -1 through GEO-4, and are included in the MMRP which is attached to this Addendum (Attachment 7). The EIR concluded

that with adherence to these mitigation measures, impacts related to geology, soils, and seismic activity would be less than significant.

Summary of Analysis from the 1994 EIR: Analysis of geology and soils impacts and mitigation measures of the Approved Project are contained in the 1994 EIR, Section 5.1, pages 5.1-1 through 5.1-9. This section of the 1994 EIR evaluated the geologic and seismic hazards associated with the Long-Term Water Supply Program (LTWSP) and the conversion of the Desalination Facility to a permanent facility, including an analysis of hazards such as faulting, ground shaking, liquefaction and tsunamis. The various components of the LTWSP that were evaluated in the LTWSP EIR were all existing structures that had undergone geotechnical investigation and evaluation prior to construction. The Approved Project was not expected to create significant geologic impacts related to exposing people or property to geologic hazards.

Significance Criteria:

Would the project:

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?
    ii. Strong seismic ground shaking?
    iii. Seismic-related ground failure, including liquefaction?
    iv. Expansive soils?
    v. Landslides?
    vi. Sea cliff retreat?
b) 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, collapse or sea cliff failure?
c) Result in substantial soil erosion or the loss of topsoil?
d) 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?

Analysis: The Reactivation Project would result in the Desalination Facility and related infrastructure subjected to the same ground shaking and seismic hazards identified in the 1991 EIR and the 1994 EIR, and would also be subject to compliance with building code requirements to minimize hazards associated with ground shaking, including compliance with the mitigation measures identified in the 1991 EIR, which are included in the MMRP and more fully referenced below (Attachment 7 to this Addendum).

Exposure of People or Structures to Substantial Adverse Geologic Risks:

As noted above, any potential impacts would be the same as those analyzed in the 1991 EIR and the 1994 EIR, including rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, and expansive soils. The Reactivation Project is not located in an area of substantial risks associated with landslides or sea cliff retreat. Additionally, the Reactivation Project would be subject to all of the requirements outlined in the mitigation measures GEO-2 through GEO-4, which address the following issues: rupture of a known earthquake fault (GEO-3 and GEO-4), strong seismic ground shaking (GEO-3 and GEO-4), seismic-related ground failure including liquefaction(GEO-3 and GEO-4), and expansive soils (GEO-3 and GEO-4). Application of those required measures, including construction of facilities to required design standards, would minimize risk of geologic hazards to less than significant levels.

Geologic and Soil Stability:

As noted above, any potential impacts would be the same as those analyzed in the 1991 EIR and the 1994 EIR. Additionally, the Reactivation Project would be subject to all of the requirements outlined in the mitigation measures GEO-2 through GEO-4, which are more fully described in the MMRP (Attachment 7). Application of those required measures, including construction of facilities to required design standards, would minimize risk of geologic hazards to less-than-significant levels.

Soil Erosion/Loss of Topsoil:

Standard siltation control measures including control of offsite drainage and runoff are required by mitigation measure GEO-1, which is more fully described in the MMRP (Attachment 7). Application of the required measure would minimize impacts related to earthwork and soil erosion and result in impacts that are less than significant.

Use of Septic Systems:

The Reactivation Project does not involve the use of septic systems, therefore the capability of soils to support a septic system is not relevant to the Reactivation Project, and no impacts would result.

In sum, with the implementation of mitigation measures described above and included in the MMRP (Attachment 7) potential impacts of the Reactivation Project related to geology and soils would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There is no potential for significant changes in geological, seismic, soils or mineral resource conditions within the area of potential effect of the Reactivation Project since the time of certification of either the 1991 EIR or the

1994 EIR, because such resources are relatively static. Additionally no new information regarding unknown hazards, conditions or resources has become available. Therefore, no changes in circumstances and no new information of substantial importance relative to geology have been identified.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts. The evaluation of potential impacts related to geologic and soils issues contained in the 1991 EIR are applicable to the Reactivation Project. The same mitigation measures would also be applicable.

None of the changes or additions to the Approved Project regarding geology and soils involves new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information regarding geological resources which was not known and could not have been known when the EIRs were certified has since been identified. Therefore, the Reactivation Project regarding geological resources do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.6 HAZARDS AND HAZARDOUS MATERIALS

Summary of Analysis from the 1991 EIR: Analysis of hazards and hazardous materials impacts and mitigation measures of the Approved Project are contained in the 1991 EIR, Section 3.6 (Risk of Upset), pages 3-64 through 3-71. This section of the EIR addressed hazards that may be associated with the plant's hazardous material use and storage, as well as from accidents that may occur on the project site. The section describes how hazardous material transportation, use, and storage are regulated by numerous Federal, State, and local laws and regulations, and how these regulations stipulate minimum standards for design of facilities, storage requirements, spill prevention procedures, emergency response and contingency plans, risk management and employee training procedures.

The 1991 EIR states that the Approved Project would adhere to pertinent regulations including the Uniform Building Code, Article 80 of the Uniform Fire Code, and related regulations related to risk management. This section discusses potential environmental impacts generated from and accidental upset of hazardous materials during operation of the Approved Project. It concludes that while an accidental release of chemicals from the Approved Project would potentially have adverse effects, with implementation of required measures, no additional mitigation measures were recommended.

The 1991 EIR also evaluated the finished product water quality that the Approved Project would produce. It indicates that the finished water to be produced by the proposed desalination facility would meet all primary and secondary drinking water standards, testing requirements, and procedures set forth in Title 22, California Code of Regulations, Environmental Health (1989). No impacts were identified.

Summary of Analysis from the 1994 EIR: The Initial Study conducted for the 1994 EIR found that there would be no impacts related to risk of upset associated with converting the Approved Project from a temporary to a permanent facility. The topic was not carried forward for analysis in the EIR.

Significance Criteria:

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
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?
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
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?
e) For a project located within the SBCAG Airport Land Use Plan, Airport Influence Area, would the project result in a safety hazard for people residing or working in the project area?
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
g) 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?

Analysis: The Reactivation Project would replace previously removed storage chemical tanks at the pump/chemical station with new storage tanks in the same location. Chlorine would be then delivered directly to the chemical pump station by the supplier. This would remove the need to handle the chlorine a second time to deliver from WWTP to the chemical pump station facility, hence reducing the potential for accidental upset/release during transportation. As described in Section 4.2, the Reactivation Project includes changes to the use of chlorine that would further reduce the potential effects of previously determined less than significant impacts.

<u>Transport, Use and Disposal of Hazardous Materials:</u>

As discussed above, the Approved Project was required to adhere to pertinent regulations including the Uniform Building Code, Article 80 of the Uniform Fire Code, and related regulations related to risk management. Those same regulations would also be applied to, and required of the Reactivation Project as set forth in Mitigation Measure HAZ-1 contained in the MMRP (Attachment 7). This Mitigation Measure would reduce any potential impacts related to

transport, use and disposal of hazardous materials associated with the Reactivation Project to be less than significant.

Release of Hazardous Materials:

The focus of the regulations that apply to the transport, use, storage and disposal of hazardous materials noted above in Mitigation Measure HAZ-1 is prevention of release of hazardous materials into the environment, and in ways that could cause harm to people or the environment. Therefore, application of HAZ-1 would also mitigate any potential risks from release of hazardous materials to less-than-significant levels.

Risks to Schools:

There are no existing or proposed schools within one-quarter mile of the Desalination Facility, which is the component of the Reactivation Project that involves the use and storage of hazardous materials. Therefore no impacts on schools related to hazardous materials use and storage would result.

Hazardous Materials Sites:

The Desalination Facility main site is located within an industrial area that includes uses that use, store and transport hazardous materials. However, there are no known unremediated soil or groundwater contamination issues within the Reactivation Project area that would result in exposure of project occupants or construction workers to substantial risks. Therefore, impacts would be less than significant.

Risks Related to Airports:

The Reactivation Project is not located within the SBCAG Airport Land Use Plan, Airport Influence Area. Therefore, no impacts related to a safety hazard would result.

Emergency Response Plans:

Construction activities related to the Reactivation Project may require some brief temporary lane closures, and/or detours as some of the larger pieces of equipment are delivered to the Desalination Facility site. However, these conditions would be limited in duration, and would not result in road closures or substantial impairments to access from either construction or operation of the Reactivation Project, there would be no substantial physical interference with an emergency evacuation or response plan. Impacts would therefore be less than significant.

Wildland Fires:

None of the components of the Reactivation Project are located within a high fire hazard areas or beyond adequate emergency response time, with inadequate access or water pressure, nor would they otherwise create a fire hazard. Therefore, impacts would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes to the circumstances under which the Reactivation Project would be undertaken, and there is no new information of substantial importance relative to hazards or hazardous materials that has become available since the certification of the 1991 EIR.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts related to hazards or hazardous materials. Mitigation would be implemented to control any potential construction impacts as well as appropriate controls for the storage and use of on-site chemicals during operations. The Reactivation Project would not interfere with any airport operations or emergency evacuation routes. Any potential hazardous materials would be disposed of appropriately and the Reactivation Project would comply with any required best management practices.

None of the changes or additions to the Approved Project regarding hazards or hazardous materials involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information regarding hazards or hazardous material which was not known and could not have been known when the 1991 EIR was certified has since been identified. Therefore, the Reactivation Project regarding hazards or hazardous materials do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.7 NOISE

Summary of Analysis from the 1991 EIR: Analysis of noise impacts and mitigation measures of the Approved Project are contained in the 1991 EIR, Section 3.5, pages 3-47 through 3-63. The noise analysis considered both construction and operational noise impacts.

<u>Construction Noise:</u> The 1991 EIR determined that noise impacts during construction would be temporary in nature and found that the construction noise was not expected to result in significant impacts to nearby land uses. The EIR states that to further minimize temporary increases in noise near the project sites, due to construction of the project, construction activities would be scheduled in accordance with City standards which limit work hours for construction (including preparation for construction work) to Monday through Friday between the hours of 7:00 a.m. and 5:00 p.m., and Saturdays between the hours of 9:00 a.m. and 4:00 p.m., excluding holidays.

<u>Operational Noise:</u> The 1991 EIR determined that operation of the Approved Project would result in an increase to noise levels in surrounding areas. Applicable noise guidelines for the Approved Project facility sites include occupational health and safety requirements and the Noise Element of the City of Santa Barbara General Plan were applied. The noise assessment included on-site noise sampling as well as extensive noise modeling for the plant site and

onshore pump station/chemical treatment area. Measures to reduce the noise levels generated by the pumps at the Desalination Facility site were included in the facility design.

Both construction and operational noise impacts were determined to be less than significant with incorporation of mitigation measures, which are more fully described in the MMRP (Attachment 7).

Summary of Analysis from the 1994 EIR: Analysis of noise impacts and mitigation measures of the Approved Project are contained in the 1994 EIR, Section 5.6, pages 5.6-1 through 5.6-11. This section of the 1994 EIR discussed the potential noise impacts as a result of the conversion of the Approved Project from a temporary to a permanent facility. The analysis included identification, description and evaluation of the major noise sources in the vicinity of the Approved Project, and the potential noise impacts that result from operation. Impacts were found to be less than significant with the application of noise monitoring mitigation, which is more fully described in the MMRP (Attachment 7).

Significance Criteria:

Would the project result in:

a) 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?
b) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
d) For a project located within the SBCAG Airport Land Use Plan, Airport Influence Area, would the project expose people residing or working in the project area to excessive noise levels?
e) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Analysis:

<u>Construction Noise:</u> While the mitigation measures related to construction from the 1991 EIR would be applicable to the Reactivation Project most of the significant construction activities required for the Approved Project occurred at the time the plant was originally constructed in 1992. This included excavation and re-compaction of approximately 18 to 24 inches of soil for most of the component locations, trenching and placement of underground piping, construction of 40-foot deep booster pump shafts at main plant site, foundation and footing work at all sites, construction and placement of plant facilities, as well as necessary electrical work (i.e. overhead electric, transformer installation, switch box installation and related electrical connections.)

The majority of the remaining construction work required for the Reactivation Project would consist of craning for removal of existing equipment requiring repair or replacement, and then reinstallation of repaired or replacement equipment by crane as well. Some ground disturbance may be required for retrofit and/or reconfiguration of plant components, including trenching for pipe installation/replacement, and other minor site preparation such as removing/replacing pavement and foundations. Noise impacts should be less than anticipated in the 1994 EIR due to the installation of updated and more efficient equipment, such as variable frequency drive pumps.

Noise Levels in Excess of Standards:

As noted earlier, construction activities associated with the Reactivation Project would be subject to compliance with construction noise restrictions that have been put in place to avoid significant impacts. Additional construction noise mitigation from the 1991 EIR requiring noise control measures for construction equipment is also required of the Reactivation Project, and is included in the MMRP as NOI-3 (Attachment 7). Based on the construction noise controls that would be placed on the Reactivation Project, construction noise levels would not exceed established standards, and impacts would be less than significant. Operational noise control measures are also included among the mitigation measures that were established in the 1991 EIR and would be required of the Reactivation Project, as more fully described in the MMRP as mitigation measures NOI-1, NOI-2, and NOI-4. The mitigation measures include design considerations for locating noise-generating equipment away from sensitive receptors, and noise attenuation for high pressure pumps. The measures also include noise monitoring to ensure compliance with noise standards. With application of these measures, operation of the Reactivation Project would not result in noise levels in excess of established standards, and impacts are less than significant.

Substantial Permanent or Temporary/Periodic Increase in Noise Levels:

In addition to compliance with noise standards, the noise control mitigation measures discussed above would also avoid any substantial permanent or temporary/periodic increase in noise levels resulting from construction and operation of the Reactivation Project. Impacts would therefore be less than significant.

Noise Impacts from Aircraft:

None of the components of the Reactivation Project are located within the SBCAG Airport Land Use Plan, Airport Influence Area; therefore, people working in the Reactivation Project area would not be exposed to excessive aircraft noise. Impacts would therefore be less than significant.

Groundborne Vibration:

Sound control measures NOI-1, NOI-2, and NOI-4, that would be required to reduce noise levels related to construction and operation of the Reactivation Project would also be effective in

attenuating any vibration resulting from construction work, or equipment involved in operation of the Reactivation Project. Impacts would therefore be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes under which the Reactivation Project would be undertaken, because there are no substantial new sensitive receptors or substantial changes in noise policies or requirements that would affect the Reactivation Project. No new or additional substantial sources of noise have been introduced within the area potentially affected by the Reactivation Project, and no new information of substantial importance relative to noise has become available since the certification of either the 1991 EIR or the 1994 EIR.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts. The Reactivation Project would result in similar operational characteristics as evaluated previously and would not increase the level of potential operational noise impacts. In fact, noise impacts have the potential to be reduced due to the installation of updated and more efficient equipment, such as variable frequency drive pumps. Furthermore, the type and intensity of construction related to the Reactivation Project would be reduced from what was evaluated within the 1991 EIR and the Reactivation Project would continue to adhere to any and all applicable noise regulations and to operate during appropriate hours of construction. No significant vibration impacts are anticipated and given the operational nature of the underground pipelines and the construction process, no noise significant impacts are anticipated.

None of the changes or additions to the Approved Project regarding noise impacts involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to noise which was not known and could not have been known when either the 1991 EIR or the 1994 EIR were certified has since been identified. Therefore, the Reactivation Project regarding noise impacts do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.8 POPULATION AND HOUSING (GROWTH)

Summary of Analysis from the 1991 EIR: Analysis of population and housing (including growth-inducing impacts) of the Approved Project are contained in the 1991 EIR, Section 4.3.11, page 4-6. This section of the 1991 EIR stated the project's purpose was to "supply water only to replace water lost to the drought". The document discussed the General Plan and City Ordinances in place at that time to limit both residential and nonresidential growth, regardless of availability of water supplies. The EIR, in summary, determined the project would not create an additional new water supply that could allow for and/or induce growth since it would only replace on a temporary emergency basis a portion of normal supplies which were not now available due

to the drought. Minor increases in demand for City services were expected to occur temporarily during the construction phase associated with the construction workforce, but these impacts would cease once construction was complete Therefore, the 1991 EIR analysis determined the Approved Project would not result in growth inducing effects.

Summary of Analysis from the 1994 EIR: Analysis of population and housing (including growth-inducing impacts) of the Approved Project are contained in the 1994 EIR, Section 7.0, pages 7-1 through 7-3**.** The discussion of growth-inducing effects in the 1994 EIR included broad considerations of the LTWSP in general, and not specifically the effects of the Approved Project. However, water produced from the Approved Project was part of the overall portfolio of water sources analyzed. The 1994 EIR concluded that no previously unanticipated impacts of growth would be associated with implementation of the LTWSP, because the primary goal of the LTWSP is to develop the ability to accommodate projected water demands represented by growth that is outlined in the City's Charter and General Plan.

Significance Criteria:

Would the project:

a) Exposure of persons to or Induce substantial population growth in an area, either directly or indirectly (e.g. through extension of roads or other infrastructure)?
b) Displace substantial numbers of existing housing, especially affordable housing, or people necessitating the construction of replacement housing elsewhere?

Analysis: The operation of the Reactivation Project, including production capacity would not change from what was evaluated in either the 1991 EIR or the 1994 EIR for the Approved Project. Specifically, the Reactivation Project, similar to the Approved Project, is intended to provide a component of the City's water supply portfolio that would accommodate water demands that are based on identified water needs, as identified in the City's General Plan. No previously unanticipated impacts associated with growth would result from implementation of the Reactivation Project. Therefore, the Reactivation Project would not expose people to or induce substantial population growth, either directly or indirectly. Additionally, the Reactivation Project would not displace or create a demand for housing that would have the potential to displace a substantial number of housing units or result in the need for any replacement housing. Impacts would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance:

There are no substantial changes under which the Reactivation Project would be undertaken, because there are no substantial changes in water supply planning relative to desalination has occurred since the 1994 EIR was prepared. Specifically, the 1994 EIR addressed the Approved Project in the context of the City's LTWSP. The most recent update to the LTWSP in 2011

included the same assumptions for a desalination supply component, which the Reactivation Project would implement. No new information of substantial importance relative to growth inducement has become available since the certification of either of the EIRs.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts regarding growth inducement. The Reactivation Project would have the same production capacity as the Approved Project as it was evaluated under the previous EIRs and none of the changes or additions with the Reactivation Project regarding impacts on growth involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to growth which was not known and could not have been known when the previous EIRs were certified that has since been identified. Therefore, the Reactivation Project relative to growth inducement does not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.9 PUBLIC SERVICES AND UTILITIES

Summary of Analysis from the 1991 EIR: Public Services and Utilities were considered in the Initial Study for the 1991 EIR and impacts were determined to be not significant, and therefore, the topic was not carried forward for analysis in the EIR.

Summary of Analysis from the 1994 EIR: Public Services and Utilities were considered in the Initial Study for the 1994 EIR and impacts were determined to be not significant, and therefore, the topic was not carried forward for analysis in the EIR.

Significance Criteria:

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
b) 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?
c) Require or result in the construction of new or expanded wastewater treatment or collection facilities, the construction of which could cause significant environmental effects?
d) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
e) Require or result in the construction of new or expanded water treatment or distribution facilities, the construction of which could cause significant environmental effects?

f) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
g) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
h) Comply with federal, state, and local statutes and regulations related to solid waste?
i) 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:
    i. Fire Protection?
    ii. Police Protection?
    iii. Schools?
    iv. Other Public Facilities?

Analysis:

Wastewater Treatment Requirements:

The Reactivation Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, because the Reactivation Project would not generate substantial amounts of municipal wastewater, and because the brine discharge from the facility is currently permitted, and would comply with existing regulatory standards. Therefore, no impacts would result.

Construction of New/Expanded Storm Water Drainage Facilities:

As described in Section 4.2, the Reactivation Project includes upgrades to existing storm drain capture facilities to meet current water quality standards. However, no changes in storm water runoff flows or quantities would result from the Reactivation Project from those analyzed in the 1991 EIR and the 1994 EIR and no new or expanded drainage facilities would be required. Therefore, no impacts would result.

Construction of New or Expanded Wastewater Treatment or Collection Facilities:

No new or expanded wastewater treatment or collection facilities are included as components of the Reactivation Project. Operation of the Reactivation Project would involve 8 new employees, which would not generate substantial amounts of municipal wastewater requiring new or expanded facilities. Therefore, no impacts would result.

Inadequate Wastewater System Capacity:

As discussed above, the Reactivation Project would not generate substantial amounts of municipal wastewater, and would not exceed the existing wastewater system capacity. Therefore, no impacts would result.

Requirements for New or Expanded Water Treatment or Distribution Facilities:

The Reactivation Project is a water treatment facility that includes facilities to connect into the City's water distribution system. However, all aspect of facility needs and construction are included as a part of the Reactivation Project, and no new or expanded facilities beyond those analyzed for the Reactivation Project would be needed. Therefore, no impacts would result.

Sufficient Water Supplies Available to Serve the Project:

The Reactivation Project would produce a component of the City's water supply, and would not result in substantial consumption of water. Therefore, no additional water supplies are needed to support the Reactivation Project and no impacts would result.

Landfill Capacity and Regulations Related to Solid Waste:

The Reactivation Project would not generate substantial amounts of solid waste that would be disposed of in a landfill. Demolition by-products would consist primarily of materials that would be repurposed, sold as scrap, or recycled, and therefore would not generate substantial materials that would require landfill disposal. Therefore, the Reactivation Project would not result in any issues related to landfill capacity or regulations that relate to solid waste. Therefore, no impacts would result.

New Facilities for Fire Protection, Police Protection, Schools, or Other Public Facilities:

The Reactivation Project would not result in any significant impacts on public services resulting in the need for additional facilities related to those services, because it would not generate substantial new employment or housing that would create additional demand for services. Police and Fire protection are currently provided for the adjacent EEWWTP, and provision of minor additional service that may be associated with the Reactivation Project would not result in the need for additional facilities.

The Reactivation Project would involve similar construction and operational characteristics as those considered in the previous EIRs, and would have similar effects related to public services and utilities. The Reactivation Project involves construction of public facilities, including water treatment and conveyance facilities, and upgrades to other facilities, such as storm water quality features. However, no new facilities would be needed that are not already part of, and included in the analysis of the Reactivation Project, and therefore, there is no potential for environmental effects from such facilities. Impacts are therefore less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes under which the Reactivation Project would be undertaken, because there are no substantial changes in public utilities or services, or to the requirements of agencies that provide such services, from what was in place at the time that the previous EIRs were certified. No new information of substantial importance relative to public utilities or services has become available since the certification of the EIRs.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts regarding public utilities or services. The Reactivation Project would operate in a similar manner to that evaluated under the previous EIRs. None of the changes or additions related to the Reactivation Project regarding impacts to public utilities or services involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to public utilities or services which was not known and could not have been known when the previous EIRs were certified that has since been identified. Therefore, the proposed Reactivation Project relative to public utilities or services do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.10 RECREATION

Summary of Analysis from the 1991 EIR: Analysis of recreation impacts and mitigation measures of the approved Project are contained in the FEIR, Section 3.9, pages 3-90 through 3-93. The assessment of potential impacts on recreation resources was focused on construction activities on the beach and offshore since these were the only aspects of the Approved Project which were considered to have the potential to adversely affect recreation.

The onshore effects were determined to have a short term minor impact on the quality and quantity of recreational opportunities resulting from the pipeline-sleeving construction activities conducted on the beach at Chase Palm Park. Although no significant adverse effects were predicted, the 1991 EIR included mitigation measures to further avoid recreation conflicts, such as construction at the beach weir box during the off season access control measures which are described more fully in the MMRP as measures REC-1 through REC-4 (Attachment 7).

Summary of Analysis from the 1994 EIR: Recreation was considered in the Initial Study for the 1994 EIR and impacts were determined to be not significant, and therefore, the topic was not carried forward for analysis in the EIR.

Significance Criteria:

Would the project:

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?
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?
c) Would the project result in substantial loss or interference with existing park space or other public recreational facilities (such as hiking, cycling or horse trails)?

Analysis:

Increase in Park/Other Recreational Facility Use:

The Reactivation Project would not result in increases in park or recreational facility usage, because it would not generate substantial new employment or housing that would create additional demand for park or other recreational facilities. Therefore, no physical deterioration of recreational facilities would result, and no impacts would result.

New or Expanded Recreational Facilities:

The Reactivation Project does not include recreational facilities, or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. The Reactivation Project would not result in the need for the construction or expansion of recreational facilities which might have an adverse physical effect on the environment, because it would not generate substantial new employment or housing that would create additional demand for recreational facilities. Therefore, no new construction of recreational facilities would be needed, and no impacts associated with such construction would result.

Loss or Interference with Existing Park Space or Recreational Facilities:

The Reactivation Project would involve repair and maintenance activities at the existing weir box on East Beach. Impacts would occur over a three-week period, and be subject to the same construction limitations that were outlined in the 1991 EIR for construction in the vicinity of the weir box. Moreover, Mitigation Measures REC-1 through REC-4 are also requirements of the Reactivation Project and would be incorporated into the work conducted at the weir box to minimize the effects of these activities on public access and recreation. For instance, staging activities will be conducted away from the beach at the inland location of the Desalination Facility, and repair and maintenance activities will be conducted for no more than ten hours per day on weekdays only, which will minimize interference with heavier use of the beach by the public on weekends. Temporary fencing will be installed to demarcate the area needed for project activities and to provide for public safety. Further, Special Condition 9 of Permit 9-14-

1781 requires that information required for a *Notice to Mariners* be submitted to the U.S. Coast Guard in advance of any offshore Reactivation Actions.

Given the limited duration of construction activities, and the required Mitigation Measures and conditions to avoid and minimize recreation conflicts, impacts would be less than significant.

The Reactivation Project would not involve uses that would generate a substantial increase in population, and therefore would not generate demand for recreational facilities. Therefore, no new construction of recreational facilities would be needed, and no impacts associated with such construction would result.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes under which the Reactivation Project would be undertaken, because there are no substantial changes in recreation conditions from what was in place at the time that the 1991 EIR was certified. No new information of substantial importance relative to public utilities or services has become available since the certification of the 1991 EIR.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts regarding recreation. The Reactivation Project would result in similar operations to that evaluated under both the 1991 EIR and the 1994 EIR.

None of the changes or additions related to the Reactivation Project regarding impacts to recreation involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to recreation which was not known and could not have been known when the previous EIRs were certified that has since been identified. Therefore, the Reactivation Project relative to recreation does not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.11 TRANSPORTATION AND CIRCULATION

Summary of Analysis from the 1991 EIR: Transportation and Circulation issues were considered in the Initial Study for the 1991 EIR and no impacts were identified, and therefore, the topic was not carried forward for analysis in the EIR.

Summary of Analysis from the 1994 EIR: Transportation and Circulation issues were considered in the Initial Study for the 1994 EIR and no impacts were identified, and therefore, the topic was not carried forward for analysis in the EIR.

Significance Criteria:

Would the project:

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?
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?
c) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?
e) Result in inadequate emergency access?
f) 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?

Analysis: The Reactivation Project would have less potential for construction-related traffic impacts than when the plant was initially constructed. This is due to several factors, including the following:

- A significant amount of required construction has already been completed on-site.
- Modular design allows for partial construction off-site (factory location).

Operation of the Reactivation Project would also involve similar staffing levels as the Approved Project. Impacts from the Reactivation Project would not be significant, and therefore the conclusions reached in the Initial Studies for the 1991 and 1994 EIRs would not change for the Reactivation Project.

<u>Conflict with Applicable Circulation Performance Standards:</u>

Traffic associated with construction of the Reactivation Project is estimated to involve approximately 74 daily round trips, including 26 construction worker round trips, and 48 material hauling and delivery round trips. The 1991 EIR estimated construction traffic as part of the Initial Study performed for the Approved Project, which indicated that construction would generate up to 74 daily trips, which is comparable to what is estimated for the Reactivation Project. The majority of these trips would be during off-peak hours, based on the fact that delivery and hauling would occur throughout the workday, and construction worker shifts tends to start and end earlier than typical work schedules that influence peak hour volumes. The City of Santa Barbara's General Plan EIR (Certified Final Program Environmental Impact Report for the Plan

Santa Barbara General Plan Update, SCH# 2009011031, AMEC, September 2010 – hereinafter referred to as the "GP EIR") addressed traffic impacts that would result from implementation of the proposed land uses outlined in the General Plan. The GP EIR found that traffic generated by land uses within the City's central business district and surrounding areas, including the area in the vicinity of the Reactivation Project components, largely reflect an idealized urban development pattern that minimizes traffic generation because they have relatively high density, mix of commercial, residential and employment uses, a closely spaced grid system of streets with a complete sidewalk system. Therefore, the GP EIR concluded that while there are not significant physical changes proposed to the built environment (e.g. new streets, more complete sidewalks, increased diversity of uses) that would further reduce trip generation within this area, new development as planned for in the General Plan would inherently generate less new traffic than if located in outlying areas. Based on the relatively low number of trips, and the off-peak characteristics of construction-related trips, the Reactivation Project construction traffic would not cause an increase in traffic that is substantial in relation to the existing traffic load and street system capacity in the vicinity of the Reactivation Project components, and therefore would not conflict with measures of effectiveness for the performance of the circulation system. Additionally, operation of the Reactivation Project would require eight (8) personnel, which would generate an equivalent number of round trip commuter trips, in addition to periodic trips related to maintenance, inspection, repairs, or similar activities. These trips would also not conflict with measures of effectiveness for the performance of the circulation system. Impacts would therefore be less than significant.

Conflict with an Applicable Congestion Management Plan:

The Reactivation Project would also comply with the Santa Barbara County Association of Government's Congestion Management Program for the region. The Reactivation Project construction would occur in an area with a compatible land use designation, and would therefore not conflict with the land uses and associated trip generation assumed in the CMP.. The project site would have direct access from a public street and would not result in the need for modification of transportation systems, including those associated with transit, bicycle or pedestrian modes of transportation. No changes to sidewalks, bike lanes, or transit routes are proposed, nor would they be required as a result of implementation of the Reactivation Project. Therefore the Reactivation Project would not conflict with or impede implementation of any policies, plans, programs, or ordinances regarding congestion management and the circulation system, taking into account all modes of transportation. Therefore, there would be a less than significant impact to congestion management or the circulation system.

Conflict with Policies Related to Transit or Alternative Transportation:

The Reactivation Project would not generate substantial amounts of traffic that could result in conflicts with policies, plans or programs related to transit or other alternative transportation modes. The Reactivation Project would not result in the need for modification of transportation systems, including those associated with transit, bicycle or pedestrian modes of transportation.

No changes to sidewalks, bike lanes, or transit routes are proposed, nor would they be required as a result of implementation of the Reactivation Project. Moreover no changes in physical circulation system configuration, or impedance to access would result from construction or operation of the Reactivation Project that could affect any such plans, policies or programs. Therefore, impacts would be less than significant.

Increase Hazards:

No changes in physical circulation system configuration, or impedance to access would result from construction or operation of the Reactivation Project, and therefore no hazards resulting from design or incompatible uses would result. Therefore, Impacts would be less than significant.

Impede Emergency Access:

Construction activities related to the Reactivation Project may require some brief temporary lane closures, and/or detours as some of the larger pieces of equipment are delivered to the Desalination Facility site. However, these conditions would be limited in duration, and would not result in road closures or substantial impairments to access from either construction or operation of the Reactivation Project. Neither construction nor operation of the Reactivation Project would result in blockage or substantial diversion of traffic that could result in inadequate emergency access, and therefore impacts would be less than significant.

Changes in Air Traffic Patterns:

The Reactivation Project does not propose structures of substantial height that would change air traffic patterns or result in substantial safety risks, nor are any of the components of the Reactivation Project located in proximity to an airport or air field that could result in substantial safety risks. Impacts would therefore be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes under which the Reactivation Project would be undertaken, because there are no substantial changes in traffic characteristics or requirements from what was in place at the time that the previous EIRs were certified. As noted in the GP EIR, traffic generated by land uses in the vicinity of the Reactivation Project components, largely reflect an idealized urban development pattern that minimizes traffic generation because they have relatively high density, mix of commercial, residential and employment uses, a closely spaced grid system of streets with a complete sidewalk system. Therefore, the GP EIR concluded that while there are not significant physical changes proposed to the built environment (e.g. new streets, more complete sidewalks, increased diversity of uses) that would further reduce trip generation within this area, new development as planned for in the General Plan would inherently generate less new traffic than if located in outlying areas. No new information of substantial importance relative to traffic has become available since the certification of the previous EIRs.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts related to traffic and transportation during either construction or operation of the Reactivation Project.

None of the changes or additions related to the Reactivation Project regarding traffic impacts involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to traffic impacts which was not known and could not have been known when the previous EIRs were certified has since been identified. Therefore, the proposed Reactivation Project regarding traffic impacts do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.12 WATER QUALITY AND HYDROLOGY

Summary of Analysis from the 1991 EIR: Analysis of hydrology/water quality impacts and mitigation measures of the Approved Project are contained in the 1991 EIR, Section 3.3, pages 3-12 through 3-36. The 1991 EIR analyzed Onshore Hydrology and Water Quality as well as Oceanography and Marine Water Quality. The Onshore Hydrology and Water Quality discussion included analysis of potential impacts from construction, erosion and sedimentation, accidental rupture of pipelines, and accidental leakage from storage tanks. The EIR concluded that with implementation of mitigation measures that are described in the MMRP (Attachment 7), as well as standard BMPs, and adherence to procedures outlined by regulations, including the Uniform Building Code and the Uniform Fire Code, the project would have a less than significant impact on Onshore Hydrology and Water Quality.

The Oceanography and Marine Water Quality analysis includes discussion of physical oceanography (background on ocean currents, offshore circulation patterns, currents in vicinity of outfall structure, tides, and seawater density) and chemical oceanography (salinity, temperature, dissolved oxygen and biochemical oxygen demand, and pH Level), and potential impacts of waste water discharge. The EIR concluded that with implementation of mitigation measures, as well as standard BMPs, and adherence to procedures outlined by regulations, including the Regional Water Quality Control Board, the project would have no unavoidable significant effects to Oceanography and Marine Water Quality.

The 1991 EIR prepared for temporary operation of the Approved Project analyzed the marine water quality impacts associated with the operation of the facility. The 1991 EIR concluded that the reject brine produced at the desalination plan, mixed with effluent from EEWWTP discharged through the existing outfall, would not create any significant impacts on marine water quality.

Summary of Analysis from the 1994 EIR: Analysis of hydrology/water quality impacts and mitigation measures of the Approved Project are contained in the 1994 EIR, Section 5.5 (water quality), pages 5.5-1 through 5.5-14, as well as Section 5.2 (Groundwater Resources), Pages

5.2-1 through 5.2-12. The 1994 EIR indicated that the LTWSP as a whole results in increased water supplies available to the City through the addition of State Water and desalination, and a corresponding reduction in the need to pump groundwater. The 1994 EIR concluded that the general reduction in pumping levels combined with specific strategies associated with controlling seawater intrusion meant that the desalination project would have beneficial impacts on groundwater resources.

The 1994 EIR project description includes measures that have been incorporated into the LTWSP for the purpose of avoiding adverse impacts associated with groundwater pumping. These measures include implementation of the four USGS recommendations discussed above and incorporation of pumping limitations based on the estimated perennial yield and recharge capability of the groundwater basins. Based on these measures and on the anticipated beneficial impacts from the project, no mitigation measures were required with regard to the groundwater element of the LTWSP.

Several studies provided the basis for the discussion of impacts on marine resources in the 1994 EIR. These included the 1991 EIR for the temporary operation of the Approved Project and a subsequent marine water quality and marine biota monitoring plan prepared by Woodward-Clyde Consultants (1991); NPDES marine monitoring studies performed during temporary operation of the desalination facility in between April and June 1992 (sediment quality, diver-video surveys and benthic infaunal sampling) conducted by ECOMAR (1992), NPDES monitoring, desalination discharge effluent monitoring analyses prepared by Coast to Coast Laboratories in March and April, 1992, and more studies conducted specifically during the preparation of the 1994 EIR that included a discharge plume modeling study (WEM 1993), and Desalination Facility toxicity bioassays (Southern California Coastal Water Research Project [SCCWRP]).

The 1994 EIR Marine Water Quality chapter pertained only to the desalination component of the City's LTWSP, because that is the only component that would affect marine water quality. The chapter evaluated the effects on marine water quality that would result from combining various discharge rates of reject brine from the desalination process with treated effluent from EEWWTP.

The 1994 EIR did not identify any significant environmental effects that could not be mitigated related to water quality, including ocean water quality, or groundwater.

Significance Criteria:

Would the project:

a) Impact groundwater by:
    i. Substantially depleting groundwater supplies or interfering 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 well would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

ii. Violating any groundwater quality standards/ requirements or otherwise substantially degrading groundwater quality?

b) 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?

c) Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on- or off-site?

d) Violate any surface water quality standards/requirements or otherwise substantially degrade surface water quality?

e) Substantially alter a stream or river (either directly or indirectly through encroachment into buffer areas) in a manner which would result in substantial on- or off-site erosion, siltation, flooding, water quality degradation, or impacts to sensitive biological resources?

f) 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), wave action, or surface water erosion?

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?

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

i) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

Analysis: Implementation of the Reactivation Project would not substantially change the amount of impervious surfaces at any of the facility sites and as described in Section 4.2 of this Addendum, would not result in a substantial change in runoff from the sites compared to what was evaluated in the previous EIRs. In addition, mitigation identified in the previous EIRs, and more fully described in the MMRP as WQ-1 through WQ-6 (Attachment 7) would still be required of the Reactivation Project, and would reduce pollutant contact with storm runoff, and to control, filter, and treat runoff from the roof, parking and other impervious areas related to the Reactivation Project, in accordance with federal, state and local regulations and standards.

Regarding effects on ocean water quality, as discussed previously, the operation of the Reactivation Project would not be modified from what was previously analyzed for the Approved Project with respect to water quality. . Therefore, the same flow rates and quantities analyzed in the previous EIRs would apply with implementation of the Reactivation Project, and the same analysis and conclusions regarding ocean water quality would be applicable.

Groundwater Impacts:

The Reactivation Project does not involve extraction of, or injection into, groundwater, and would not substantially alter the patterns, quantity or quality of runoff that would enter groundwater basins. Therefore, impacts would be less than significant.

Stormwater Drainage Capacity:

The Reactivation Project would require minor grading to address flood elevations, including movement and recompaction of between 200-300 cubic yards of material. However, the grading would not substantially change the direction of flow of stormwater. In addition, paving would be replaced in the graded areas, and there would be no net change in the area of paved surfaces, and therefore, runoff quantities would not be substantially changes. Therefore, the Reactivation Project would not 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. Impacts would be less than significant.

Drainage Pattern:

The Reactivation Project would require minor grading to address flood elevations, including movement and recompaction of between 200-300 cubic yards of material. However, the grading would not substantially change the direction of flow of stormwater. Therefore, the Reactivation Project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on- or off-site. Impacts would be less than significant.

Surface Water Quality:

As discussed above, mitigation measures WQ-1 through WQ-6 would be implemented for the Reactivation Project both during construction and operation, and are more fully described in the MMRP included as Attachment 7 to this Addendum. In addition, as described in Section 4.2, the Reactivation Project includes updates to the stormwater capture/treatment system to meet current water quality standards. The Reactivation Project would comply with surface water quality standards and requirements, and would not otherwise substantially degrade surface water quality.. Therefore, impacts would be less than significant.

Stream Alteration:

The Reactivation Project does not involve construction within a stream or river, nor any encroachment in a buffer area to such resources. In addition, mitigation measures are required to avoid and minimize indirect impacts, such as erosion, siltation, flooding, water quality degradation, or impacts to sensitive biological resources (see BIO-14 and BIO-15 in the MMRP, Attachment 7). Therefore impacts would be less than significant.

Flood Risks Including 100-Year Flood Hazards:

The Reactivation Project components are not located within a 100-year flood zone, although a portion of the Pump Station and Chemical Storage facility are on the margin of the 100-year flood plain. The Reactivation Project would not substantially change the ground elevation, or result in placement of structures that would have a substantial effect on displacement of any flood water flows. Additionally, pursuant to the mitigation measures imposed on the Approved Project, which would also be required of the Reactivation Project, structures are and would be built to withstand reasonable flood flows in accordance with City criteria (see WQ-1, MMRP, Attachment 7). The Reactivation Project components are not subject to risks of failure from a levee or dam, and aside from the weir box, would not be subject to wave action or surface water erosion. The weir box can be operated and maintained if it is periodically submerged, and therefore, wave action resulting in inundation would not substantially affect the operation of the weir box. Moreover, the portion of beach where the weir box is located is in an area of sand accretion, rather than erosion. Since the weir box was constructed in 1927, there have been no reported erosion issues at the site, and therefore erosion does not pose a substantial risk to the facility. In conclusion, construction and operation of the Reactivation Project would not result in substantial flooding risks, and impacts would be less than significant.

Seiche, Tsunami, Mudflow Risks:

None of the components of the Reactivation Project are within areas that are subject to seiche or mudflow risks. The weir box lies within the tsunami runup area, as shown in the City's Master Environmental Assessment (MEA) map. Nevertheless, the weir box can be operated and maintained if it is periodically inundated. The weir box could sustain deflection from the settlement that may occur after a tsunami, and the box is fully enclosed and the HDPE pipe within the weir box is flexible and can withstand some deflection. In addition, the facility is not considered critical infrastructure and could tolerate periodic shutdown for repair if needed. Therefore, impacts related to seiche, tsunami and mudflow risks would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes to the circumstances under which the Reactivation Project would be undertaken, and there is no new information of substantial importance relative to hydrology or water quality that has become available since the certification of the previous EIRs.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts related to hydrology or water quality. Required best management practices would ensure appropriate runoff controls. Overall operations of the facility, including intake and discharge rates and quantities, would not change and therefore would not increase the potential impacts on ocean water quality as evaluated in the previous EIRs.

None of the changes or additions related to the Reactivation Project regarding impacts to hydrology or water quality involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to hydrology or water quality has been identified which was not known and could not have been known when the previous EIRs were certified. Therefore, the Reactivation Project regarding hazards or hazardous materials do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.13 LAND USE AND PLANNING

Summary of Analysis from the 1991 EIR: Analysis of land use consistency of the Approved Project are contained in the 1991 EIR, Section 3.12, pages 3-102 through 3-109. The analysis includes a discussion of relevant plans and policies, and assesses the Approved Project's consistency. The analysis does not specifically determine the level of significance of environmental impacts. However, the policies that relate to environmental issues are covered in other sections of the EIR previously addressed in this Addendum.

Summary of Analysis from the 1994 EIR: Analysis of land use policy considerations of the Approved Project are contained in the 1994 EIR, Section 4.0, pages 4-1 through 4-26. The analysis is constructed in the same manner as the 1991 EIR, and also addresses environmental topics that are analyzed in other portions of the EIR, addressed in this Addendum.

Significance Criteria:

Would the project:

a) Physically divide an established community?
b) Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Analysis:

<u>Physically Divide an Established Community:</u>

The Reactivation Project improvements are all located on lands that are currently developed with uses associated with the Approved Project, and would not result in any new development that would result in division of an established community. Therefore, no impacts would result.

<u>Conflicts with Applicable Land Use Plans/Policies:</u>

The Reactivation Project involves repair and maintenance to the Approved Project, which would result in operational conditions that would not deviate from what was previously analyzed in the 1991 EIR and the 1994 EIR. Construction activities associated with the Reactivation Project

would be less intensive than those analyzed for construction of the Approved Project, because the most of the construction has already occurred and the Reactivation Project generally involves just repair and maintenance of existing facilities that have been permitted and otherwise allowed as legal uses within the City of Santa Barbara. Moreover, the Reactivation Project would update, upgrade and improve facilities to conform to current standards, and resulting in reduced effects related to resources such as biology and energy. Therefore, no issues related to land use or policy consistency would result from implementation of the Reactivation Project. Impacts would be less than significant.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: There are no substantial changes to the circumstances under which the Reactivation Project would be undertaken, because there are no new land uses or substantial changes in land use policies or requirements that would affect the repair and maintenance activities. No new information of substantial importance relative to land use has become available since the certification of the previous EIRs.

Conclusion: The proposed Reactivation Project would not increase the level of any previously identified impacts and would not create any new potential impacts regarding potential land use conflicts. The previous EIRs did not identify any conflicts that would preclude construction of the Approved Project and the proposed Reactivation Project are not anticipated to result in any changes in the analysis or conclusions of the land use discussion of the previous EIRs.

None of the changes or additions related to the Reactivation Project regarding impacts to land use involve new significant impacts or a substantial increase in previously identified impacts. In addition, there are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to land use has been identified which was not known and could not have been known when the previous EIRs were certified. Therefore, the proposed Reactivation Project regarding impacts to land use do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

5.14 CUMULATIVE IMPACTS

Summary of Analysis from the 1991 EIR: The 1991 EIR included an assessment of potential cumulative effects which could result if the proposed desalination project was constructed in Section 4.0, pages 4-1 through 4-6. Potential project impacts from possible plant operation beyond the proposed project's 5-year lifespan were also considered. The conclusion of the assessment was that cumulative impacts would not be significant for either the proposed 5-year lifespan scenario or for an extended period of operation. The primary rationale for the conclusion of no significant impacts was that construction activities would be limited in scope, intensity and duration, in consideration of other projects being developed at that time.

Summary of Analysis from the 1994 EIR: Cumulative impacts were addressed in the 1994 EIR in Section 6.4, on pages 6-2 and 6-4. The cumulative effects discussion focused on the operational aspects of the Approved Project, and examined the operation in light of existing seawater desalination plants in operation at that time in California, which included the following:

1. Chevron Oil Refinery – 0.45 MGD
2. Santa Catalina Island – 0.13 MGD
3. San Simeon/Hearst Castle – 0.03 MGD
4. Diablo Canyon Power Plant – 0.58 MGD
5. San Nicolas Island – U.S. Navy – 0.03 MGD
6. City of Morro Bay – 0.6 MGD

It also noted other plants that were being considered at the time, including plants in Pacifica, Lompoc, and Ventura. Other large-scale plants under consideration at the time were identified, including plants proposed by the San Diego County Water Authority and Metropolitan Water District of Southern California along with other jurisdictions that were beginning to explore the feasibility of desalination along the California Coast. The discussion noted that the cumulative effects of these plants, along with the Approved Project would contribute to potential adverse effects related to energy use and marine life, but concluded that assessing the proliferation of desalination plants was beyond the scope of the analysis and too speculative to analyze further.

Significance Criteria:

The State CEQA Guidelines section 15130 provides guidance on how cumulative impacts should be analyzed, and when such impacts would represent a cumulatively considerable contribution to a significant cumulative effect.

Analysis:

To evaluate the cumulative effects of a project, State CEQA Guidelines section 15130 (b) generally sets forth two potential elements that should be considered for an adequate discussion of cumulative impacts 1.) a list of past, present, and probable future projects producing related or cumulative impacts, or 2.) a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. In this instance, the City has elected to apply the “summary of projections” approach, using the City’s General Plan as the appropriate adopted local plan, because the General Plan specifically acknowledges the Approved Project as a component of the City’s water supply portfolio, and also discusses reactivation of the Approved Project in accordance with the LTWSP. Additionally, the GP EIR

provides a regional perspective of cumulative impacts that evaluates conditions contributing to the cumulative effect of the Reactivation Project. The General Plan and accompanying EIR are available for review at the City's Planning Counter, located at 630 Garden Street Santa Barbara, CA, and available on-line at the City's website.

Cumulative Impacts to Air Quality:

The GP EIR concluded that additional air emissions produced by future development in the City would contribute to cumulative air quality impacts to the air basin from development throughout the South Coast region. Approximately 400 new housing units and 178,000 square feet of non-residential structures are projected to develop within the City sphere of influence to the year 2030; and the estimated population growth within the sphere would be 967 people.

Increased emissions from potential future growth in the City under the General Plan would combine with increased regional emissions from growth within the City's sphere, the cities of Goleta and Carpinteria, County unincorporated areas, UCSB, as well as that in the North County and San Luis Obispo and Ventura Counties to substantially increase overall emissions within the South Central Coast Air Basin.

Existing and proposed State, regional, and City regulations, policies, and programs that regulate air emissions, encourage energy conservation, and support alternative transportation would reduce the General Plan's contribution to regional cumulative impacts to air quality. These measures include the California Air Resources Board phased regulations for diesel emissions, the Transportation Solutions Program and regional bus services coordinated by SBCAG (e.g., Coastal Express), Clean Air Plan Transportation Control Measures implemented by local jurisdictions, and energy efficiency standards for new development. In addition, technological improvements such as more hybrid and electric cars, and development of cleaner alternative fuels may influence future mobile emission levels. These measures would reduce but not halt projected increases in regional air pollution. However, the emissions from the General Plan would be consistent with those analyzed in the adopted Clean Air Plan as not significant, and considered a less than considerable contribution to regional air quality impacts.

Construction and operation of the Reactivation Project would generate emissions of ROC and NOx (O_3 precursors) and PM10 emissions; however, the Reactivation Project would not exceed SBCAPCD guidance for annual construction emissions or SBCAPCD thresholds for daily operational emissions. Since implementation of the Reactivation Project would result in less-than-significant short-term impacts to air quality associated with construction and less-than-significant long-term impacts associated with operation, its contribution to the County's nonattainment status for state 8-hour O_3 and PM_{10} standards would not be cumulatively considerable.

Cumulative Impacts to Biological Resources:

The GP EIR determined that future development in the City to 2030 could contribute to a gradual, cumulative loss of habitat and corridor connections, and impacts to wildlife across the South Coast. Habitat and species disturbance could also occur during ongoing occupation of future development due to human activities such as vehicle use, noise, lighting, pets, use of invasive plant species for landscaping, and periodic vegetation clearing for fire management.

Future development could affect water quality in urban creeks such as Mission Creek. Upland Habitats and Species: Coastal sage scrub, grasslands, and oak woodlands are a declining natural community throughout the South Coast and in southern California. Cumulative impacts could include continued fragmentation and loss of oak woodland, chaparral, coastal sage scrub, and grassland habitats associated with urban, rural, and agricultural development in the foothills of the Santa Ynez Mountains and urban areas of South Coast cities and the County from Carpinteria to Gaviota. However, the GP EIR concluded that potential impacts within the City would be reduced to less than significant by existing policies, including General Plan policies and impact avoidance measures contained in the GP EIR, and impacts would constitute a less than considerable contribution to cumulative impacts.

The Reactivation Project is sited and designed such that significant impacts to biological resources are avoided, and in addition, is required to implement mitigation measures BIO-1 through BIO-21 in the attached MMRP, which would further avoid and minimize project-level impacts. As a result, the Reactivation Project's effects related to biological resources would not be cumulatively considerable.

Cumulative Geological Impacts:

The GP EIR notes that the policies contained in the General Plan would direct future development to existing urban areas generally less susceptible to many geologic hazards such as steep slopes, areas with landslide potential, soils prone to erosion or radon gas emissions, safety risks and property damage during major seismic events. These potential impacts would be addressed by existing policies and regulations, ongoing disaster planning, and proposed improved regional coordination called for in the General Plan.

Potential damage to coastal property is considered a regionally potentially significant impact which may be subject to potentially feasible mitigation, such as managed retreat of existing structures, increased sand supply, and natural bluff reinforcement through planting of native, erosion controlling plant species. Impacts from implementation of the General Plan would be mitigated to levels that would not constitute a considerable contribution to this cumulative impact.

Similar to other General Plan-related development, the Reactivation Project would avoid and minimize impacts related to geologic hazards through adherence to existing policies and

regulations, which are outlined in mitigation measures GEO-1 through GEO-4 in the attached MMRP, resulting in impacts that would not be cumulatively considerable.

Cumulative Hazards Impacts:

The GP EIR states that development within the City along with other development within the City sphere of influence and in the region could incrementally increase population that would be potentially exposed to accidents, hazardous materials, and wildfire hazards. However, the GP EIR found that adherence to existing regulations and standards would reduce risks associated with accidents and hazardous materials to levels that are not cumulatively considerable.

It also found that by directing future development and redevelopment to the more urban area of the City, the General Plan policies would limit the City contribution to regional fire hazards, and the contribution of City growth to regional wildfire hazards would be adverse but not significant.

Similar to other General Plan-related development, the Reactivation Project would avoid and minimize impacts related to hazards and hazardous materials through adherence to existing policies and regulations, which are outlined in mitigation measure HAZ-1 in the attached MMRP, resulting in impacts that would not be cumulatively considerable.

Cumulative Impacts to Heritage (Cultural) Resources:

The GP EIR concludes that with extensive existing policies and regulations, potential archaeological and paleontological impacts would be less than significant. Impacts on historical buildings, structures, sites, and districts also would be reduced to less than significant levels. Therefore, while cumulative impacts on heritage resources could occur from development in the region, the City contribution to regional heritage resources impacts would be less than considerable.

The scope of the Reactivation Project is limited in terms of its effects on cultural resources, because it involves repair and maintenance activities on existing facilities related to the Approved Project. However, to ensure that significant effects on cultural resources are avoided and minimized, the Reactivation Project is required to adhere to mitigation measures CUL-1 through CUL-4, outlined in the attached MMRP, which would reduce project-level contribution to cumulative effects to a level that would not be cumulatively considerable.

Cumulative Impacts to Hydrology and Water Quality:

The GP EIR indicates that new development along the South Coast and within the City sphere of influence could be subject to flood hazards and could adversely affect surface and groundwater quality. However, the GP EIR notes that existing regulations, and policies contained in the General Plan would result in less than significant effects from future development within the City and sphere, and the City contribution to regional water quality effects on creeks and groundwater basins would not be considerable.

Similar to other General Plan-related development, the Reactivation Project would avoid and minimize impacts related to hydrology and water quality through adherence to existing policies

and regulations, which are outlined in mitigation measures WQ-1 through WQ-6 in the attached MMRP, resulting in impacts that would not be cumulatively considerable.

Cumulative Impacts to Noise:

The GP EIR notes that cumulative development and growth in the region could result in increases to area traffic volumes and associated noise contours adjacent to major regional highways and roadways in the region. This regional growth would include projected construction of an estimated 403 new homes and 178,202 square feet of non-residential growth within the City's sphere of influence. This growth has been accounted for within overall forecast traffic volumes that were used to model noise contours and impacts. This growth in traffic volumes would be slow and incremental occurring over the 20-year life of General Plan. Associated gradual increases in noise levels would be relatively minor along most of these roads, resulting in noise level increases less than 3 dBA, and would therefore not be generally perceptible to nearby sensitive receivers. Although residents would be unlikely to perceive an increase in noise levels, the slightly expanded noise contours could cause additional existing or proposed residences to be within 65 dBA or greater noise exposure areas for these roadways. Standard regulatory requirements would provide that new residences built near regional roadways would not experience noise levels above established standards. Additional requirements to ensure appropriate noise studies and application of noise control measures are included in the General Plan, which would result in the City's contribution to regional noise issues not being cumulatively considerable.

The Reactivation Project would result in short-term construction-related noise that would be controlled through measures identified in NOI-3 which address noise generated from construction equipment. Operational noise would be controlled and monitored through measures outlined in NOI-1, NOI-2, and NOI-4. The resulting in effects related to noise from the Reactivation Project would not be cumulatively considerable.

Cumulative Impacts to Open Space and Visual Resources:

Open Space and Visual Resources were evaluated in the GP EIR. Future development under the General Plan policies could incrementally contribute to the ongoing loss of open space across the region, and a gradual change in the City to one of more urban character. However, from a regional context, given the predominantly suburban nature of existing development and extensive tracts of protected open space and existing and proposed policies to ensure high-quality urban design, these limited changes to the urban fabric would not be considered regionally significant. Ongoing potential for future subdivisions and particularly for development of large obtrusive homes in important open space areas such as along the Gaviota Coast and highly visible foothills areas of upper Gibraltar Road and Mountain Drive, the potential for impacts to regionally important views and open space would be significant. However, the General Plan includes polices to identify and protect key open space resources, including though acquisition funding. Therefore, development permitted under the General Plan would have a less than considerable contribution to regional cumulative open space and visual resources impacts associated with continued fragmentation of larger open spaces and incremental loss of rural and agricultural areas.

The Reactivation Project would not substantially alter or degrade visual resources because its scope is limited to repair and maintenance activities on existing facilities associated with the Approved Project. Moreover, required mitigation measures outlined in the attached MMRP, specifically VIS- through VIS-5 would ensure that visual impacts are avoided and minimized, resulting in effects on visual resources that would not be cumulatively considerable.

Cumulative Impacts to Public Services:

The GP EIR notes that future development across the region could result in cumulative impacts associated with increased demand for public services, and that the General Plan land use policies direct that most development and redevelopment should occur within the City's urban core areas. Future development within the City could contribute to cumulative impacts on police and fire protection, parks and recreation, schools, and other public services in the region. Such development is generally more easily provided with public services than development in outlying areas, particularly where such development may be more distant from emergency response centers such as fire stations or the police headquarters. Potential impacts to City services would be addressed through existing policies, service programs, and Codes in place, and the annual City budget process, and growth in the City under the General Plan policies would not result in a considerable contribution to cumulative impacts on public services in the region.

The Reactivation Project does not involve uses or operational characteristics that would place a substantial demand on public services, and would not interfere with or impede the use of public facilities, such as recreational facilities. Consistent with the polices of the General Plan, the Reactivation Project represents development that is close to the City's core, and would not require extension of services into undeveloped areas. Impacts from the Reactivation Project on Public Services would not be cumulatively considerable.

Cumulative Public Utilities Impacts:

Potential future development under the General Plan was found to incrementally contribute to regional public utility impacts, including increased regional demand for water supply and solid waste disposal facilities. Non-significant impacts are expected with regard to wastewater collection and treatment, and these impacts would be localized to City utilities and would not constitute a cumulative impact.

Future growth within the region together with potential substantial variability in the reliability of local and State water sources, which other regional waters users depend upon, could result in increased regional demand for potable water supply. The GP EIR noted a projected increase in water demand from new residential units in the City sphere could be approximately 77 AFY, while non-residential development in the sphere could generate approximately 23 AFY of new demand. Future water demand under Plan Santa Barbara growth policies would incrementally contribute to a cumulative demand for water from the Santa Ynez River system. Changes in climate and potential increases in demand could accelerate water quantity and quality issues on the River and increase stress on downstream users, habitats, and sensitive species. However,

existing and proposed policies and water management practices would address new water demand associated with growth and water supply reliability during drought, including potential reactivation of the Approved Project. Therefore, the City contribution to regional water supply impacts would not be cumulatively considerable.

Similarly, increased growth under the Santa Barbara General Plan policies could result in increased demand for solid waste disposal. General Plan policies would reduce project demand for solid waste disposal capacity, and landfill capacity would be addressed through planned construction of a new waste-to-energy facility or development of new long-term landfill capacity.

The existing and proposed regional and City policy framework for long-term water supply and demand management, and regional efforts on water supply and solid waste, would reduce the impact of General Plan implementation to regional cumulative impacts to public utilities to be not cumulatively considerable.

The Reactivation Project would implement the City's LTWSP, and would provide upgrades to water supply and delivery infrastructure. The Reactivation Project does not involve uses or operational characteristics that would place a substantial demand on other public utilities, and would not require construction of facilities beyond those that are included as a part of the Reactivation Project itself. Consistent with the polices of the General Plan, the Reactivation Project represents development that is close to the City's core, and would not require extension of utilities into undeveloped areas. Impacts from the Reactivation Project on Public Utilities would not be cumulatively considerable.

<u>Cumulative Impacts to Transportation:</u>

The GP EIR states that with proposed General Plan policies, the future City traffic contribution to increased congestion on regional roads and at intersections would be less than what is projected in and consistent with the adopted regional CMP. Proposed Plan Santa Barbara land use and transportation policies would be consistent with CMP policies and the intent of CMP legislation to foster in-fill development with housing set within a walkable distance to transit service, jobs and shopping. Therefore, the City contribution to regional effects would not be cumulatively considerable.

The GP EIR found that traffic generated by land uses within the City's central business district and surrounding areas, including the area in the vicinity of the Reactivation Project components, largely reflect an idealized urban development pattern that minimizes traffic generation because they have relatively high density, mix of commercial, residential and employment uses, a closely spaced grid system of streets with a complete sidewalk system. Therefore, the GP EIR concluded that while there are not significant physical changes proposed to the built environment (e.g. new streets, more complete sidewalks, increased diversity of uses) that would further reduce trip generation within this area, new development as planned for in the General Plan would inherently generate less new traffic than if located in outlying areas. Based on the relatively low number of trips, and the off-peak characteristics of construction-related trips, the Reactivation Project

construction traffic would not cause an increase in traffic that is substantial in relation to the existing traffic load and street system capacity in the vicinity of the Reactivation Project components. Additionally, operation of the Reactivation Project would require only eight (8) personnel, which would generate an equivalent number of round trip commuter trips, in addition to periodic trips related to maintenance, inspection, repairs, or similar activities. Because the Reactivation Project would generate low volumes of traffic and is within an area that would not experience substantial adverse traffic impacts, the contribution of the Reactivation Project's impacts on traffic and transportation would not be cumulatively considerable.

Cumulative GHG Impacts:

The GP EIR notes that potential future development under the Santa Barbara General Plan Update would incrementally contribute to regional increases in GHG emissions associated with energy consumption, including increased consumption of electricity, natural gas and non-renewable petroleum products used for transportation fuel. While existing and proposed policies as well as new technologies could help to reduce these new emissions, per capita GHG emissions are not forecast to drop significantly and overall GHG emissions, particularly those associated with use of fossil fuels would be expected to continue to increase with growth.

Existing and proposed regional and City policies that encourage energy conservation, such as the Traffic Solutions Program, regional bus services coordinated by SBCAG (e.g., Coastal Express), and energy efficiency standards required for new development would reduce but not halt projected substantial increases in regional GHG emissions. Existing plans and policies, when combined with the General Plan measures, could reduce the City contribution to regional cumulative impacts to GHG emissions and global climate change, particularly those associated with increased demand for electricity and natural gas. As a result, the GP EIR found that the City contribution to the generation of regional GHG emissions would be expected to be cumulatively considerable.

The effects of GHG and climate change are cumulative in nature. Therefore, the analysis provided for the Reactivation Project's effects related to GHG in Section 5.2 of this Addendum reflect a cumulative analysis. As noted in Section 5.2, the City's CAP includes a GHG emissions inventory to project the level of citywide level of GHG emissions in 2020 with implementation of the CAP and other statewide measures. The addition of the Reactivation Project's estimated annual GHG emissions to the estimated citywide GHG emissions in 2020 would be substantially less than the goal of AB 32 to reduce the citywide GHG emission levels in 2020 to 1990 levels. Moreover, when compared against the SBCAPCD 10,000 MT per year CO_2E MT threshold for industrial stationary sources, the GHG emissions anticipated from the Reactivation Project are less than significant. Accordingly, the Reactivation Project would not conflict with the target GHG emission levels in the CAP that are required to meet the goal of AB 32, and would not exceed the SBAPCD screening level for individual projects and therefore, impacts would not be cumulatively considerable.

Substantial Changes With Respect to the Circumstances Under Which the Project is Undertaken/New Information of Substantial Importance: With respect to construction, the 1991 EIR concluded that cumulative effects would not be significant due to the fact that the construction activities were not cumulatively considerable. Because the proposed Reactivation Project involves considerably less construction activity than that which was analyzed for the Approved Project, the Reactivation Project would result in a reduced level of cumulative impacts and are not cumulatively considerable. This conclusion is based on the fact that several large construction projects were ongoing at the time that the Approved Project was constructed, including the final work being performed for major improvements to Highway 101, adjacent to the Desalination Facility site. With less cumulative construction activity, and less actual construction required for the Reactivation Project as compared to the Approved Project, the effect of the Reactivation Project would not be cumulatively considerable.

As for operation, the 1994 EIR addressed the primary operational effects that would have the potential for cumulatively considerable impacts as energy consumption and effects on marine life. The list of existing projects identified in the 1994 EIR closely matches a list that was recently compiled by the State Water Resources Control Board in their comprehensive evaluation of desalination facilities, as part of their recent adoption (May 6, 2015) of amendments to the California Ocean Plan related to regulation of desalination facilities, including the following:

1. Monterey Bay Aquarium - 0.04 MGD (Active)
2. Marina Coast Water District - 0.3 MGD (Temporarily idle)
3. Duke Energy, Moss Landing - 0.5 MGD (Active)
4. Sand City Municipal - 0.3 MGD (Active)
5. City of Morro Bay Municipal - 0.6 MGD (Intermittent use)
6. Duke Energy - 0.4 MGD (Not known)
7. Pacific Gas & Electric - 0.6 MGD (Not known)
8. Chevron USA - 0.4 MGD (Active)
9. City of Santa Barbara - 2.8-8.9 MGD (Temporarily idle)
10. U.S. Navy - 0.02 MGD (Not known)
11. Southern California Edison – 0.2 MGD (Inactive)

Additionally one plant is currently under construction by Poseidon Water under a Water Purchase Agreement with the San Diego County Water Authority would produce a total of 50 MGD of desalinated water upon completion, which is consistent with the reference in the 1994 EIR regarding the Water Authority's exploration of feasibility of large-scale plants.

Therefore, the 1994 considered the cumulative operational effects of desalination facilities in California based on a list of projects that has not substantially changed since the certification of the 1994 EIR.

Conclusion: There are no substantial changes to the circumstances under which the Reactivation Project would be undertaken and no new information of substantial importance relative to cumulative construction or operational impacts which were not known and could not have been known when the previous EIRs were certified that has since been identified. Therefore, the cumulative effects of the Reactivation Project do not meet the standards for a subsequent or supplemental EIR pursuant to State CEQA Guidelines, section 15162.

6 CEQA FINDING

Based on the above review of the project, in accordance with State CEQA Guidelines Section 15162 and 15164, no subsequent Negative Declaration or EIR is required for the Reactivation Project because: project changes do not require major revisions of the previous EIRs because there are no new significant environmental effects and there is no increase in the severity of previously identified significant effects, as identified above.

(1) There have been no substantial changes with respect to the circumstances under which the Reactivation Project is undertaken; therefore, no major revisions of the EIRs are required to address new significant environmental effects or an increase in the severity of previously identified significant effects, as identified above.

(2) There is no new information of substantial importance that shows that the Reactivation Project would have any significant effects not discussed in the previous EIRs or that significant effects previously examined would be more severe than shown in the previous EIRs. The project proponent has not declined to adopt any identified mitigation measures or alternatives.

This Addendum identifies the changes to Approved Project, based on the Reactivation Project description. With application of identified mitigation measures, all project impacts would be less than significant. This Addendum, together with the certified EIRs for the Approved Project, constitutes adequate environmental documentation in compliance with CEQA for the Reactivation Project.

Prepared by: _____Date: _____

Joe Monaco, Dudek

Reviewed by _____Date: _____

Steven Greer, Environmental Analyst

7 REFERENCES

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Attachment 1

Santa Barbara Desalination Plant Reactivation Biological Assessment Report for Intake Repair and Maintenance Activities (Tenera 2014a)

Santa Barbara Desalination Plant Reactivation

Biological Assessment Report for Intake Repair and Maintenance Activities

October 29, 2014

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Introduction

Tenera marine biologist-divers completed subtidal surveys of the two existing intake structures for the City of Santa Barbara's Charles Meyer desalination facility on 31 July 2014. The intake structures are located south of the City of Santa Barbara, approximately 740 m (2,430 ft) offshore from East Beach and 475 m (1,560 ft) east of the end of Stearns Wharf (**Figure 1**). The surveys of the intake structures and surrounding benthic habitats were completed as part of a biological assessment for the proposed repair and maintenance activities that will be involved in reactivating the desalination facility. The objective of the surveys was to characterize the algae and invertebrates associated with each intake structure in order to assess potential impacts to the local marine environment from the initial cleaning and subsequent periodic maintenance cleaning of the existing structures. The project description, survey methodology, and results are described below.

The desalination plant, including the two existing intake structures, was originally analyzed in two separate Environmental Impact Reports. The first of those reports, prepared in 1991, analyzed the construction and operation of the plant as a temporary emergency facility ("1991 EIR"). Subsequently, the City decided to incorporate the desalination plant into a permanent facility that would produce water supplies that were included in the City's Long-Term Water Supply Plan (LTWSP). The second EIR, prepared in 1994, analyzed the operation of the plant as a permanent facility ("1994 EIR"). Because the long-term operation of the desalination plant contemplated regular maintenance, the 1994 EIR included an extensive analysis of effects on marine organisms and habitats from maintenance activities. Additional summaries of the conclusions of the 1994 EIR are provided below. This report is intended in part to supplement the previous studies, and to provide a specific analysis of repair and maintenance activities involved in the facility's reactivation.

Project Description

This biological assessment was completed as part of the environmental analysis for the reactivation of the Charles Meyer desalination plant, which was placed into standby mode in 1992 following cessation of the severe drought conditions that prompted its construction. Project activities are more fully described in the City's Coastal Development Permit ("CDP") application materials, submitted concurrently herewith, and are summarized in this section. Please refer to Exhibit B, Project Description, of the CDP application for additional detail.

The plant includes an ocean intake pipeline and two concrete intake structures that, when in operation, housed intake pumps, check valves and intake screen attachments. Each intake structure is constructed of concrete with a footprint of 18.83 by 18.83 feet. For the purposes of this report, the two intakes are referred to as Intake A ("inshore", or nearest to shore) and Intake B ("offshore", or farthest from shore). The intake structures are connected to the desalination plant via removable 20-inch high density polyethylene (HDPE) spool pieces connected to a single 36-inch diameter HDPE pipe that was positioned inside of an abandoned 42-inch diameter reinforced concrete outfall pipe (RCP) for much of the distance to the facility on shore. The pumps, check valves, and intake screen attachments were removed as part of the City's decision to place the plant in long-term standby. The concrete intake structures and the 36-inch diameter HDPE connecting intake piping were left in place, except for the 20-inch HDPE spool pieces, which were removed.

The subject of this report is to assess the biological impacts of the initial cleaning and repair of the intake structures during facility reactivation and the periodic maintenance and cleaning that will be necessary for continued operation of the facility. The two existing concrete intake bases will require cleaning to remove biological growth and sand that would block placement of the intake screen attachments. Growth would be removed from the concrete base structures and other associated manmade surfaces such as the nearby piping by a high-pressure washer and hand scraping. Biofouling growth cleaned from the structures would cause some turbidity in the immediate vicinity of the work area, but would settle to the bottom of the surrounding substrate. Similar environmental effects were noted in the 1991 EIR, which noted that construction activities increased seawater turbidity, decreased light penetration and disturbance/destruction of some benthic habitats, but concluded that these effects would be less than significant. Turbidity effects of the proposed reactivation activities would be short-term in nature, and limited in extent, and therefore, consistent with the determination of the 1991 EIR, would be less than significant.

The duration of the cleaning would be 5 days or less and would occur during 10 hour workdays. Following cleaning, the screens would be attached to the intake structures and secured by anchor bolts to the concrete base. The inside of the 36-inch HDPE raw water pipeline would also be cleaned (pigged). Pipeline pigging is more fully described in the CDP application. In general terms, this cleaning method employs an interior scrubbing device called a "pig" that would be inserted into the pipeline and launched with water pressure through the pipeline toward the on-

shore filter feed water pump station, where the pig would be released and retrieved. The pig has an abrasive coating that scrubs the pipeline walls, removing any natural buildup of ocean sediments, mineral deposits, and biogrowth. Material cleaned from the interior of the pipeline would be collected onshore and disposed in a landfill. Pigging would be conducted at roughly the same time that the concrete intake structures are cleaned. Activities would be staged and originate from a utility workboat which would anchor in the vicinity of the intake structures. The ocean floor in the vicinity is sandy bottom with lower biological function and value than rocky or vegetated substrate. Anchors would be placed within sandy areas to minimize any potential impact of anchoring. A biological assessment of the proposed anchoring plan is provided in a separate report (Utility Work Boat Anchoring Locations Subtidal Biological Survey Report, Tenera, August 2014).

Following cleaning of the intake structures and HDPE raw water pipeline, the City will redeploy the intake pumps and check valves and associated 20-inch diameter pump discharge piping spools that connect the concrete intake structure to the 36-inch main HDPE intake piping, as described in Exhibit B, Project Description, of the CDP application. Pump redeployment would also involve reinstallation of power and communications cables.

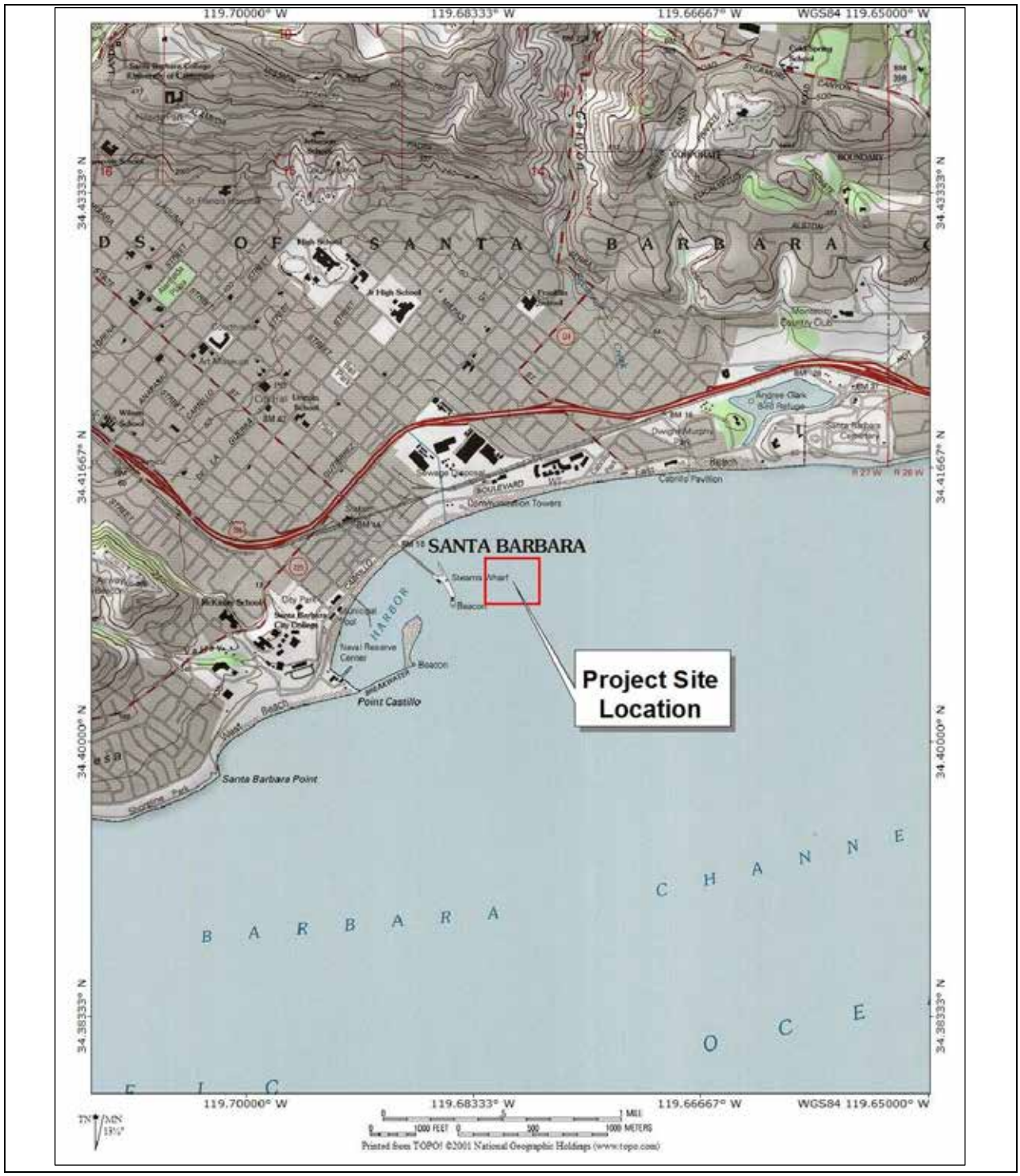

Figure 1. Map showing general location of the project site offshore from the City of Santa Barbara.

Once the initial cleaning and redeployment is complete and the desalination facility recommences operations, the replaced intake screens would be periodically cleaned when the facility is in use. Screens either would be temporarily removed and pressure washed and scraped clean aboard a ship and returned to service, or pressure washed and/or scraped in place. Screens may also be periodically cleaned in place using an air burst system that can be connected to the intake screens using a utility workboat mounted air compressor and flexible air tubing. The intake pipe would also require periodic maintenance, using the pigging procedure described above, as well as chlorine treatment. The chlorination process is described in more detail in Exhibit B, Project Description, of the CDP application. During the chlorination process, the flow of chlorine would be directed landward with the feedwater, by operation of the intake pumps. To ensure that no chlorine escapes the intake structure to the off-shore environment, control system programming will require that the chlorination pump is only operated when: 1) the off-shore intake pumps are running; 2) seawater is flowing through the chlorination tubing lines.

Survey Methodology

Survey work was completed from Tenera's research vessel/dive boat by a two person dive team using open circuit SCUBA equipment. Using the GPS on the research vessel, the divers initially deployed anchored surface floats within the biological survey area at the coordinates provided for each of the two intakes. Each intake was then located and surveyed to provide data on the general characteristics of the biofouling community. The survey was conducted by having one of the divers record the identity and relative abundance of the principal macroinvertebrates and algae colonizing the sides and top rim of the intake structures on waterproof datasheets, while the second diver operated a camera to record video data on the extent and composition of the biofouling community in the survey area. Dates and times of the observations were recorded on the datasheets. The top rim and exterior vertical surface of the intake structures were surveyed first followed by the interior vertical surfaces. Fish species observed on and around the intake structures were also recorded on the datasheets. Copies of the data sheets are provided as **Attachment A**.

Although no work is planned on the sea floor in the immediate vicinity of the intake structures, following the inspection of both intakes, the divers observed conditions on the sea floor surrounding the base of both intakes A and B, noting that the area surrounding both intake structures consist of sandy soft bottom.

Results

The coordinates on file for Intake A prior to the dive were found to be accurate and the anchored buoy deployed at those coordinates was less than one meter (< 3.3 ft) from the base of the structure. The coordinates on file for the Intake B prior to the dive turned out to be inaccurate and were found to be approximately 45.5 m (150 ft) south of the actual intake location. The correct coordinates for the two intake locations are presented in **Table 1**.

Table 1. Coordinates (NAD83) in decimal degrees for the two surveyed intakes

	Intake Locations	
Station	**Longitude**	**Latitude**
Intake A	-119.6797833	34.4079500
Intake B	-119.6796100	34.4078100

A total of three dives were completed to locate and inspect the intakes, totaling one hour and 24 minutes of bottom time per diver. The depth for the dive on Intake A was 11.3 m (37 ft) and the depth of the dive to locate and inspect Intake B was 11.9 m (39 ft). Dive conditions during the survey of the intakes were generally poor due to limited underwater visibility. Visibility in the upper water column was in excess of 5.0 m (16.4 ft), however, a turbid layer extending up to 3 m (9.8 ft) from the bottom limited visibility around the intakes to 1 m (3.3 ft) or less.

The concrete intake structures are nearly identical in size and surface area. The surface area of the intake structures is comprised of three surfaces: the horizontal upper rim, the vertical outer surface, and the vertical inner surface. The horizontal upper rim of each intake is approximately 0.70 m (28 in) in width, with a total surface area of approximately 11 m^2 (120 ft^2) per intake (not including any vertical surface area or the underside of the rim). The outer vertical surface of each intake extends 1.8 to 2.1 m (6 to 7 ft) above the seafloor, with a total exposed exterior surface area of approximately 72 m^2 (770 ft^2) per intake. Sediment had accumulated in the interior of both intakes so the vertical interior surface extended 1.5 to 1.8 m (5 to 6 ft) above the sediment layer with a total exposed interior surface area of approximately 57 m^2 (610 ft^2) per intake. Accordingly, both intake structures have similar conditions, with approximately the same exposed surface area available for colonization by algae and sessile invertebrates. The approximate surface areas of each surface and the approximate total surface area for each intake are shown in **Table 2**. **Figure 2** shows a graphic representation of the locations of the different surfaces.

Table 2. Approximate surface areas for the two surveyed intakes

	Intake Surface Areas (m^2/ft^2)	
Surface	**Intake A**	**Intake B**
Upper Rim (horizontal)	11 / 120	11 / 120
Exterior (vertical)	72 / 770	72 / 770
Interior (vertical)	57/610	57/610
Total	140/1,500	140/1,500

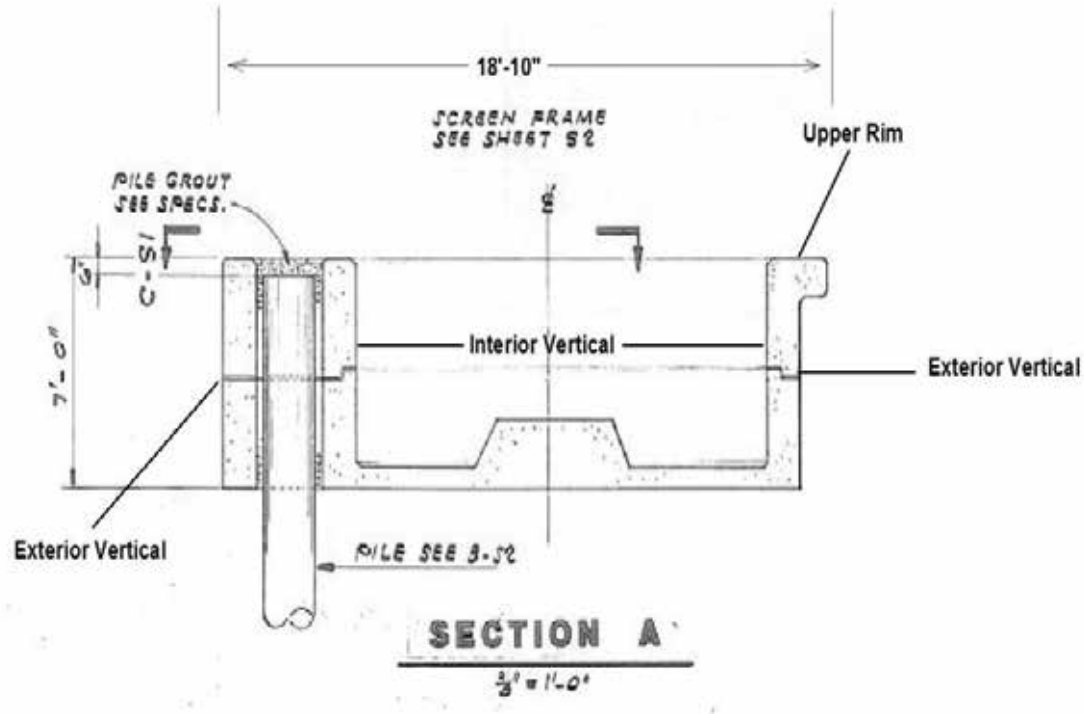

Figure 2. Drawing of side view of intake structure showing the different surfaces surveyed on each intake. (Source: URS Record Drawing E6143569; for orientation of installed structures, refer also to California Coastal Commission approved plans, City record drawings D6142282, D6153777 and D6153778).

The horizontal upper rim of both intakes supported a dense growth of red and brown algae that was not present on the vertical surfaces. The most abundant taxa of red algae on the rim surface were *Rhodymenia* spp., *Chondracanthus corymbiferus/exasperates*, and species from the *Halymenia-Schizymenia* complex. Differences were observed among the brown algal species growing on the upper rims of the two intakes. Giant kelp (*Macrocystis pyrifera*) and feather boa kelp (*Egregia menziesii*) were present on Intake A, but not on Intake B, while bladder chain kelp (*Cystoseira osmundacea*) was present on Intake B but not on Intake A. Giant sea palm kelp (*Pterygophora californica*) was present on the upper rim surfaces of both intakes. The most abundant macroinvertebrates observed on the upper rim surfaces were ostrich-plume hydroids (*Aglaophenia* spp.), anemones (*Anthopleura* spp.), and stalked tunicates (*Styela montereyensis*). No motile invertebrates such as crabs, sea stars, urchins, or mollusks were observed on the horizontal rim surface of either intake. **Figure 3** shows a representative view of the algae growth and invertebrate species on the surface of the upper rim.

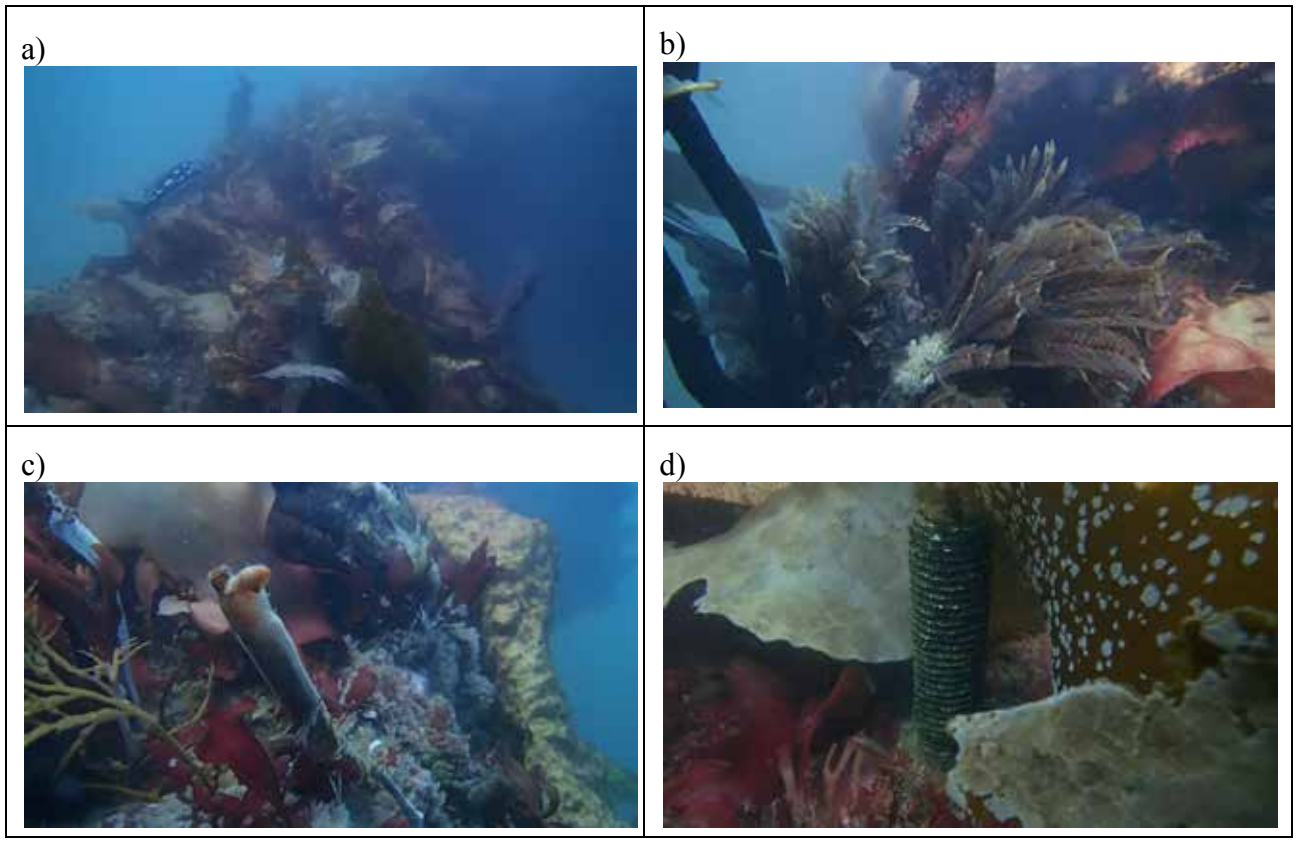

Figure 3. Representative images of species on the horizontal rim surface of Intake B: a) screenshot of algae growing on rim of Intake B; b) screenshot of algae and invertebrates on rim of Intake B showing ostrich-plumed hydroid and giant sea palm stipes (left); c) screenshot of algae and invertebrates on rim of Intake B showing stalked tunicate, bladder chain kelp, *Halymenia-Schizymenia* complex algae, and *Chondracanthus* spp. algae; and d) screenshot of algae (*Rhodymenia* spp. and giant sea palm blades with epiphytic bryozoans, and threaded metal stud on rim of Intake B.

In contrast to the dense algal growth on the upper rim, the vertical surfaces supported relatively sparse algal growth consisting primarily of *Rhodymenia* spp. and other red algae. Much of both the inner and outer vertical surfaces were colonized by bryozoans, sponges, and hydroids. Various other sessile invertebrates such as sponges (*Leucilla nuttingi*), anemones (*Anthopleura* spp., *Corynactis californica*), tunicates (*Styela montereyensis,*), barnacles (*Megabalanus californicus*, *Tetraclita rubescens*, *Balanus* spp.), mollusks (*Serpulorbis squamigerus*), tube worms (*Serpula vermicularis*), and gorgonians (*Muricea spp.*, *Lophogorgia chilensis*) were also common on the vertical surfaces. Rock scallops (*Crassedoma giganteum*) were present on both intakes but were not abundant. Tube-dwelling anemones (*Pachycerianthus fimbriatus*) were present in low abundance in the soft sediment inside of the intake structures. The assemblages of sessile invertebrates on both the inner (**Figure 4**, photo b) and outer vertical surfaces of the intakes (**Figure 4**, photos a, c, and d) were generally similar, however, the outer surfaces of the structures supported a greater diversity and abundance of organisms. Representative images of invertebrate assemblages on the inner and outer surfaces of the intakes are shown in **Figure 4**.

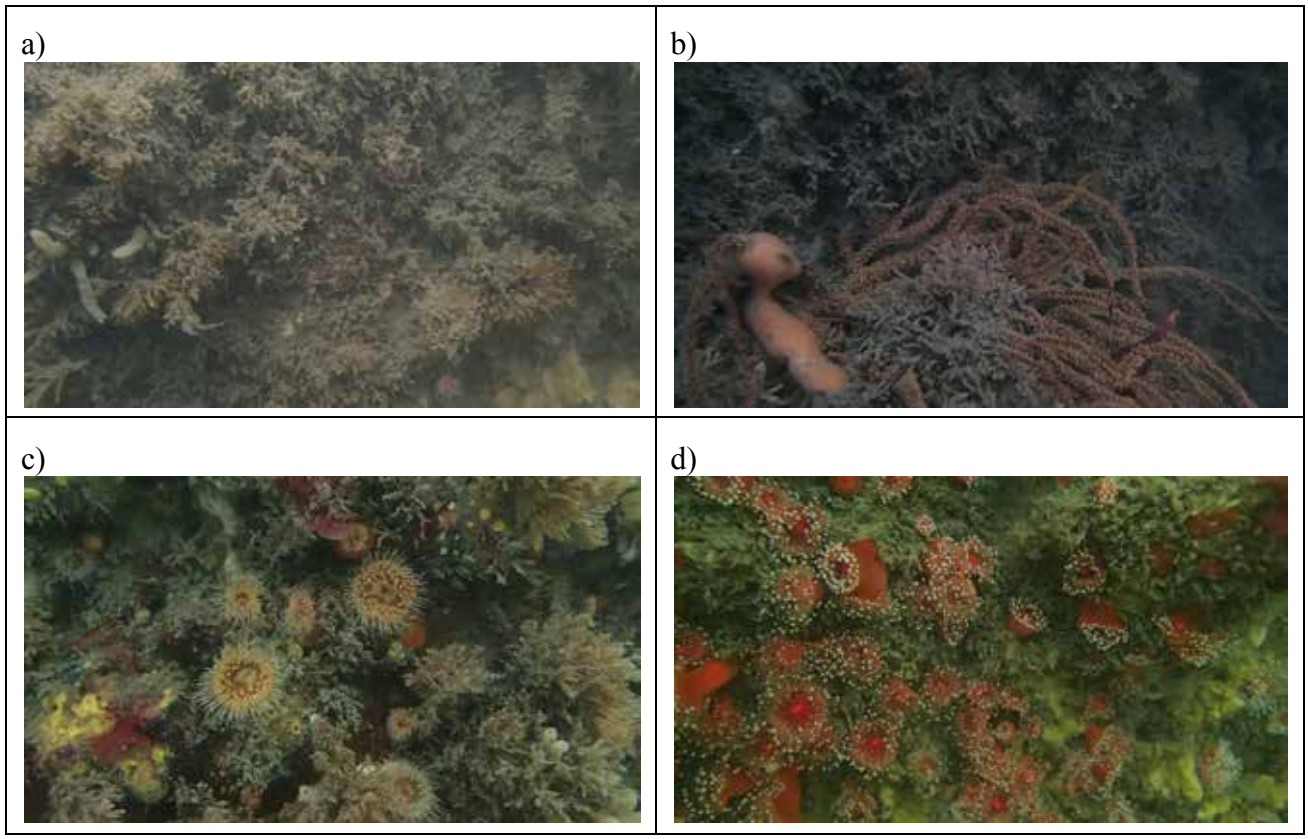

Figure 4. Images of: a) screenshot of representative invertebrate assemblage occupying much of the outer vertical surface of Intake B; b) screenshot of representative invertebrate assemblage occupying much of the inner vertical surface of Intake B; c) close-up screenshot of invertebrate assemblage diversity on the outer vertical surface of Intake B; and d) close-up screenshot of sessile invertebrates *Corynactis californica* and encrusting sponges on outer vertical surface of Intake B.

In addition to sessile macroinvertebrates, a variety of motile macroinvertebrates were present on the vertical surfaces of the intakes **(Table 3)**. In addition to motile invertebrates observed on the intake structures, three species, the spiny sea star (*Astropecten armatus*), California sea hare (*Aplysia californica*), and California spiny lobster (*Panulirus interruptus*) were observed on the seafloor within 10 m (33 ft) of the intake structures. Fishes observed during the survey are noted on the datasheets **(Attachment A)**.

Table 3. Motile macroinvertebrates observed on the intake structures and relative abundance observed during survey (abundant- 10-20+ individuals; Common- 6-9 individuals; Uncommon 3-5 individuals; rare 1-2 individuals).

Group	Common Name (*scientific name)*	Intake A	Intake B
Mollusks			
	chestnut cowry (*Cypraea spadicea*)	common	common
	Kellet's whelk (*Kelletia kelletii*)	abundant	abundant
	giant keyhole limpet (*Megathura crenulata*)	common	common
	Spanish shawl nudibranch (*Flabellina iodinea*)	uncommon	uncommon
Echinoderms			
	bat star (*Patiria miniata*)	common	common
	spiny brittle star (*Ophiothrix spiculata*)	not noted	uncommon
	purple sea urchin (*Strongylocentrotus purpuratus*)	uncommon	uncommon
	red sea urchin (*Strongylocentrotus franciscanus)*	rare	rare
	crowned sea urchin (*Centrostephanus coronatus*)	uncommon	uncommon
	warty sea cucumber (*Parastichopus parvimensis*)	common	common
Crustaceans			
	hermit crab (*Pagurus* spp.)	abundant	abundant

A total of 19 fish species were observed on and around the two intakes during the intake inspection dives **(Table 4)**. All the fishes observed are common species in the Santa Barbara channel and Southern California Bight. The intake structures and their associated algae and invertebrate assemblages provide structure and sheltering habitat for different life stages (adults, juveniles, and young of the year [YOY]) of many of the fishes observed. For example, juvenile and adult kelp bass (*Paralabrax clathratus*), blacksmiths (*Chromis punctipinnis*), and señoritas (*Oxyjulis californica*) were abundant in the water column above the structures, however, as would be expected, the young of the year (YOY) of these species were observed in close association with algae along the upper rims or shelter provided by invertebrates along the vertical interior and exterior side surfaces. Kelp perch (*Brachyistius frenatus*) were most abundant around the giant kelp and feather boa kelp present on Intake A but were also observed among the understory algae on the rim surfaces of both intakes. Cabezon, both juveniles and adults, were observed in the algae along the upper rim of both intake structures, however, a single adult was also observed under a legde between the bottom of Intake B and the seafloor. Other fishes, including sheephead (*Semicossyphus pulcher*), rockfishes (*Sebastes atrovirens*, *S. carnatus*, *S. mystinus* [YOY]), and *S. serranoides* [YOY]), and painted greenlings (*Oxylebius pictus*) were closely associated with the vertical structure and invertebrate community on the sides of the intakes. Blackeye goby (*Rhinogobiops nicholsii*) were present in low numbers on the seafloor around the base of the structures (inside and outside). Surfperches (*Embiotoca jacksoni*, *Rhacochilus vacca*, and *Hypsurus caryi*) were observed in the water column, algae along the upper rim, and around the vertical exterior surfaces.

Several species of small fish that would be expected to live on structures such as the intakes were not observed during the survey but are likely to be present in low numbers. These include combtooth blennies (*Hypsoblennius* spp.), sculpins (*Artedius* spp.), kelpfishes (*Gibbonsia* spp.), and fringeheads (*Neoclinus* spp.).

Table 4. Estimated abundance of fishes and life stages (a= adult, j= juvenile, yoy= young of the year) observed on and around the intake structures.

Common Name (*scientific name)*	Estimated Number (life stage)	
	Intake A	Intake B
bat ray (*Myliobatis californica*)	1 (a)	not observed
blackeye goby (*Rhinogobiops nicholsii*)	2 (a)	1 (a)
blacksmith (*Chromis punctipinnis*)	5 (a), 200 (j)	50 (a)
black surfperch (*Embiotoca jacksoni*)	2 (a), 1 (j)	3 (a)
blue rockfish (*Sebastes mystinus*)	3 (yoy)	1 (yoy)
cabezon (*Scorpaenichthys marmoratus*)	1 (a)	1 (a), 2 (j)
gopher rockfish (*Sebastes carnatus*)	not observed	1 (a)
jacksmelt (*Atherinopsis californiensis*)	1 (a)	not observed
kelp bass (*Paralabrax clathratus*)	10 (a), 15 (j)	4 (a), 3 (j)
kelp perch (*Brachyistius frenatus*)	30+ (a)	2 (a)
kelp rockfish ()	not observed	1 (a), 1 (j)
olive rockfish (*Sebastes serranoides*)	1 (a), 2(j)	not observed
painted greenling (*Oxylebius pictus*)	1 (a), 2(j)	1 (a), 2 (j)
pile perch (*Rhacochilus vacca*)	2 (j)	2 (j)
rainbow perch (*Hypsurus caryi*)	1 (j)	not observed
round stingray (*Urolophus halleri*)	not observed	1 (a)
señorita (*Oxyjulis californica*)	20 (a), 50 (j)	10 (a)
sheephead (*Semicossyphus pulcher)*	not observed	3 (a)
*unidentified turbot (Pleuronichthys sp.)	not observed	not observed

Seafloor Transects

Divers swam 35 m (115 ft) long transects from Intake B at four different headings (0°, 90°, 180°, and 270°). The results were generally similar to what was found for Intake A during the anchoring location survey on 25 July 2014, and described in the Utility Work Boat Anchoring Locations Subtidal Biological Survey Reports, submitted concurrently herewith. The seafloor to the north (0°) and east (90°) of Intake B was 100 percent sand/soft sediment with no hard substrate out to 35 m (115 ft). To the south (180°) and west (270°) divers located anthropogenic debris, a section of abandoned pipeline that is unassociated with the desalination plant, and an area of low relief rocky substrate. The rocky substrate was found on a heading of 270° from the intake starting at around 8 m (26 ft) and extending out past 22 meters (72 ft). It was not

determined if the rocks were armoring over a pipeline or a natural formation. Various red algae species were noted growing on the low relief rocks and several crevices in the substrate were large enough to shelter California spiny lobster. A large, 1m + (3.3 ft +) metallic sphere, likely to be an abandoned buoy, half buried in the seafloor, was located at 20 m (66 ft) from Intake B on a heading of 180° and a short distance from the sphere the transect crossed and followed along an intact pipeline from 28 m (92 ft) to the end of the transect.

No special status species were encountered during the survey of the intake structures or surrounding seafloor.

Discussion

The 1994 LTWSP EIR specifically addressed long-term operation and maintenance of the desalination facility, including the intake structures. (See Marine Biological Resources Technical Appendix, Appendix D to the EIR, 1993, Coastal Resources Management). The report stated that algae and invertebrates that have colonized the intake structure and pipeline would be periodically cleaned and removed, and specifically identifies cleaning methods that are consistent with the activities addressed in this report, including removing organisms from the outside of the intake structure by divers, and cleaning the interior of the pipe using a pig device, as well as periodic chlorine treatments. The EIR identified the impacts associated with these maintenance activities to be a "Class III unavoidable, and less-than-significant impact necessary to maintain the efficiency of the seawater intake operation." Moreover, in approving a CDP for the permanent desalination facility in 1996, the California Coastal Commission determined that the facility, as conditioned, is consistent with and adequate to carry out the provisions of Coastal Act sections 30230 and 30231, which serve to protect marine resources in coastal waters. (See Coastal Commission Staff Report and Findings for CDP Application No. 4-96-119, Sept. 19, 1996, at 10-11.)

The species observed on and around the two intake structures during the survey are common inhabitants of natural rocky reefs, pilings, pipelines, and other objects on the seafloor that provide hard substrate for colonization by algae and invertebrates, and are consistent with the types of organisms and habitats identified in the 1994 EIR. Most of the vertical surface area of the intakes is occupied by an assemblage of algae and sessile invertebrates including bryozoans, anemones, barnacles, and encrusting sponges that is less that 5 cm (2 in) in height/depth. The upper rim of the structures support a dense growth of various red and brown marine algae including one giant kelp (Intake A), several feather boa kelp plants (Intake A), and numerous giant sea palms (both intakes). Removal of the invertebrates, algae, and kelp during cleaning and reactivation of the intake structures is similar to what was analyzed and anticipated in the 1994 EIR, and would have a less-than-significant impact on the local marine environment as these same assemblages occur on other hard substrate and structures in the vicinity of the intakes (**Figure 4**).

The intake structures have been undisturbed in the marine environment without maintenance cleaning for approximately twenty-two years, allowing the growth and development of an invertebrate community that includes structure-forming taxa such as scallops, gorgonians, and large barnacles. The initial cleaning activity will remove and/or relocate the accumulated algae and invertebrates to nearby suitable habitat where feasible (please refer to Recommendations section, below). Once the maintenance is initiated, the intake structures would not serve as reliable algae or invertebrate habitat. Although many of the same algae and invertebrate species are expected to recolonize the intake structures shortly after the initial cleaning, the scheduled maintenance cleanings as described in Exhibit B, Project Description, of the CDP application, would prevent the future development of a community similar to the one that currently exists on the intakes. Habitat impacts from periodic maintenance cleanings would be similar to the initial cleaning, and impacts would remain less than significant.

The intake structures, and the algae and invertebrates colonizing them, provide foraging opportunities and refuge for a variety of fish species. Most of the fishes observed in the vicinity of the intake structures are highly mobile and would move to suitable nearby habitats during and after cleaning. Initially, cleaning would likely attract fishes to the area to feed on the invertebrates removed from the structures and prey on smaller fishes displaced by the cleaning. Removing the algae and invertebrates from the intake structures through the initial cleaning would reduce the attractiveness of the structures for fish species. The removal of localized habitat would force fishes such as the YOY rockfish, blacksmiths, and señioritas observed during the survey to disperse and occupy similar habitats in the vicinity. An increased risk of predation is a possibility, but is unlikely due to the proximity of other similar marine growth that has formed on other nearby hard substrate surfaces, as shown in **Figure 4**. Other small fishes such as blennies, sculpins, kelpfishes, and fringeheads, which were not observed during the survey but are likely to occupy features such as vacant barnacle tests and bivalve shells within the invertebrate community, would be displaced permanently during cleaning. Periodic maintenance cleaning would have similar effect (e.g. fish drawn in to feed and small fish displaced) but on a smaller scale since the invertebrate community and habitat complexity would likely not be as well developed.

No federal or state listed species were encountered during the diving survey of the intake structures. Commercial and/or recreational fisheries exist for some of the invertebrate species present on the intakes (e.g. red sea urchin, rock scallop, sea cucumber) or in the vicinity of the intakes (e.g. spiny lobster). However, the intakes are located in an expanse of soft sandy bottom substrate and appear isolated from the rocky reef habitat where the spiny lobsters were found. The low abundance of these commercially and/or recreationally important invertebrates on and around the intakes supports that the periodic cleaning during operation and cleaning activities associated with reactivation of the intakes would have less than significant effects on the local fisheries for these species.

Overall, the repair and maintenance activities involved in reactivating the desalination facility were found to be protective of the marine environment in accordance with sections 30230

(maintenance and restoration of marine resources) and 30231 (maintenance and restoration of water quality) of the Coastal Act, and consistent with the Coastal Commission's prior findings regarding the protection of marine resources. (See Coastal Commission Staff Report and Findings for CDP Application No. 4-96-119, Sept. 19, 1996, at 8-11.)

RECOMMENDATIONS

The following are recommendations for the initial and follow-up maintenance efforts involving the intake structures. Although the initial maintenance cleaning will involve the removal of a larger volume of material, the same recommendations would apply to both operations.

- If possible, only clean the top rim and interior surfaces. This would allow the macrofouling community on the outer surfaces to continue to provide habitat for small fishes and invertebrates.
- Remove any large slow-moving macroinvertebrates to the hard reef area adjacent to Intake B shown in **Figure 4,** where feasible. These would include sea urchins, sea cucumbers, sea stars, giant keyhole limpets, and large snails.
- Cut and bag any large kelp plants to avoid the creation of large drift that could foul boat props. The bags could be moved to the surface and disposed of further offshore or at a landfill.
- Perform the kelp and macroinvertebrate removal activities using divers to allow fish to move out of the area before mechanical or pressure washing commences.
- If the maintenance activities are conducted in early spring, the algal growth will be at a minimum and any recently settled spores will be removed before they begin growing. This will minimize the disturbance on other organisms that might be attracted to the structures due to the algal growth.

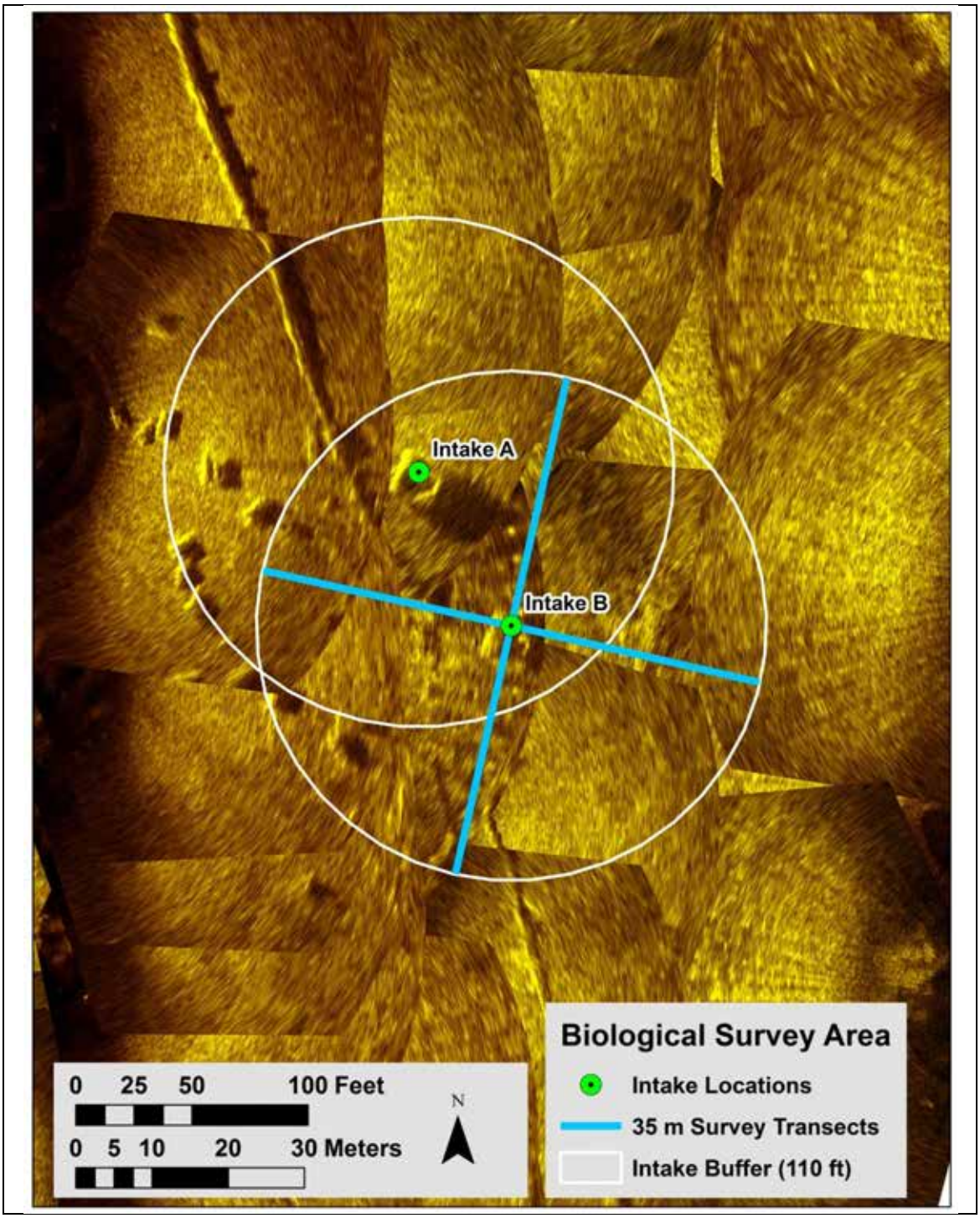

Figure 4. Composite of multi-beam sonar images showing the intake locations, and transects within the survey area. The intact pipeline and anthropogenic debris is also visible in the sonar images.

ATTACHMENT A

SURVEY DATASHEETS

Attachment 2

Santa Barbara Desalination Plant Reactivation Utility Work Boat Anchoring Locations Subtidal Biological Survey Report (Tenera 2014b)

Santa Barbara Desalination Plant Reactivation

Utility Work Boat Anchoring Locations
Subtidal Biological Survey Report

September 30, 2014

Prepared for:
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Introduction

Tenera marine biologist-divers completed subtidal surveys of proposed utility work boat anchoring locations as part of a biological assessment for the proposed repair and maintenance activities that will be involved in reactivating the City of Santa Barbara's Charles Meyer seawater desalination facility. Please refer to Exhibit B, Project Description, of the City's Coastal Development Permit ("CDP") application, submitted concurrently herewith, for additional detail on the existing facilities, as well as the proposed repair and maintenance activities. The facility includes an ocean intake pipeline and two concrete intake structures that, when in operation, housed intake pumps, check valves and intake screen attachments. Each intake structure is constructed of concrete with a footprint of 5.7 by 5.7 meters (m) (18.8 by 18.8 feet [ft]). For the purposes of this report, the two intakes are referred to as Intake A ("inshore", or nearest to shore) and Intake B ("offshore", or farthest from shore) (**Figure 1)**. The original pumps, check valves, and intake screen attachments, as well as the 51-centimeter (cm) (20-inch [in.]) HDPE spool pieces that connect each intake structure to the intake pipeline were removed as part of the City's decision to place the facility in long-term standby in 1992.

The repair and maintenance activities would involve reinstalling the equipment with existing or updated technology. The repair and maintenance activities would be conducted from a utility work boat, from which the intake screens, pumps, and other equipment would be lowered into place. Anchoring the vessel using multiple anchor locations is required to provide the needed stability for handling of the large pieces of equipment, and therefore determination of an appropriate location for utility work boat anchoring is needed to ensure that there are no adverse impacts to sensitive hard/rocky benthic habitats. Specifically, a four-point anchoring system is proposed to provide for the optimal level of vessel stability. With a four-point system, the vessel can be repositioned to perform the necessary work activities by pulling and slacking on lines attached to each of the four anchors, thereby avoiding the need for weighing and resetting the

anchors, and consequently avoiding disturbance to the sea floor. Diving surveys for eight potential anchoring locations were conducted on 25 July 2014. A survey of the overall mooring/anchoring field using multi-beam sonar was also conducted on 25 July 2014 to provide additional data on objects and substrates within the proposed mooring field around each intake. Additional dive work completed on 31 July 2014 to locate and inspect the two intake structures (see Biological Assessment Report for Intake Repair and Maintenance Activities, Tenera 2014) found the location of Intake B to be approximately 45.5 m (150 ft) north of the coordinates on file for Intake B. (By using more accurate data from the multi-beam sonar survey, described further below, this difference was later adjusted to approximately 32 m (105 ft) north). This finding resulted in modifications to the anchor locations, as further discussed below. The objective of the work analyzed in this report was to determine suitable anchor locations that will avoid potential impacts to sensitive hard/rocky benthic habitats. The survey methodology and results are described below and include habitat characterizations for benthic habitats within each proposed anchoring location.

Survey Methodology

Survey work was completed from a Tenera research vessel/dive boat by a three person dive team using SCUBA equipment and a diver communication system. Using a Differential Global Positioning Service (DGPS) on the boat, the dive team deployed an anchored surface float at the coordinates of the center of each of eight potential anchor zones provided prior to the survey. Surveys of each anchor location were conducted by two divers using standard circle search methods and a 50 m (164 ft) fiberglass tape reel. The third diver remained aboard the research vessel to monitor communications and vessel traffic in the area. One of the divers was stationed at the center of the anchor location and the second diver swam a series of incrementally increasing diameter circles out to a total distance of 15 m (49 ft) from the anchor location. The first diver monitored the progress of the second diver with a compass and signaled the second diver when he had completed an entire circle. The second diver then swam out an additional five meters and began another circle, with this process repeating until the second diver reached 15 m (49 ft) from the anchor location. The 15 m (49 ft) radius resulted in an area of approximately 700 m^2 (7,532 ft^2) of seafloor being surveyed around each proposed anchor location. This area is referred to as the anchor zone. Divers noted the distance and heading from the anchor location of any hard substrate and objects encountered during the circle search. Algae, epibenthic macroinvertebrates, and fishes observed within each anchor zone were identified and recorded on waterproof datasheets. The relative abundance of each species within each anchoring zone was also noted. When a proposed anchoring zone was found to contain more than 10% hard substrate or an existing intact pipeline, the surrounding area was searched to determine if an alternate site could be located with a radius of 15 m (49 ft) that contained less than 10% hard substrate. Once a new location was found, a surface float was deployed by the dive team at the center of that area. When all anchoring zones had been surveyed, the boat was moved to the new location, the float line was retrieved and pulled tight and vertical over the subsurface weight, and the coordinates of the new location recorded.

A multi-beam sonar survey of the overall mooring/anchoring field was conducted following completion of the diving survey. The multi-beam sonar survey entailed running seven parallel tracks, spaced approximately 20 m (66 ft) apart, through the mooring/anchoring field. The parallel tracks were oriented in a north-south direction and each track was run twice, once from a south to north direction on a 0° heading and once from a north to south direction on a 180° heading. Approximately 3.6 hectares (ha) (9 acres) of the seafloor were imaged during the multi-beam survey.

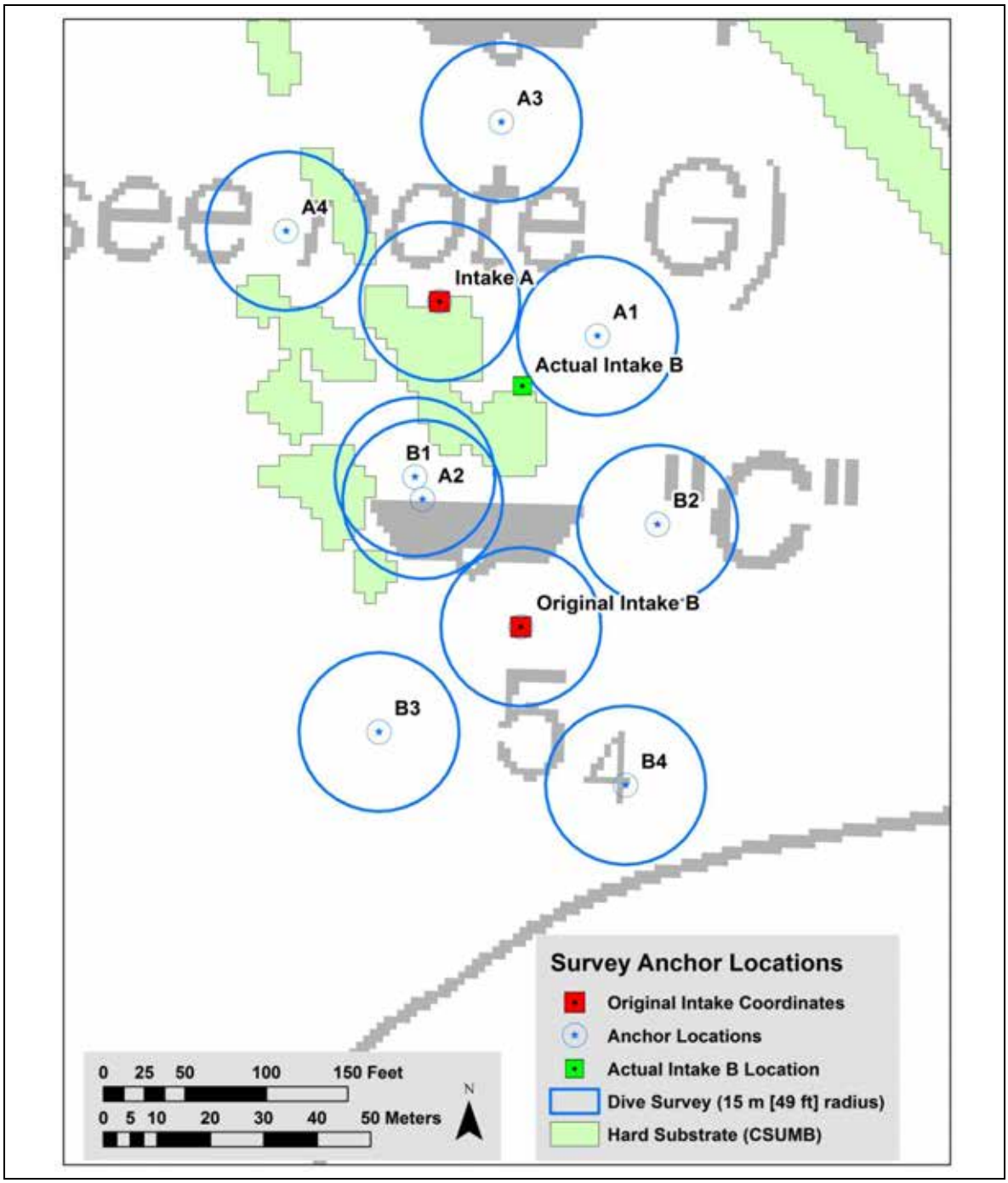

Figure 1. View showing locations of the original and actual intake locations and potential anchor locations (after rotation to avoid hard substrate) and areas surveyed by divers around anchor locations. Also shown are areas of hard substrate (light green) from California State University Monterey Bay (CSUMB) bathymetry data.

Results

Based on the proposed four-point anchoring system described earlier, a total of eight potential anchoring locations, four associated with each intake, were surveyed by divers on 25 July 2014 based on the GPS coordinates provided for the center of each anchoring location (**Table 1**). Prior to the diving survey the locations of the anchoring locations were revised (rotated) to avoid hard substrate shown on the Cal State University Monterey Bay (CSUMB) bathymetry layer. The coordinates of the revised anchoring locations are also shown in **Table 1**. The plotted coordinates of the original and revised anchoring locations, intakes, and surveyed areas around the anchoring locations are presented in **Figure 1**. Additional GPS data collected on 31 July 2014 to locate and inspect the two intake structures found the location of Intake B to be approximately 45.5 m (150 ft) north of the coordinates originally provided for Intake B. As a result, survey information for the two southernmost anchoring locations for Intake B (Stations B3 and B4) surveyed on 25 July 2014 were not used. Multi-beam sonar data and information from the dive surveys of benthic habitats surrounding Intake B on 31 July 2014 were used to recommend adjustments to the anchoring locations that avoid, to the greatest degree possible, impacts to hard substrate.

Dive conditions were generally poor during the surveys of the anchor locations. A layer of turbid water was present on the bottom during the survey and visibility was generally less than one meter (3.3 ft). Water temperature on the bottom ranged from 14° C (58° F) to 17° C (62° F).

Table 1. Original and revised coordinates (NAD83) in decimal degrees for each intake and associated proposed anchoring locations. The original locations of the anchoring locations were rotated to avoid hard substrate shown on the Cal State University Monterey Bay (CSUMB) bathymetry layer.

	Original Locations		Revised Locations	
Station	**Longitude**	**Latitude**	**Longitude**	**Latitude**
Intake A	-119.6797833	34.4079500		
A1	-119.6795333	34.4077333	-119.67945986000	34.40789845500
A2	-119.6800333	34.4077333	-119.67980704400	34.40761217120
A3	-119.6795333	34.4081667	-119.67966695200	34.40825783260
A4	-119.6800333	34.4081667	-119.67937833300	34.40713500000
Intake B	-119.6796000	34.4074000		
B1	-119.6798500	34.4076167	-119.67982379400	34.40765024080
B2	-119.6793500	34.4076167	-119.67932738200	34.40758019270
B3	-119.6798500	34.4071833	-119.67988318100	34.40721472390
B4	-119.6793500	34.4071833	-119.67937833300	34.40713500000

Intake A (Inshore Intake)

Station A1

One hundred percent of the seafloor was sand/soft sediment with no hard substrate encountered within the 15 m (49 ft) radius. The abundance of submerged aquatic vegetation at the anchor location was moderate to low and consisted of various red algae species. The spiny sand star (5 individuals) was the only epibenthic macroinvertebrate noted within the proposed anchor location.

Station A2

The seafloor within Station A2 was sand/soft sediment; however, as many as six abandoned pipe sections were present within the anchor location. Pipe sections were encountered at 8 m (26 ft) on headings of 270° (2 sections) and 180°, 9.5 m (31 ft) on a heading of 190°, 12.5 m (41 ft) on a heading of 290°, and 15 m (49 ft) on a heading of 90°. The pipe sections were over one meter (>3.3 ft) in diameter and approximately 2.5 m (8.0 ft) in length. The abundance of submerged aquatic vegetation on the sandy substrate was moderate to high and consisted of various species of red algae. Epibenthic macroinvertebrates encountered on soft substrate within the anchor location included four Kellet's whelks (*Kelletia kelletii*) and ornate tube worms (*Diopatra ornata*). The pipe sections provide hard substrate that supported a variety of algae and macroinvertebrate species. This anchoring location is recommended for relocation west of the pipe sections to avoid fouling of the anchors or ground tackle.

Station A3

Nearly one hundred percent of the seafloor was sand/soft sediment with only one large cobble noted on the perimeter of the anchor area at 15 m (49 ft) from the center of the anchor location on a heading of 60°. The abundance of submerged aquatic vegetation at the anchor location was moderate to low and consisted of various red algae species. Epibenthic macroinvertebrates encountered within the anchor area include several Kellet's whelks (3) and spiny sand stars (*Astropecten armatus*) (3 individuals).

Station A4

The seafloor within Station A4 was mostly sand/soft sediment; however, an intact pipeline crosses through the northeastern quadrant of the anchoring area approximately 13 m (43 ft) from the center point and a single large abandoned pipe section was present 8 m (26 ft) from the center on a heading of 270°. The pipe section appeared to be similar in diameter and length to the pipe sections found at Station A2. In addition to the pipeline and pipe section, an area of low-relief rock with a thin layer sand on top was encountered 14 m (46 ft) from the center point of the station area at a heading of 120°. The abundance of submerged aquatic vegetation on the transect was moderate and consisted of various red algae species, a single juvenile giant kelp plant (*Macrocystis pyrifera*) growing from a holdfast buried in the sand within one meter of the center point, and a giant sea palm (*Pterygophora californica*) growing on the low relief rock. Epibenthic macroinvertebrates encountered within the anchor area include a single Kellet's

whelks and four spiny sand stars. Based on diver observations we recommend moving the center point of the anchoring area 5 m (16 ft) to the west to avoid the pipeline and rock substrate.

Intake B (Offshore Intake)

Station B1

The seafloor around Station B1 was 100 percent sand/soft sediment with no hard substrate out to a radius of 12 m (39 ft) radius. Two large abandoned sections of pipe were encountered beyond 12 m (39 ft), one at 12 m (39 ft) on a 340° heading and one at 14 m (46 ft) on a 270° heading. The pipe section appeared to be similar in diameter and length to the pipe sections found at Stations A2 and A4. Additionally, a low relief rock approximately 2 m (7 ft) in length and a meter (3.3 ft) in width was encountered at 13 m (43 ft) on a heading of 60° from the center point. A moderate abundance of submerged aquatic vegetation was encountered and consisted of various red algae species, a juvenile giant kelp plant and a giant sea palm growing on the low relief rock. Kellet's whelks (8 individuals) and ornate tube worms were the only epibenthic macroinvertebrates noted within the proposed anchor area.

Station B2

One hundred percent of the seafloor was sand/soft sediment with no hard substrate encountered within the 15 m (49 feet) radius. The abundance of submerged aquatic vegetation at the anchor location was moderate to low and consisted only of various red algae species. The spiny sand star (2) was the only epibenthic macroinvertebrate noted within the proposed anchor area.

Stations B3 and B4

New locations for Stations B3 and B4 were surveyed on 31 July 2014. The seafloor to the north (0°) and east (90°) of Intake B was surveyed out to 35 m (115 ft) and consisted of 100 percent sand/soft sediment with a moderate to low abundance of various red algae. To the south (180°) a partially buried metal sphere (possibly a 0.9 m [36 in.] mooring buoy) was located 20 m (65.6 ft) from the intake and an intact pipeline was intersected at 28 m (92 ft) that paralleled the course out to 35 m (115 ft). A low relief rocky reef was present to the west of Intake B starting approximately 8 m (26 ft) from the intake on a heading of 270°.

As noted earlier, additional dive work completed on 31 July 2014 to locate and inspect the two intake structures found the location of Intake B to be approximately 45.5 m (150 ft) north of the coordinates on file for Intake B. This finding resulted in modifications to the anchor locations. Because the intake structures are closer together than previously documented, the utility work boat would be able to access both from a single set of anchor locations, eliminating the need for four of the eight anchor locations, as further discussed below.

Recommendations

Diving surveys established the presence of a pipeline and number of pipe sections in several of the potential anchoring areas. The multi-beam sonar survey provided additional information on

the number and locations of pipe sections scattered about on the seafloor to the west of the intake structures (**Figure 2**). The results of the multi-beam data verified the information collected from the anchoring location surveys and other observations that the seafloor to the north and east of the intakes was mostly or completely comprised of sand and soft sediment. Potential anchoring locations to the west and south of the intakes should be adjusted to avoid the intact pipeline and as many as 17 pipe sections scattered on the seafloor. If feasible, we recommend moving the anchoring locations farther west, outside the debris field, and using only four anchoring locations to reactivate and service both intake structures (**Table 2**). The recommended four anchoring locations would all be located in sandy, soft-bottom areas, containing lower biodiversity and habitat value than hard substrate. **Figure 3** shows recommended anchoring locations for a four point mooring configuration to work on both intakes. Four point mooring was recommended to the City by marine contractors based upon the type of work involved. The multi-beam survey also provided more accurate data on the locations of both intakes A and B. As a result, the locations of both intakes relative to the areas of hard substrate are somewhat different in **Figures 1** and **3**, with Figure 3 showing the more accurate locations.

Table 2. Coordinates in decimal degrees (NAD83) for recommended anchoring locations (R1-R4) for a single four point mooring.

Station	Longitude	Latitude
	Recommended Locations	
R1	-119.68019271700	34.40749638570
R2	-119.67983396800	34.40825724300
R3	-119.67931000800	34.40800731540
R4	-119.67939257300	34.40742018950

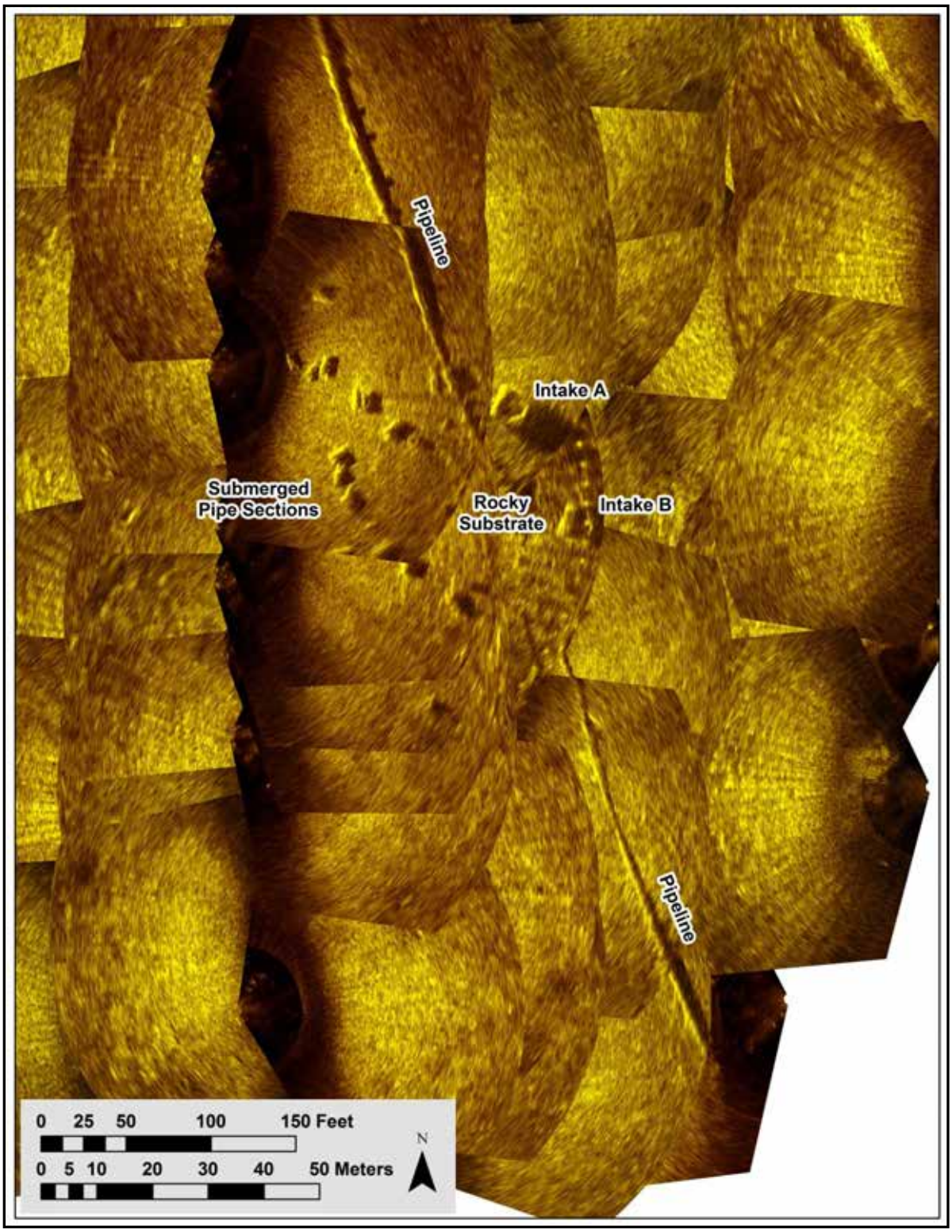

Figure 2. Composite of multi-beam sonar images showing the intakes, pipeline, scattered pipe sections, and rocky substrate.

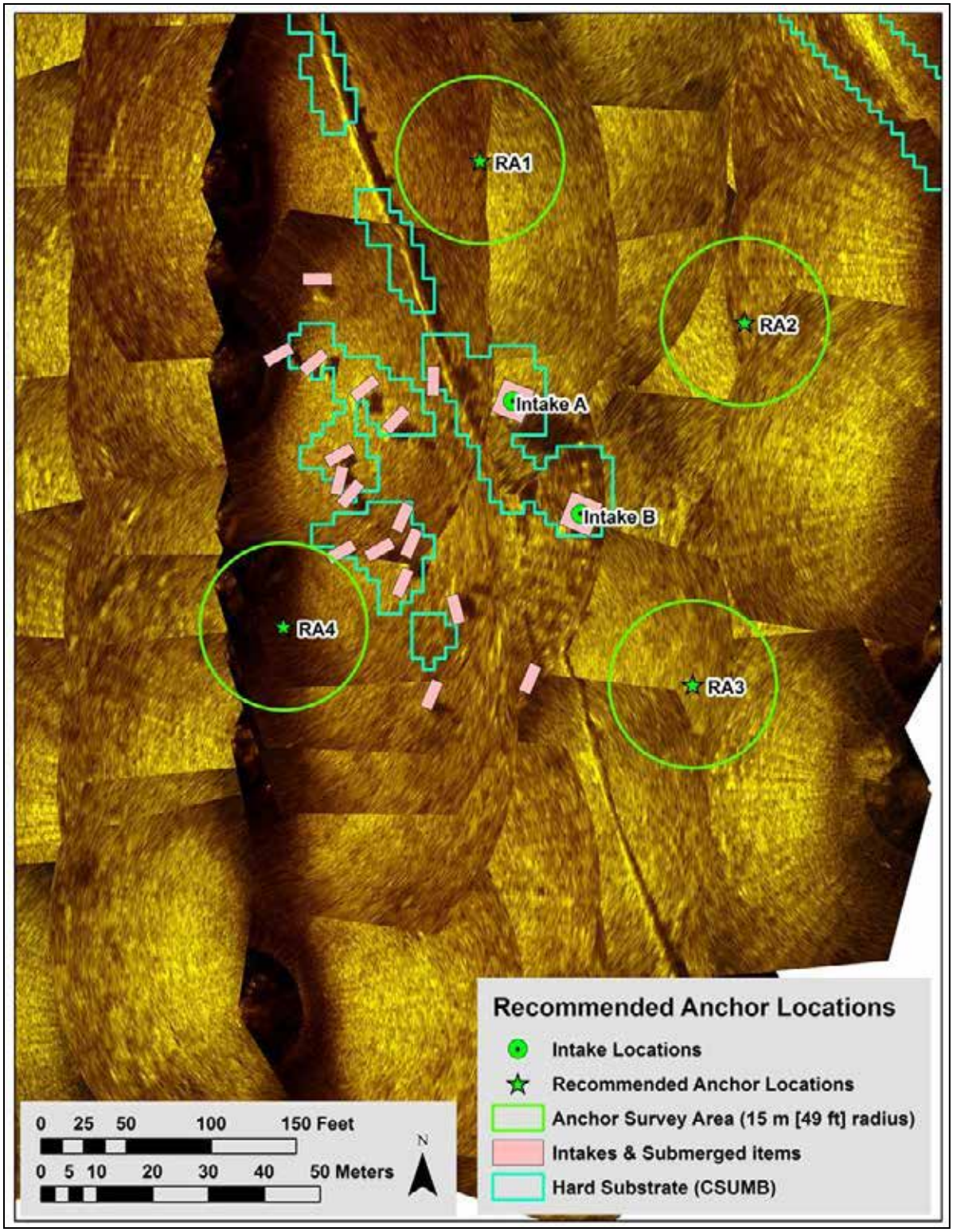

Figure 3. Composite of multi-beam sonar images showing the intake locations and recommended anchoring sites for a single four point mooring configuration.

Attachment 3

Archaeological Survey Report City Of Santa Barbara Charles Meyer Desalination Facility In Relation to the State Revolving Fund (SRF) Grant (Dudek 2014a)

ARCHAEOLOGICAL SURVEY REPORT

CITY OF SANTA BARBARA
CHARLES MEYER DESALINATION FACILITY
IN RELATION TO
THE STATE REVOLVING FUND (SRF) GRANT
SANTA BARBARA, CALIFORNIA

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USGS Santa Barbara California 7.5 Minute Quadrangle

December 2014
REVISED

TABLE OF CONTENTS

Section **Page No.**

SUMMARY OF FINDINGS iii

1.0 INTRODUCTION 1

2.0 PROJECT LOCATION AND DESCRIPTION 1
2.1 APE Locations 12
2.2 Proposed Project Description 13

3.0 SOURCES CONSULTED 18
3.1 Cultural Resources Records Search 18
3.2 Native American Consultation 22

4.0 BACKGROUND 23
4.1 Environment 23
4.2 Ethnography 25
4.3 Prehistory 26
4.4 History 27

5.0 CULTURAL RESOURCES ASSESSMENT 28

6.0 STUDY FINDINGS AND CONCLUSIONS 30

7.0 OTHER RESOURCES 30

8.0 REFERENCES 31

LIST OF FIGURES

Figure 1 Regional Vicinity 2
Figure 2 Project Site Location 3
Figure 3a APE-Filter Feed Pump Station and Chemical Storage Area..... 4
Figure 3b APE-Charles Meyer Desalination Plan..... 5
Figure 3c APE- Power Distribution Site Plan and Substation..... 6
Figure 3d APE- Effluent Sampler Station..... 7
Figure 3e APE- Outfall Mixing Box Improvements..... 8
Figure 3f APE- Padre Street Pump Station..... 9
Figure 3g APE- Offshore Intakes and Weir Box 10
Figure 3h APE- Outfall Mixing Box..... 11
Figure 3i APE- El Estero Wastewater Treatment Plant Temporary Internal Access 17

LIST OF TABLES

Table 1 Previously Recorded Cultural Resources within 1-mile of the Components 1-3 and 5 APE..... 20
Table 2 Previously Recorded Cultural Resources Within 0.5-mile of the Component 4 APE 21

LIST OF APPENDICES

Appendix A Cultural Resources Records Search (Confidential, Bound Separately)
Appendix B Native American Consultation

SUMMARY OF FINDINGS

The City of Santa Barbara, Public Works Department proposes to reactivate and operate the Charles Meyer Desalination Facility, within the City of Santa Barbara. The five separate components of the proposed Project include: Component 1, Desalination Facility Filter Feeder Pump Station and Chemical Storage Area, 420 Quinientos Street; Component 2, Desalination Facility, 525 East Yanonali Street; Component 3, El Estero Wastewater Treatment Plant (EEWTP) Southern California Edison Substation and Outfall Mixing Box, 520 East Yanonali Street; Component 4, Padre Pump Station, 310 West Padre Street; and Component 5, Offshore Intake Facilities including the Beach Weir Box, offshore and on East Beach. Dudek prepared this Archaeological Survey Report to document any cultural resources that might be affected by the repair, construction, maintenance, and/or upgrading of proposed Project components.

Archaeological literature and records searches were conducted at the California Historical Resources Information System at the Central Coastal Information Center, University of California, Santa Barbara for the proposed project on August 20, 2014 and December 16, 2014. The CCIC identified 319 previous cultural resource studies that have been undertaken within one mile of Components 1-3 and 5, and 83 previous cultural resource studies undertaken within 0.5 mile of Component 4; some of the studies have been completed for EEWTP upgrades directly adjacent to portions of the APE. The CCIC identified 14 archaeological resources within one mile of Components 1-3 and 5, and 15 archaeological resources within 0.5 mile of Component 4; no recorded archaeological resources are identified within the APE. Most of these recorded resources have been destroyed as a result of previous urbanization and/or construction activity.

All but one of the proposed Project components was located within an estuary that extended within the present day Lower Eastside Santa Barbara neighborhood. Construction plans associated with the existing El Estero Wastewater Treatment Plant dating to 1973 indicate that between 5.5 to 8 feet of fill was placed within the proposed Project APE to achieve the existing finished grade elevation between 10 and 11 feet above sea level (ASL) for flood control purposes. Temporary construction access and equipment storage and material laydown areas are all within existing paved areas. Because of the absence of recorded

archaeological resources within the proposed Project Area of Potential Effect (APE) and substantial previous disturbances resulting from urbanization, there is no potential for prehistoric or historic archaeological resources within the proposed Project APE Permanent Area of Direct Impacts (ADI). As temporary construction access and equipment storage and material laydown areas are all within existing paved areas, there is no potential for prehistoric or historic archaeological resources within the proposed Project Temporary ADI.

If unexpected, redeposited, buried cultural materials are encountered during construction, work should stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. If human remains are unearthed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resources Code Section 5097.98.

1.0 INTRODUCTION

The City of Santa Barbara, Public Works Department, proposes to reactivate and operate the Charles Meyer Desalination Facility. Repair, construction, maintenance, and upgrades will occur at five locations, including: 420 Quinientos Street; 525 and 520 East Yanonali Street; 310 West Padre Street; and offshore/onshore of East Beach (Figures 1 and 2). The Project Area of Potential Effect (APE) (see Figures 3a–3h) includes construction zones representing Permanent Areas of Direct Impact (ADI) where excavations will take place. The APE also includes all Temporary ADI including construction equipment staging and lay down areas used for placement of cranes and storage of construction materials, and temporary Access Routes. The Temporary Staging Areas and Temporary Access Routes represent all areas in which potential indirect effects could occur.

Federal funding is proposed to support in part secondary treatment process improvements. Therefore, this project is subject to Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations found in 36 CFR 800, which require federal agencies to take into account the effects of their projects on historic properties.

This report documents the background research, Native American consultation, and archaeological survey conducted for the proposed project. The report was prepared by Dudek archaeologist David Stone, M.A., RPA. Mr. Stone has over 30 years' experience in central and southern California.

2.0 PROJECT LOCATION AND DESCRIPTION

The proposed Project area is located in Sections 17 and 23 of Township 4 North, Range 27 West, of the Santa Barbara, California U.S. Geological Service (USGS) 7.5' topographic quadrangle, within the City of Santa Barbara (see Figures 1 and 2).

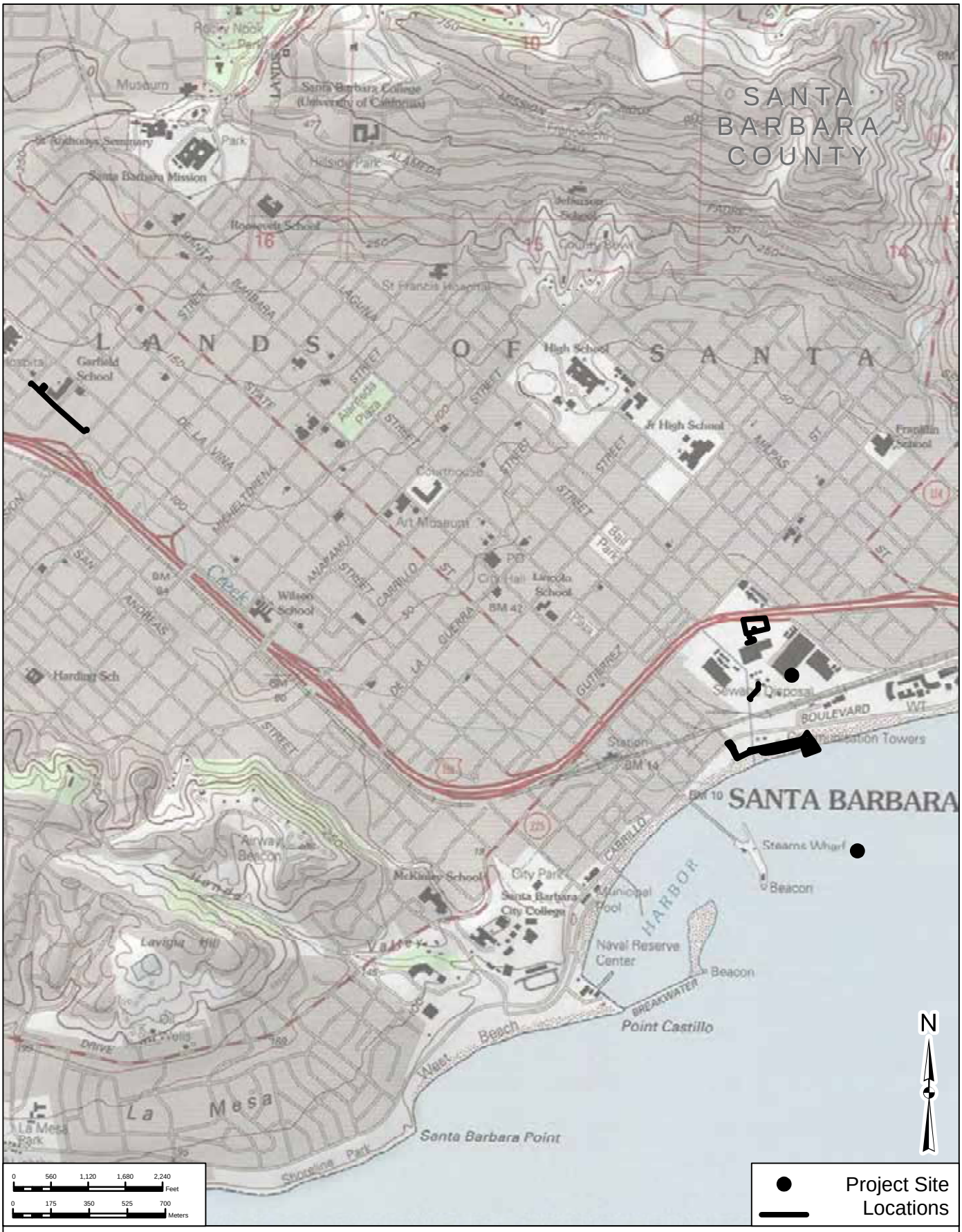
Proposed improvements would occur separately, though they are being assessed concurrently. Ground disturbances associated with each project are identified below.

DUDEK

FIGURE 1

Regional Vicinity

City of Santa Barbara Charles Meyer Desalination Plant Reactivation



SOURCE: USGS Topo 7.5 Minute Series - Santa Barbara Quadrangle
Township 4N/Range 27W/Section 17 & 23

DUDEK

FIGURE 2

Project Site Location

City of Santa Barbara Charles Meyer Desalination Plant Reactivation

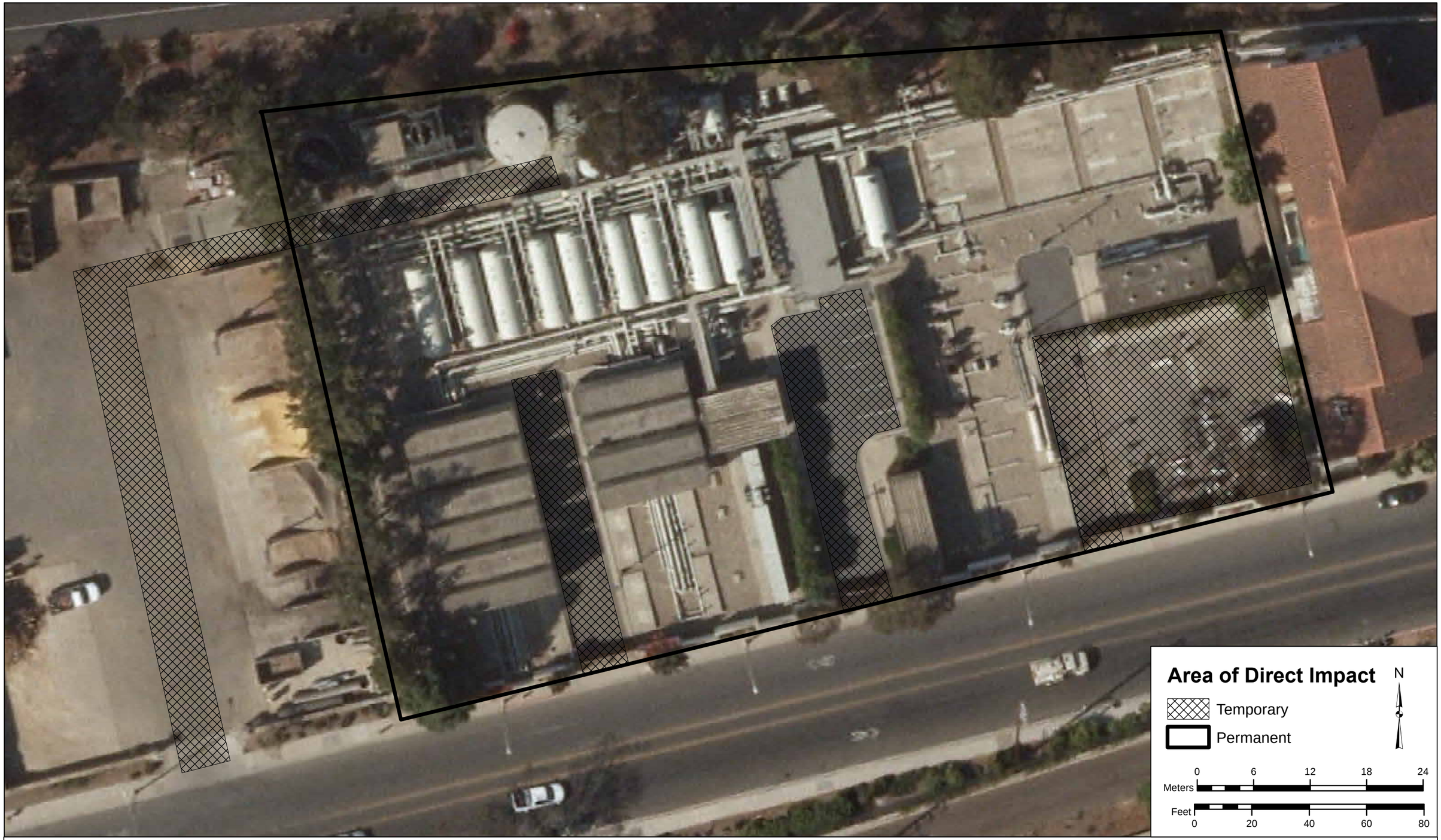
DUDEK

SOURCE: BING Maps Aerial 2013

FIGURE 3a

Area of Potential Effect

Filter Feed Pump Station & Chemical Storage Area (El Estero Water Treatment Plant)



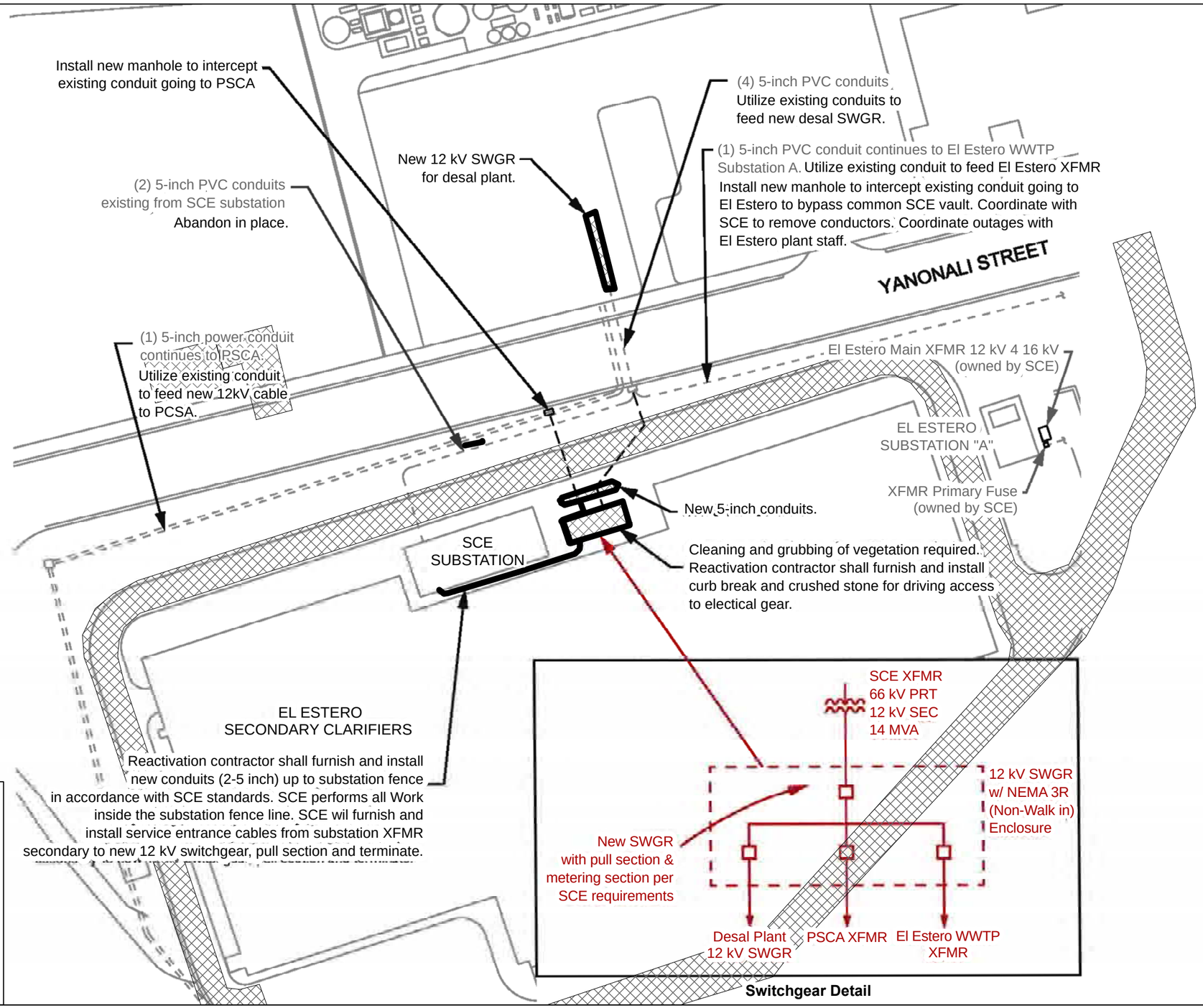
DUDEK

SOURCE: BING Maps Aerial 2013

FIGURE 3b

Area of Potential Effect

Charles Meyer Desalination Plant (525 Quinientos Street)



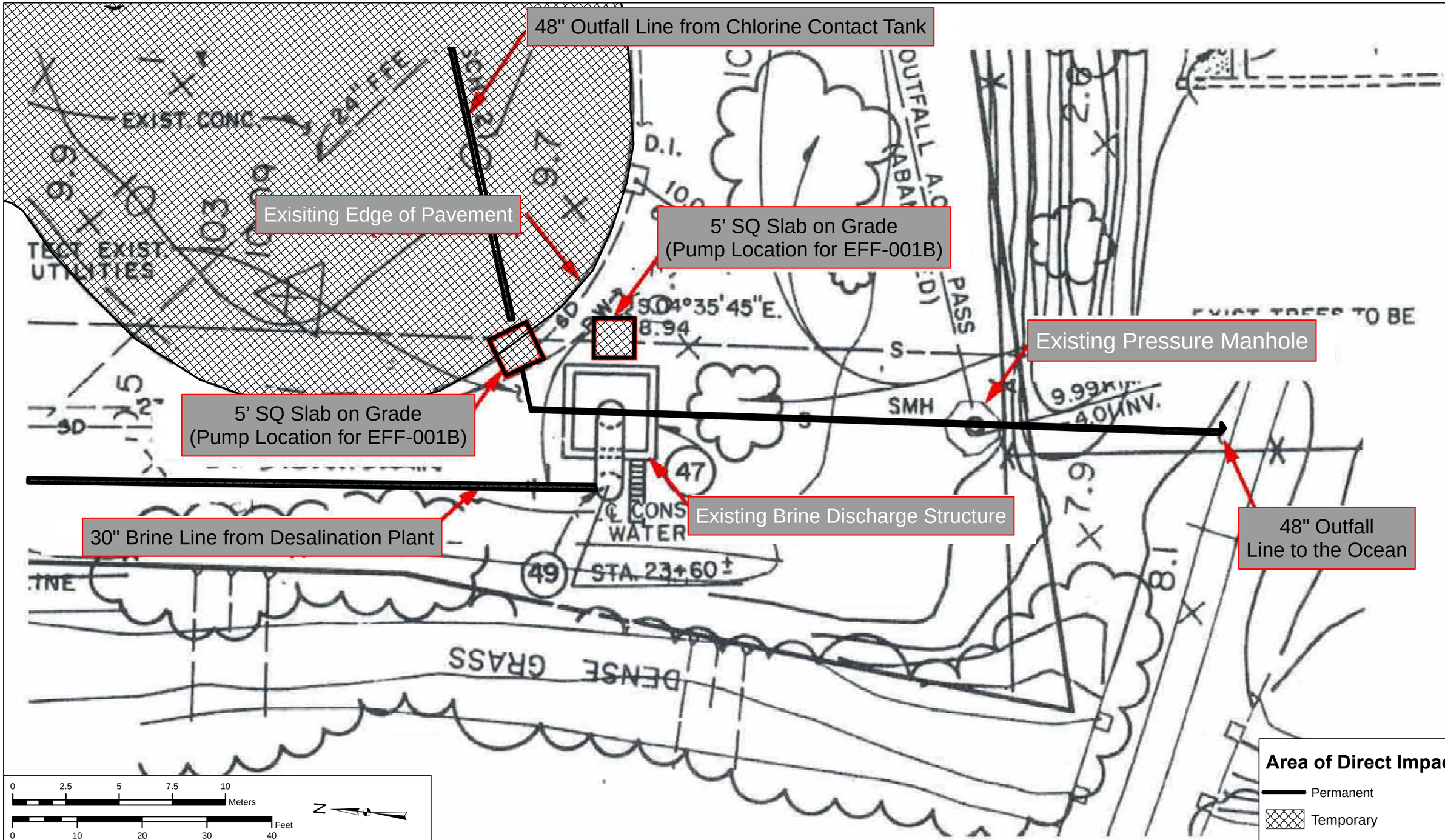
DUDEK

SOURCE: Carollo

FIGURE 3c

Area of Potential Effect

Power Distribution Site Plan and Substation (El Estero Wastewater Treatment Plant)



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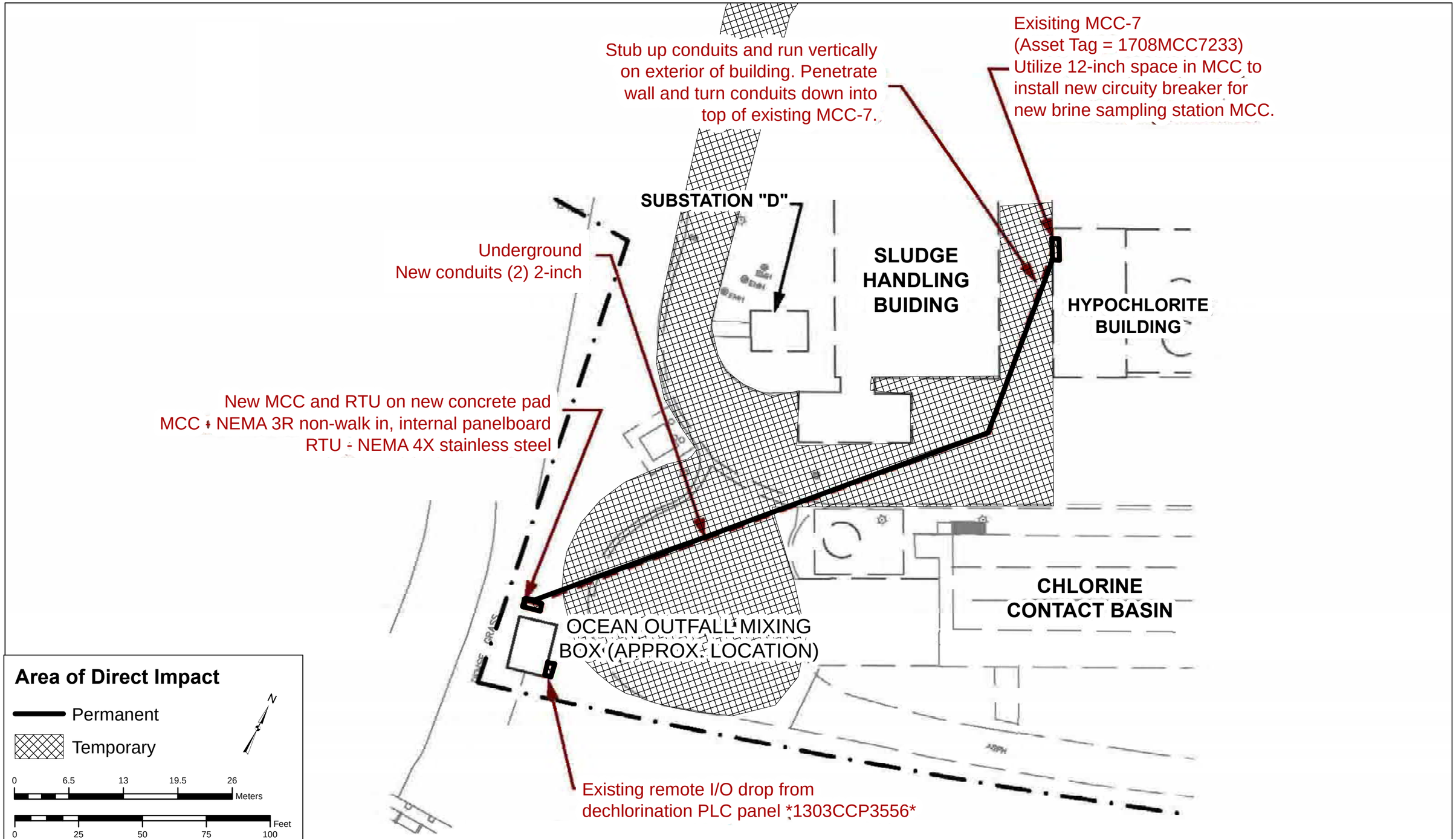
SOURCE: Carollo

FIGURE 3d

Area of Potential Effect

Effluent Sampler Station (El Estero Wastewater Treatment Plant)



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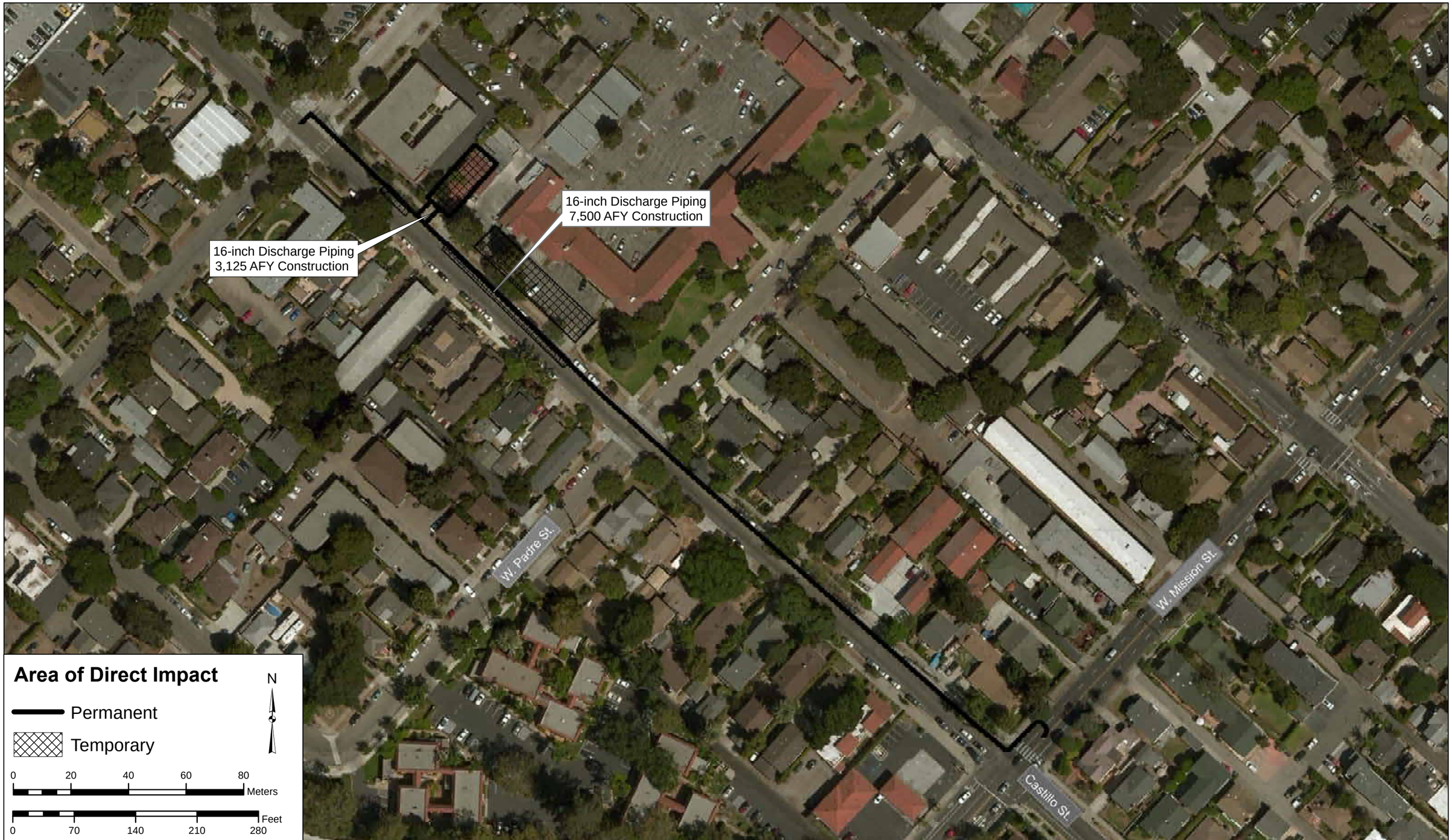
SOURCE: Carollo

FIGURE 3e

Area of Potential Effect

Outfall Mixing Box Improvements (El Estero Wastewater Treatment Plant)



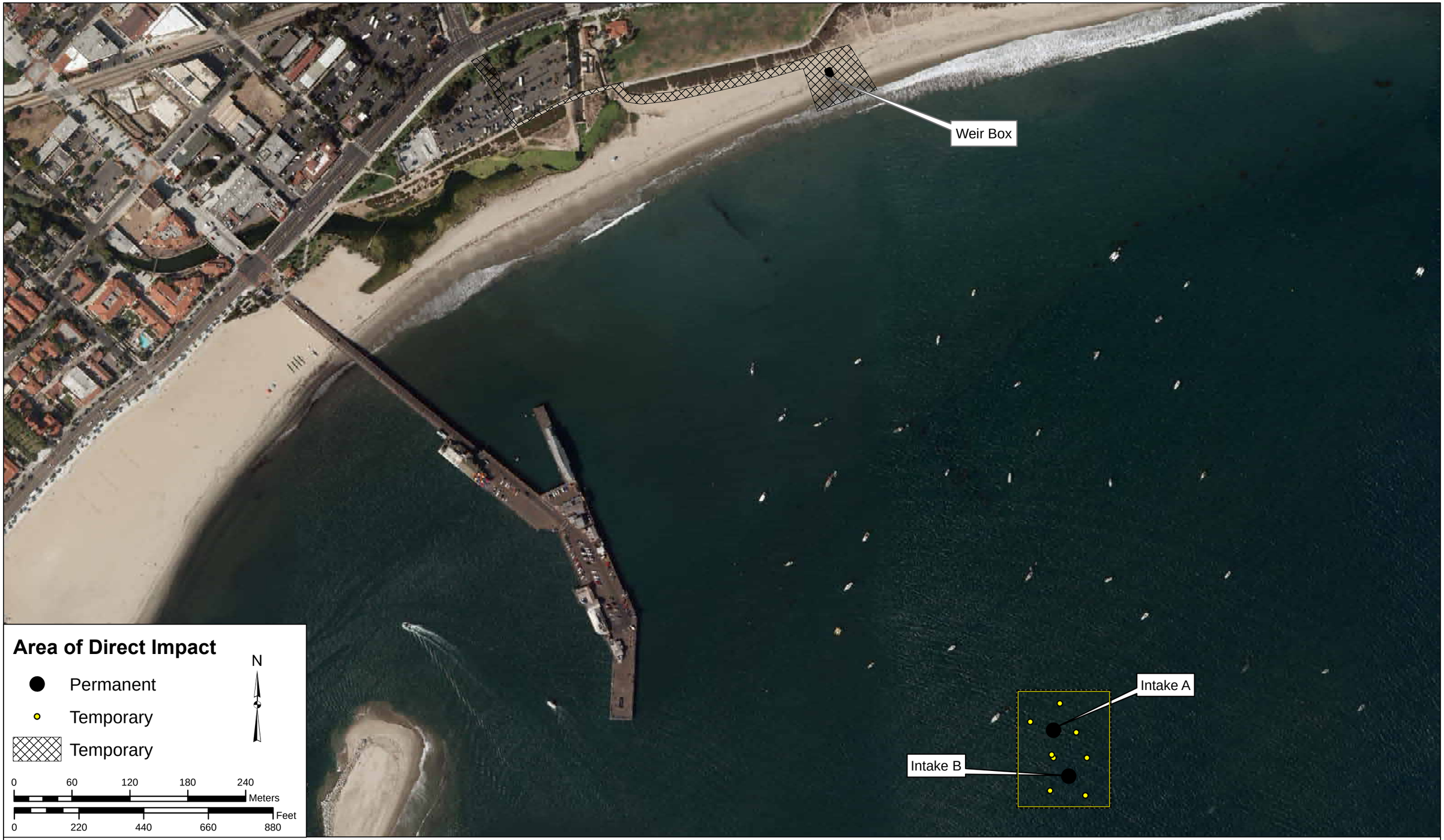
DUDEK

SOURCE: BING Maps Aerial 2013

FIGURE 3f

Area of Potential Effect

Padre Street Pump Station



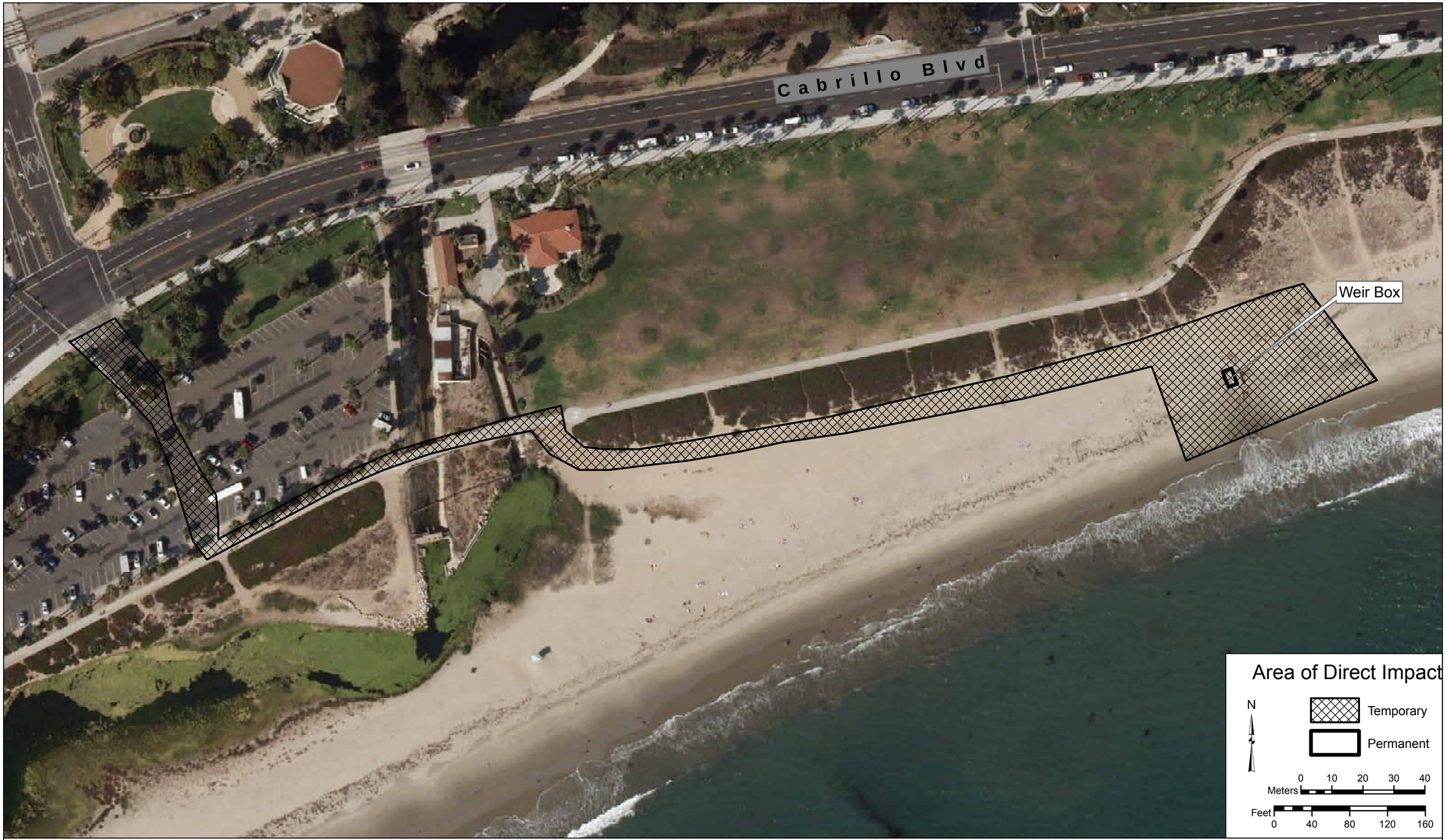
DUDEK

SOURCE: 2012 CIRGIS Aerial, Dudek (2014) High Tide Line 11-14-2014

FIGURE 3g

Area of Potential Effect

Offshore Intakes and Weir Box



SOURCE: BING Maps Aerial 2013

DUDEK

FIGURE 3h

Area of Potential Effect

Outfall Mixing Box (El Estero Wastewater Treatment Plant)

The proposed Project includes offshore, onshore (beach), and inland components that would facilitate the reactivation and operation of the Charles Meyer Desalination Facility. Repair, construction, maintenance, and upgrades will occur at five locations, including at 420 Quinientos Street (Component 1 – Desalination Facility Filter Feed Pump Station and Chemical Storage Area), 525 East Yanonali Street (Component 2 - Desalination Facility), 520 East Yanonali Street (Component 3 – El Estero Wastewater Treatment Plant [EEWWTP] Southern California Edison [SCE] Substation and Outfall Mixing Box), 310 West Padre Street (Component 4 – Padre Pump Station), and offshore/onshore (Component 5 – Offshore Intake Facilities Including the Beach Weir Box), as shown in Figure 2. The ASR supports the City's application to the California Department of Public Health (CDPH) Safe Drinking Water State Revolving Fund Federal Cross-cutting Environmental Regulations Applicability Evaluation Checklist for Federally Designated Agency Coordination.

2.1 APE Locations

Component 1 - 420 Quinientos Street - Filter Feed Pump Station and Chemical Storage Area

The filter feed pump station is located within the southeast portion of the existing EEWWTP property at 420 Quinientos Street (see Figure 3a). The main access to the filter feed pump station is from Quinientos Street. The filter feed pump station is bordered by railroad tracks to the south and is located within the industrial EEWWTP facility.

Component 2 - 525 East Yanonali Street - Desalination Facility

The existing desalination facility is located immediately north of the EEWWTP, at 525 East Yanonali Street (see Figure 3b).

Component 3 - 520 East Yanonali Street - EEWWTP SCE Substation, Brine Effluent Sampling Station, and Outfall Mixing Box

The existing EEWWTP SCE substation is located south of the desalination facility, at 520 East Yanonali Street (see Figure 3c). The substation is located within the northern portion of the EEWWTP property, while the brine effluent sampling station (see Figure 3d) and outfall mixing box (see Figure 3e) is located within the southwest corner of the EEWWTP property.

Component 4 - 310 West Padre Street - Padre Pump Station

The existing Padre Pump Station is located along the east side of Castillo Street between West Los Olivos Street and West Mission Street (see Figure 3f).

Component 5 - Offshore Intake Facilities Including the Beach Weir Box

The offshore portions of the Project are located offshore of East Beach and southeast of the terminus of Stearns Wharf (see Figure 3g). The ocean intake consists of two offshore concrete intake structures (A) and (B) that are designed to accommodate intake pumps, check valves, and intake screens. The entire offshore intake structure complex is located below sea level at an approximate depth of 30 feet (5 fathoms). An existing brine discharge line is located approximately 8,720 feet offshore southeast of the intake structures in a shared outfall with the EEWWTP. The weir box is located directly south of east Cabrillo Boulevard on the public Santa Barbara East Beach (see Figure 3h).

2.2 Proposed Project Description

Project repair, construction, maintenance, and upgrades are described as five separate components, below.

The APE consists of the entire project activity areas (see Figures 3a – 3i). The APE includes permanent and temporary work areas—the permanent work areas are those where excavations will take place, or Area of Direct Impact (ADI Permanent); temporary work areas will be used for placement of equipment and storage of construction materials (ADI Temporary). The vertical APE includes excavations up to 70 feet deep for foundation pilings.

Component 1 - 420 Quinientos Street - Filter Feed Pump Station and Chemical Storage Area (APE Figure 3a)

ADI Permanent: The chemical storage facility has been maintained under the City's long-term desalination plant standby program. However, some filter feed pump station and chemical storage facility equipment will need to be serviced and replaced as part of the reactivation of the Desalination Facility. These activities may involve the repair, construction, maintenance, upgrades, excavation, or other work not yet defined. Once seawater is pumped from the

offshore intakes through the pipe to the filter feed pump station, it is then pumped through a pipeline beneath the EEWWTP to the Desalination Facility located at 525 East Yanonali Street.

ADI Temporary: As stated above, temporary access to this project component construction site will be provided by directly from Quinientos Street. A temporary equipment and material staging area is located within a paved parking lot area immediately northeast of the Filter Feed Pump Station directional bore pit pig launch station (see Figure 3a).

Component 2 - 525 East Yanonali Street - Desalination Facility (APE Figure 3b)

ADI Permanent: When the plant was placed into standby mode as noted above, the existing reverse osmosis membranes and filter media were removed; and the piping, tanks, and vessels were drained and cleaned. The remaining equipment has been maintained under the long-term storage program. As part of the reactivation of the Desalination Facility, it is expected that any replacement or upgraded equipment and/or structures will occur in the same location for a similar use and be of similar size and height as identified on the site plan for Coastal Development Permit (CDP) 4-96-119 approving the Desalination Facility as a permanent use.

Much of the existing equipment that has been maintained at the Desalination Facility will likely be serviced and brought back on-line after testing/evaluation. In some cases, due to the age of the equipment, changes in technology, and/or lack of availability of replacement parts, it may be necessary to replace existing equipment with new (and generally more efficient) parts and or equipment.

There are three components of the Desalination Facility that will require replacement/upgrades regardless of other Desalination Facility considerations (see Figure 3b). These components are:

- Electrical panels, switch boxes and other electrical system components that have deteriorated with age and/or have been damaged by an electrical surge event that occurred after the Desalination Facility was operated, but before the electrical gear was de-energized during the long term standby program;
- Instrumentation and control systems, including computer software and hardware due to significant changes in computer technology and lack of technical support for the existing

system; and

- Reverse osmosis membrane and pumping systems may be replaced with newer technology, but likely be located within equipment trailers as originally presented in the approved site plans associated with CDP 4-96-119.

Notwithstanding these minor changes in equipment, the desalination/reverse osmosis process described in CDP 4-96-119 would be unchanged. Processed raw seawater that is transported via the Desalination Facility's offshore intakes occurs onshore at the Desalination Facility.

ADI Temporary: Temporary construction access to the Desalination Facility will be from several existing driveways fronting Quinientos Street and one from the adjacent paved parking area immediately west of the existing facility (see Figure 3b). Temporary staging for construction equipment and materials will occur within the southeast corner of the existing Desalination facility (see Figure 3b).

Component 3 - 520 East Yanonali Street - EEWWTP SCE Substation, Brine Effluent Sampling Station, and Outfall Mixing Box (APE Figures 3c, 3d, and 3e)

ADI Permanent: Brine is discharged from the desalination plant to a brine mixing basin located in the southwest corner of the EEWWTP property. The structure is used to mix brine with effluent before the co-mingled flows discharge to the City's ocean outfall. No structural changes are proposed for the existing brine mixing basin. The City's existing CDP and National Pollution Discharge Elimination System (NPDES) permits include conditions regarding the discharge of brine from the Desalination Facility, with which the Desalination Facility will comply. As a component of this compliance, a brine effluent sampling station will be constructed in near proximity to the existing mixing basin and made operational prior to the reactivation of the Desalination Facility. The existing mixing basin has functioned as the sampling station while the Desalination Facility has been in standby mode. Additional flow metering equipment and communications will also be added.

Plant facility piping and electrical distribution banks run underground through several corridors of the Desalination Facility and EEWWTP sites, and to the Pacific Ocean (see Figure 3c, 3d, 3e).

The piping and distribution banks include intake water piping, brine water piping, and product water piping, as well as conduit for power and plant control communication. Some replacement of power and communication cable is anticipated due to age and exposure. The replacement will be accomplished from existing access points (i.e., previously installed pull boxes).

ADI Temporary: Temporary construction access to the project component area will be provided by existing paved EEWWTP internal driveways (see Figure 3c, 3d, 3e, and 3i). Temporary equipment and materials storage will occur within the existing EEWWTP facility (see Figure 3c, 3d, and 3e).

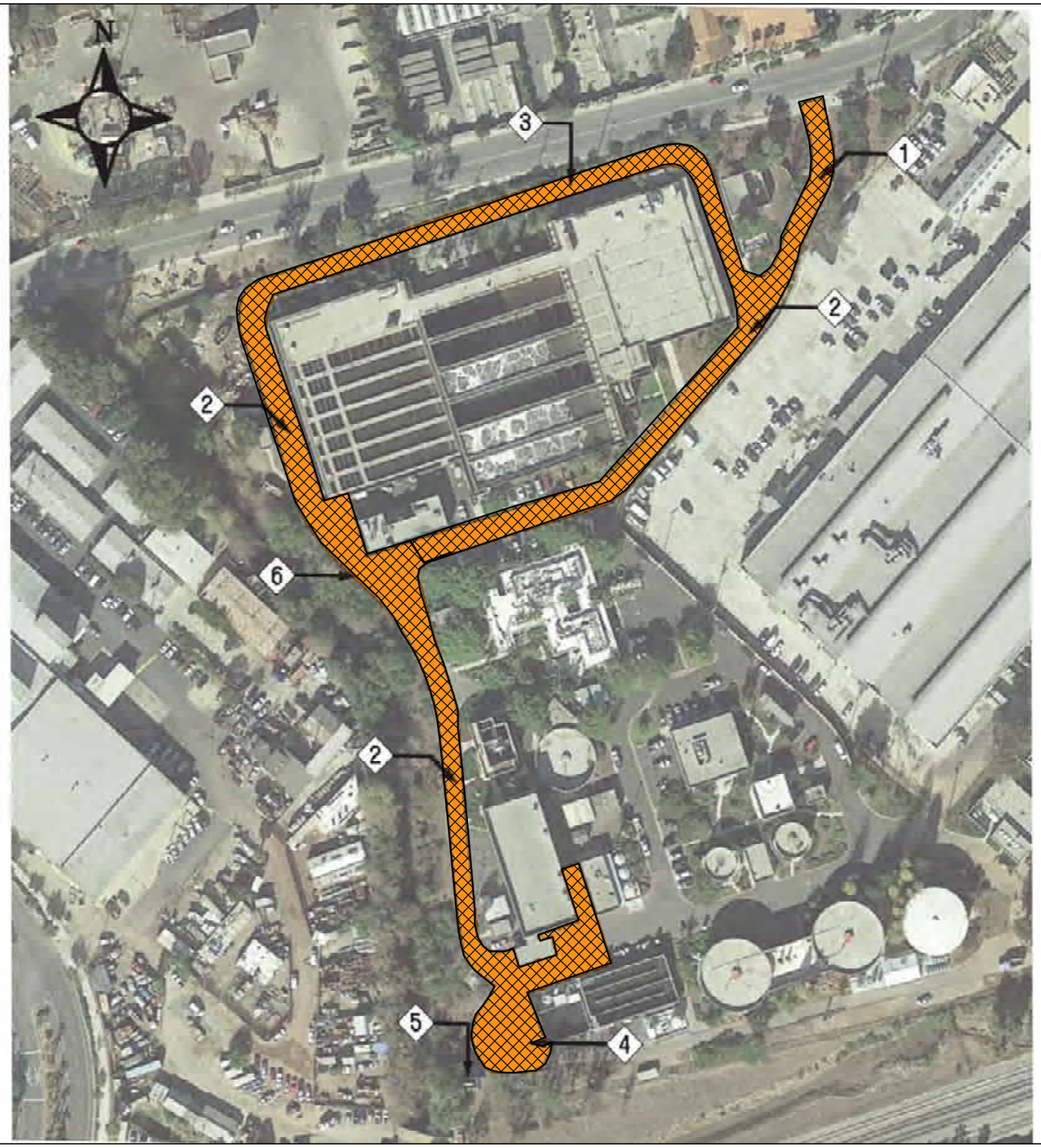
Component 4 - 310 West Padre Street - Padre Pump Station (APE Figure 3f)

ADI Permanent: Padre Pump Station upgrades include replacing buried piping, converting Padre Well to a monitoring well, replacing existing entrance gate, installing new suction side piping, separating exiting Padre Well discharge piping (see Figure 3f).

ADI Temporary: Temporary construction access to the Padre Station will be provided by the existing facility entrance on Castillo Street. Construction of the 16-inch discharge pipe along Padre Street will be accessed directly from this roadway as well (see Figure 3f). Temporary equipment and materials storage will occur within two areas of the paved Castillo Street roadway, and an existing paved parking lot immediately north of Castillo Street within the Santa Barbara City College Schott Center Campus (see Figure 3f).

Component 5 - Offshore Intake Facilities Including the Beach Weir Box (APE Figure 3g)

ADI Permanent: The offshore portions of the Desalination Facility are located offshore of East Beach and southeast of the terminus of Stearns Wharf in the City of Santa Barbara (see Figure 3g). The ocean intake consists of two offshore concrete intake structures that are designed to accommodate intake pumps, check valves, and intake screens. The intake pipeline continues inside the abandoned outfall to a raw water booster pump station, located onshore at 420 Quinientos Street. Prior to reaching the booster pump station, the intake pipeline connects to an outfall weir box on the beach. The weir box serves as a transition point for power and communication wires for the offshore intake pumps. These wires transition from inside the 36-



General Notes:

1. Limited access areas are accessible to the DBO Entity upon request to the City.
2. All other areas of the El Estero WWTP site are considered restricted unless designated otherwise.
3. Construction access road shall provide access to the areas of the Work. This road shall be shared with other contractors, City staff, and other designated personnel. A minimum 20-ft lane shall be maintained at all times. At no time shall this road be obstructed by equipment or vehicles.
4. East side of property is a Riparian Protection Area. Implement BMPs.

Key Notes:

1. All construction traffic shall enter site from this gate. Other entrances shall not be used without permission from the City.
2. Construction access road. See General Note 3.
3. Parking area along north side of roadway: 9ft wide x 460ft long.
4. FOG delivery area.
5. Outfall Mixing Box
6. Electrical Pull Box #2, refer to PDR Figure 4.32.

Area of Direct Impact

Temporary

N

Meters 0 20 40 60 80

Feet 0 75 150 225 300

DUDEK

SOURCE: Carollo

FIGURE 3i

Area of Potential Effect

El Estero Wastewater Treatment Plant Interior Temporary Access

inch HDPE piping to a duct bank that continues along the intake pipe alignment to the filter feed pump station at 420 Quinientos Street, which is located on the site of the EEWWTP.

ADI Temporary: Temporary construction access to the offshore intake facilities will be by boat within the Santa Barbara Channel (see Figure 3g). Four potential anchoring locations on the channel bottom immediately adjacent to each of the existing intake facilities will be used to secure vessels used to for transport of construction materials (see Figure 3g). Temporary construction access to the existing Weir Box on East Beach will be provided by the existing paved City Cabrillo Boulevard Parking Lot, the paved East Beach bicycle and pedestrian trail, and eastward along the sandy East Beach (see Figure 3h). Temporary equipment and materials storage will occur on East Beach sands immediately adjacent to the existing Weir Box facility (see Figure 3h).

3.0 SOURCES CONSULTED

This section describes the methods and results of the records search conducted at the regional Information Center for the California Historical Resources Information System (CHRIS); presents results of literature review; and summarizes correspondence with the Native American Heritage Commission and Native Americans regarding the proposed project.

3.1 Cultural Resources Records Search

An archaeological site records and literature search of the California Historical Resources Information System (CHRIS) Central Coast Information Center (CCIC), University of California, Santa Barbara, was conducted on August 20, 2014 by Jessika L. Akmenkalns, CCIC Assistant Coordinator, to identify all recorded archaeological sites within one mile, including reviewing the inventories of the OHP Historic Properties Directory, the OHP Archaeological Determinations of Eligibility, and the CA Inventory of Historic Resources of the following proposed components:

- Component 1 - 420 Quinientos Street - Desalination Facility Filter Feed Pump Station and Chemical Storage Area
- Component 2 - 525 East Yanonali Street - Desalination Facility

- Component 3 - 520 East Yanonali Street - EEWWTP SCE Substation, Brine Effluent Sampling Station, and Outfall Mixing Box
- Component 5 - Offshore Intake Facilities Including the Beach Weir Box

The records search identified all known archaeological sites, historic resources, within all of the project Components APEs listed above, including a one- mile buffer distance, and any previous cultural resource surveys documented within the project site (see Appendix A).

The CCIC records indicated that 319 previous cultural resource studies have been undertaken within one mile of the proposed Project components, none of which were completed within the APE. Fourteen cultural resources have been previously recorded within the one mile of the proposed Project components (see Table 1). Of the 14 resources identified within one mile of the proposed Project components, five are prehistoric archaeological sites, six are historic archaeological sites, two are multi-component archaeological sites (i.e., they contain both prehistoric and historic elements), and one is the historic Albert Hayman Cottage (located at 212 Palm Avenue) which was determined eligible for the NRHP. All of these resources are located well outside of the project APE and would not be affected by the proposed undertaking. Additionally, most of the sites summarized in Table 1 have been destroyed as a result of urbanization, various construction projects, or coastal erosion.

A subsequent archaeological site records and literature search of the CCIC was conducted on December 16, 2014 by Lucas Nichols, Dudek Staff Archaeologist, to identify all recorded archaeological sites within 0.5-mile of the Component 4 - 310 West Padre Street, Padre Pump Station (see Table 2).

Table 1. Previously Recorded Cultural Resources within 1 mile of the Components 1-3 and 5 APE					
Primary Number	Trinomial	Resource Description	Recorded By/Year	NRHP Eligibility Status	Proximity to APE
—	CA-SBA-27	Prehistoric: habitation site with burials	Rogers, D.B. 1923; Charthoff and Kona 1967	Site is no longer extant	Outside
—	CA-SBA-28	Multicomponent: prehistoric habitation site with burials (possible former Chumash village of Siuhtun) and historic adobe house foundations	Rogers, D.B. 1923; Charthoff and Kona 1967	Site is no longer extant	Outside
—	CA-SBA-29	Prehistoric: habitation site with burials	Rogers, D.B. 1929	Site is no longer extant	Outside
—	CA-SBA-30	Multicomponent: prehistoric habitation site with burials (village of Mispu) and possible location of historic Spanish cannon emplacement	Rogers, D.B. 1929	Site likely destroyed by construction	Outside
—	CA-SBA-31	Prehistoric: habitation site with burials	Rogers, D.B. 1929	Site likely destroyed by construction	Outside
42-001958	CA-SBA-1958	Prehistoric: lithic and shell scatter	Macko and Rhodes 1985	Site likely destroyed by construction	Outside
42-002388	CA-SBA-2388H	Historic: refuse deposit and brick cistern	McDowell et al. 1990	Site likely destroyed by construction	Outside
42-002421	CA-SBA-2421H	Historic: retaining wall for the former Dibblee/Leadbetter estate Punta de Castillo	Toren and James 1991	Unknown	Outside
42-002576	CA-SBA-2576H	Historic: adobe foundations	Toren, G. 1992	Unknown	Outside
42-003626	CA-SBA-3626	Prehistoric: lithic and shell scatter	Texier, B. 2001	Unknown	Outside
42-003999	CA-SBA-3999H	Historic: refuse deposits	Bass, B. 2010	Unknown	Outside
42-004048	CA-SBA-4048H	Historic: refuse deposits	Colleen, H. et al. 2012	Unknown	Outside
42-004049	CA-SBA-4049H	Historic: refuse deposit	Warren, K. 2012	Unknown	Outside
42-040456	—	Historic: Albert Hayman Cottage	Unknown	Determined eligible for NRHP	Outside

Table 2. Previously Recorded Cultural Resources Within 0.5-mile of the Component 4 APE					
Primary Number	Trinomial	Resource Description	Recorded By/Year	NRHP Eligibility Status	Proximity to APE
42-000023	CA-SBA-23	Prehistoric: habitation site with lithic scatter	Rogers, D.B. 1929; Charthoff and Kona 1967	Site is no longer extant on surface	Outside
42-000025	CA-SBA-24	Prehistoric: habitation site	Rogers, D.B. 1929; Charthoff and Kona 1967	Site is no longer extant	Outside
42-002357	CA-SBA-2357	Multicomponent: prehistoric low density midden and artifact scatter. Bottle glass and glazed earthenware ceramics found on surface.	Wilcox, Larry 1988	Site likely destroyed by construction	Outside
42-003684	CA-SBA-3684	Prehistoric: lithic scatter	Carbone, L. 2002	Unknown	Outside
42-003743	CA-SBA-3743	Unknown	Unknown	Unknown	Outside
42-040171	---	Historic: Hall house	Conard, Rebecca 1981	Determined eligible for NRHP	Outside
42-040172	---	Historic: Meigs House, Rasmussen House	Nelson, Chris 1981	Determined eligible for NRHP	Outside
42-040173	---	Historic: Myers House, Froelich House	Conard, Rebecca 1981	Determined eligible for NRHP	Outside
42-040174	---	Historic: Leege House	Nelson, Chris 1981	Determined eligible for NRHP	Outside
42-040190	---	Historic: Kenney-True House	Conard, Rebecca 1981	Determined eligible for NRHP	Outside
42-040191	---	Historic: Kirsten House	Conard, Rebecca 1981	Determined eligible for NRHP	Outside
42-040194	---	Historic: Baxter House	Nelson, Chris 1981	Determined eligible for NRHP	Outside
42-040195	---	Historic: Williams House, Querfurth House	Nelson, Chris 1981	Determined eligible for NRHP	Outside
42-040196	---	Historic: Hails House	Nelson, Chris 1981	Determined eligible for NRHP	Outside
42-040961	---	Historic: AT & T Mobility	Crawford, K.A. 2011	Determined ineligible for NRHP	Outside

The records search identified all known archaeological sites, historic resources, within the 0.5-mile distance, and any previous cultural resource surveys documented within the proposed Project component (see Appendix A). In addition, the following inventories were consulted: the OHP Historic Properties Directory, the OHP Archaeological Determinations of Eligibility, and the CA Inventory of Historic Resources of the proposed component.

The CCIC records indicated that 83 previous cultural resource studies have been undertaken within 0.5 mile of the proposed Project 4 component, none of which were completed within the APE. Fifteen cultural resources have been previously recorded within the 0.5 mile of the proposed Project component (see Table 2, page 20). Of the 15 resources identified within 0.5 mile of the proposed Project component, three are prehistoric archaeological sites, one is a multi-component archaeological site (i.e., they contain both prehistoric and historic elements), 10 are historic structures, and one is "unknown." All of these resources are located outside of the project APE and would not be affected by the proposed undertaking. Additionally, most of the archaeological sites described in Table 2 have been destroyed as a result of urbanization or construction activity.

3.2 Native American Consultation

A search of the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) was requested on December 17, 2014 to determine the presence of any Native American cultural resources within the proposed project area (see Appendix B). Katy Sanchez, NAHC Associated Government Program Analyst, responded to this request in a letter dated December 31, 2014, and transmitted on January 5, 2014 (see Appendix B). The search of the SLF determined that no sacred lands are present in the proposed Project APE.

Memos were sent on February 10, 2015 to the 28 local Chumash contacts identified by the NAHC who might have knowledge of previously undocumented Native American cultural resources within the proposed project area (see Appendix B). Follow-up phone calls were made to each of the 28 Native American contacts on February 17, 2015 who had not yet responded to the memo. Table 1 in Appendix B summarizes this consultation. Responses include the following:

- Freddie Romero, Cultural Preservation Consultant, Santa Ynez Chumash Indian Reservation Elders Council, February 12, 2015. Speaking for the Santa Ynez Chumash Band, Mr. Romero did not identify any concerns with the proposed activity.
- Ernestine DeSoto, Chumash Elder, February 17, 2015. Ms. DeSoto stated that she agreed with the conclusions of the ASR.
- Beverly Salazar Folkes, Chumash/Tatavium/Fernandeño member, February 17, 2015. Ms. Folkes stated that she has no concerns since the proposed project is occurring in previously disturbed areas of already existing facilities.
- Patrick Tumamait, Chumash member, February 17, 2015. Mr. Tumamait stated that he is not very familiar with the area, but suggests having a Native American and Archaeological monitor present during any ground disturbance activities.
- Randy Guzman-Folkes, Chumash member, February 17, 2015. Mr. Guzman-Folkes stated that he has no concerns and elects to defer to local representatives.
- Kathleen Pappo, Barbareño/Ventureño Band of Mission Indians, February 17, 2015. Ms. Pappo stated that she has no concerns and defers to the consensus of the representatives whom have been contacted.
- Steven Miller, February 17, 2015. Mr. Miller's wife stated that "my husband reads everything; if he has a concern, he will contact you. If he hasn't contacted you, that he does not have any concerns."

4.0 BACKGROUND

4.1 Environment

The majority of proposed Project components (Components 1 – 3, and 5) are within the downtown City of Santa Barbara area, on an estuarine deposit formed from erosion of the Santa Ynez Mountains to the north. Existing soils are characterized as "Aquents," fill areas, reclaimed areas of soils resulting from filling low, poorly drained areas near the ocean (USDA 1981). Project APE Components 1 – 3, and 5 fall within the middle of an extensive area extending from the Pacific Ocean coast northeast to the intersection of Figueroa Street and Milpas Street characterized by United States Geologic Survey (USGS) scientists as "Estuarine deposits (Holocene)" (Minor et al. 2009; CDM Smith 2013).

Geological testing completed in 1974, 1975, 1987 and 2013, using solid cores reaching over 70 feet below existing ground surface, have determined that these estuarine deposits consisting of silty clay, sandy clay, loose to medium dense clay, and clayey sand exist up to 65 feet deep (CDM Smith 2013). Below the estuarine deposits exist "Older Marine" deposits consisting of clayey silt, sandy silt, and stiff clay to a depth of at least 73 feet, where further penetration was not possible (CDM Smith 2013). The geologic testing supports the USGS geologic mapping data described above, and indicate that the APE environmental habitat existing throughout the period of prehistoric occupation of the Santa Barbara Channel was a wet, inundated slough area.

Prehistorically, the estuarine habitat area would have supported wetland vegetation including reeds and ground cover such as pickleweed. The slough would have provided a potential migration corridor for medium and large wildlife and fish, as well as birds.

The geologic testing programs described above identified between 8 and 10 feet of fill extending from the existing EEWWTP ground surface. The soils consisted of silty sand, sandy silt, clay, gravel, and debris.

The Preliminary Design Report for improvements to the existing EEWWTP (Engineering - Science, Inc. 1973) dating to 1973 contain the As-Built Plans illustrating the surficial fill soils described above. Sheets C-11, C-12, and C-13 provide grading plans and associated cross-sections indicating that between 5.5 to 8 feet of fill was placed within the APE to achieve the existing finished grade elevation between 10 and 11 feet above sea level (ASL) for flood control purposes.

Component 4 is located in an area with Ballard fine sandy loam. Ballard series soils are formed in alluvium derived from sedimentary rock. The surface layer is dark brown and reddish brown fine sandy loam about 23 inches thick. The subsoil extends to a depth of at least 60 inches and consists of reddish brown loam and reddish brown stony to very stony clay loam.

4.2 Ethnography

At the time of historic contact, the project area was occupied by the Barbareño Chumash, derived from the Mission Santa Barbara founded in 1786, who linguistically belonged to the Chumashan family of the Hokan language family (Shipley 1978). The Barbareño Chumash territory extended from the village of *Shuku*, located on the Santa Barbara County/Ventura County border, westward to Point Conception (Grant 1978; Glassow 1996), and northward from the coast line to the crest of the Santa Ynez Mountains. The Barbareño Chumash shared boundaries with the Purismeño Chumash to the northwest, the Inezeño Chumash to the north, and the Ventureño Chumash to the east.

The Barbareño Chumash, like their neighbors, were matrilocal, based on baptismal, marriage and death registers kept by Franciscan missionaries (Johnson 1988). Specific information on settlement systems based on ethnographic data indicates that villages were headed by chiefs, who controlled wealth as distributed through the shell-bead money economy. At the time of contact, villages of between 800 - 1,000 inhabitants headed by political leaders existed at the confluence of creeks with the Pacific Coast, and surrounding estuaries.

Barbareño Chumash relied extensively on maritime food resources, including shellfish, fish, and sea mammals, through the use of the *tomol*, or plank canoe. Terrestrial resources, large and small game, birds, and rodents were hunted. Acorns were processed, as well as various

seeds including sage. Trade within the Chumash tribes was extensive, including between populations on the Channel Islands, as well as throughout central California.

The Chumash developed a highly sophisticated chiefdom-level of social organization, based on permanent, largely autonomous, villages. Village leaders or chiefs inherited their position (Grant 1978). Intermarriage between villages appears to have been predicated on the desire to establish and maintain liaisons and control of trade routes and resource catchment areas (McLendon and Johnson 1999). Warfare between villages was noted however, resulting from encroachment in adjacent village hunting and gathering areas (Grant 1978), and the dynamic changes in alliances between village leaders (McLendon and Johnson 1999).

4.3 Prehistory

The local Santa Barbara prehistoric chronology is divided into four major periods – Paleoindian, Early Period, Middle Period, and Late Period. It is generally accepted that humans entered the New World during the latter part of the Wisconsin glaciation between 40,000 and 20,000 years before present (B.P.). The earliest unquestioned evidence of human occupation in southern Santa Barbara County is dated to between 10,000 to 8,000 B.P. (Erlandson and Colten 1991). Paleoindian groups during this time focused on hunting Pleistocene megafauna, including mammoth and bison. Plants and smaller animals were undoubtedly part of the Paleoindian diet as well, and when the availability of large game was reduced by climatic shifts near the end of the Pleistocene, the subsistence strategy changed to a greater reliance on these resources.

Discussion of the Early, Middle, and Late periods is based on a fairly well-known chronological sequence developed by Chester King (1981, 1979, 1974) for the Santa Barbara Channel region. However, much less is known about the inland region. Post-Pleistocene changes in climate and environment are reflected in the local archaeological record by approximately 8,000 B.P., the beginning of the Early Period, as defined by Chester King (1981, 1979, 1974). The Early Period of the Santa Barbara Channel mainland was originally defined by Rogers (1929), who called it the "Oak Grove" Period. The diagnostic feature of this period is the mano and metate milling stones, which were used to grind hard seeds such as sage for consumption. Toward the end of the Early Period, sea mammal hunting appears to have supplemented subsistence strategies (Glassow et al. 1990).

The Middle Period (3,350 to 800 B.P.) is characterized by larger and more permanent settlements, related to a generally wetter environment. Materials from Middle Period sites reflect a greater reliance on marine resources and include marine shells, fish remains, and fishhooks. A major shift in vegetable food exploitation occurred, as the mano and metate milling stones were replaced by stone mortars and pestles. This indicates a transition from seed gathering to oak tree acorn gathering and processing, a result of cooler temperatures and more expansive oak woodland habitats. Toward the end of this period, the plank canoe was developed, making ocean fishing and trade with the Channel Islands safer and more efficient (Arnold 1987). Terrestrial resources continued to be exploited as evidenced by the

presence of contracting-stemmed and corner-notched projectile points from Middle Period sites (Bamforth 1984).

The Late Period (800 to 150 B.P. or approximately A.D. 1150 to 1800) was a time of increased social and economic complexity. The increased number of permanent and semi-permanent villages clustered along the Santa Barbara Channel and on the Channel Islands, and the diversity of environmental site settings in which sites have been identified, indicates a substantial increase in prehistoric population. Intensification of terrestrial as well as marine resources occurred. Acorns continued to be processed, and land mammals were hunted with the bow and arrow, rather than exclusively by spear. Trade networks, probably controlled by village chiefs, expanded and played an important part in local Chumash culture, reinforcing status differences and encouraging craft specialization. Shell beads, found throughout the Early and Middle Periods, increased in number and variety, related to status and social value.

The protohistoric culture of the Chumash was terminated by the arrival of a Spanish expedition led by Gaspar de Portola in 1769. Chumash culture changed dramatically with the establishment of the Missions of Santa Barbara, Santa Ynez, and La Purísima.

4.4 History

The historic occupation of the project vicinity can be divided into three settlement periods: the Mission Period (A.D. 1769 – 1830), the Rancho Period (ca. A.D. 1830 -1865), and the American Period (ca. A.D. 1865 – 1915). Construction of Mission Santa Barbara in 1786, Mission la Purísima Concepcíon in 1787, and Mission Santa Ynez in 1804, altered both the physical and cultural landscape of the region. The missions were the center of Spanish influence in the region and affected native patterns of settlement, culture, trade, industry, and agriculture. Following the secularization of the Missions by the Mexican Government in 1821, California became part of the Republic of Mexico.

Secularization of lands and a focus on cattle raising marked the Rancho Period, where large land grants of Mission lands were ceded to wealthy, prominent Spanish families. Native Americans continued to work as laborers on ranchos during this period. With California statehood in 1850 and the advent of the American Period, farming and more intensive land

uses steadily replaced cattle stock raising. Cattle ranching was substantially curtailed by a prolonged drought in the 1860s.

Since statehood, major forces of regional change during the last 150 years have been railroads, maritime shipping, agribusiness concerns, the oil industry, college institutions, and the military.

5.0 CULTURAL RESOURCES ASSESSMENT

The APE incorporates all of the proposed construction and staging/access areas associated with the proposed Project.

Components 1 and 3 - El Estero Wastewater Treatment Plant

- *Component 1 – Desalination Facility Filter Feed Pump Station and Chemical Storage Area*
- *Component 3 – EEWWTP SCE Substation and Outfall Mixing Box*

A survey of the EEWWTP, utilizing 5-meter (16-foot) transect intervals, was conducted by Dudek in October 2013 for the EEWWTP Tertiary Filtration Replacement and Secondary Treatment Improvement Projects (Dudek 2013). Ground surfaces throughout the APE including Permanent and Temporary ADI were extensively developed with existing facilities and pavement. All of the EEWTP plant areas surveyed were clearly elevated relative to surrounding offsite landforms, indicating that imported fills had been placed. Therefore, no potential for impacting underlying soils and unknown potential cultural resources exist.

Components 2 and 5 - Charles Meyer Desalination Plant

- *Component 2 – Desalination Facility*
- *Component 5 - Offshore Intake Facilities Including the Beach Weir Box*

The Charles Meyer Desalination Plant was constructed in 1991 and included construction of various offshore components including a seawater intake, a subsea intake pipeline, and a brine discharge pipeline. Construction of the seawater intake involved inserting a polyethylene liner into an existing outfall line which was built in 1925 and abandoned in the 1970s. The polyethylene insert was then connected to two intake structures located 2,500 feet south of a

weir box situated on the beach near Cabrillo Boulevard. The Cultural Resource Evaluation associated with the 1991 EIR (Imwalle 1990) concluded that because no potentially significant cultural resources were identified within the offshore portion of the project area, and deposition of sand atop the pipeline postdates its 1925 installation date, the potential for offshore adverse impacts to previously unidentified cultural resources during removal of the sand would be minimal. No subsequent development activity or cultural resources investigations have occurred at the Desalination facility since its construction in 1991.

The proposed scope of reactivation work involves retrofitting new intake screens onto the existing intake structures installed in 1991 when the Plant was built. Because no modifications are proposed to the 1925 wastewater outfall pipeline, and because no prehistoric or historic properties were identified as a result of the past records searches, the findings of the 1991 EIR are still valid with respect to the treatment of offshore cultural resources. This includes Mitigation Measure 3.10-4 which specifically pertains to the offshore components of the original structure.

> Given the potential to encounter unrecorded offshore cultural resources, all contractors and construction personnel for the offshore construction components shall be alerted to the sensitivity of this area. If cultural features are exposed or suspected, work shall be promptly halted and a professional archaeologist and the Environmental Analyst will be consulted.

All proposed Temporary ADI ground surfaces are paved or are within the existing Desalination Facility. Therefore, no potential for impacting underlying soils and unknown potential cultural resources exist.

Component 4 - West Padre Pump Station

The proposed scope of work involves the replacement of a buried existing 8-inch discharge pipe to its point of connection with an existing 8-inch water main on Castillo Street, with a new 16-inch pipe, and the conversion of Padre Well to a monitoring well. This proposed development would take place in an enclosed, completely disturbed and highly developed industrial area. The replacement of existing piping with new piping would occur within an existing utility trench, such that all disturbances would occur in previously disturbed soils. Project ground disturbances would extend at least to a depth of 4 feet below existing grade.

All proposed Temporary ADI ground surfaces are paved. Therefore, no potential for impacting underlying soils and unknown potential cultural resources exist. Based on the background research and past construction activities located within the project site, the potential for subsurface prehistoric or historic archaeological resources to exist within the project site is extremely unlikely.

6.0 STUDY FINDINGS AND CONCLUSIONS

No cultural materials that may be associated with prehistoric or historic-era use are located within the project APE, including all Permanent and Temporary ADI. These data, along with substantial previous disturbance that has occurred in each of the APE components, indicates that the potential for identifying unknown, intact archaeological resources within the APE is extremely unlikely or non-existent.

7.0 OTHER RESOURCES

Unidentified Cultural Materials

If previously unidentified isolated cultural materials are unearthed during construction, work should be halted in that area until a qualified archaeologist can identify the source of the find. If unexpected buried cultural materials are encountered during construction, work should stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. If human remains are unearthed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resources Code Section 5097.98.

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APPENDIX A

Cultural Resources Records Search

(CONFIDENTIAL, BOUND SEPARATELY)

APPENDIX B

Native American Consultation

Additional Information

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Santa Barbara Desalination Facility

County: Santa Barbara

USGS Quadrangle

Name: Santa Barbara

Township: 4N Range: 27W Section(s): 17 & 23

Company/Firm/Agency: Dudek

Contact Person: Ken Victorino

Street Address: 621 Chapala Street

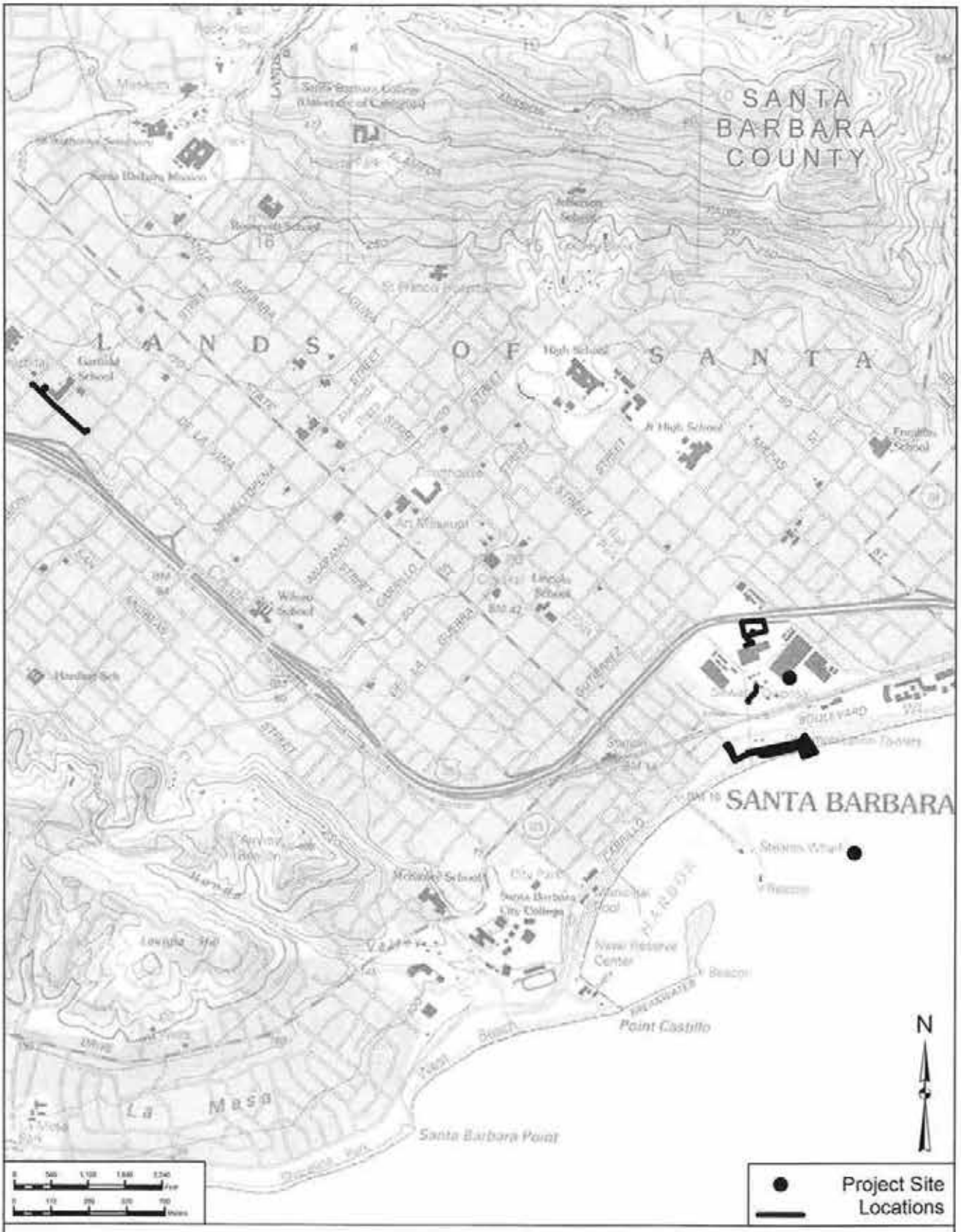
City: Santa Barbara Zip: 93101

Phone: (805) 308-8535

Fax: (805) 963-2074

Email: kvictorino@dudek.com

Project Description:



SOURCE: USGS Topo 7.5 Minute Series - Santa Barbara Quadrangle
Township 4N/Range 27W/Section 17 & 23

DUDEK

FIGURE 2

Project Site Location

City of Santa Barbara Charles Meyer Desalination Plant Reactivation

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

December 31, 2014

Ken Victorino
DUDEK
621 Chapala Street
Santa Barbara. CA 93101

RE: Santa Barbara Desalination Facility, Santa Barbara County
Sent FAX: 805-963-2074
5 Pages
Mr. Victorino;

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez
Associated Government Program Analyst

Native American Contacts
Santa Barbara County
December 31, 2014

Ernestine DeSoto, Tribal Elder
Contact Information unavailable Chumash
,
Last attempted verification 10/15/14

Barbareno/Ventureno Band of Mission Indians
Julie Lynn Tumamait-Stennslie, Chair
365 North Poli Ave Chumash
Ojai , CA 93023
jtumamait@hotmail.com
(805) 646-6214

Beverly Salazar Folkes
1931 Shadybrook Drive Chumash
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folkes9@msn.com Fernandeño
(805) 492-7255
(805) 558-1154 Cell

Patrick Tumamait
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Ojai , CA 93023
(805) 640-0481
(805) 216-1253 Cell

Owl Clan
Dr. Kote & Lin A-Lul'Koy Lotah
48825 Sapaque Road Chumash
Bradley , CA 93426
mupaka@gmail.com
(805) 472-9536

San Luis Obispo County Chumash Council
Chief Mark Steven Vigil
1030 Ritchie Road Chumash
Grover Beach CA 93433
(805) 481-2461
(805) 474-4729 Fax

Santa Ynez Band of Mission Indians
Vincent Armenta, Chairperson
P.O. Box 517 Chumash
Santa Ynez , CA 93460
varmenta@santaynezchumash.
(805) 688-7997
(805) 686-9578 Fax

John Ruiz
1826 Stanwood Drive Chumash
Santa Barbara CA 93103
(805) 965-8983

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Santa Barbara Desalination Facility, Santa Barbara County.

Native American Contacts
Santa Barbara County
December 31, 2014

Coastal Band of the Chumash Nation
Crystal Baker
P.O. Box 723 Chumash
Atascadero , CA 93423
(805) 466-8406

Barbareño Chumash
Ms. Regina Unzueta
125 West Carrillo Street Chumash
Santa Barbara CA 93101
reginaUnzueta@gmail.com
(805) 570-9530

PeuYoKo Perez
5501Stanford Street Chumash
Ventura , CA 93003
grndowl4U@yahoo.com
(805) 231 -0229 Cell

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Santa Barbara Desalination Facility, Santa Barbara County.

621 Chapala Street
Santa Barbara, CA 93101
T 805.963.0651
F 805.963.2074

DUDEK

Memorandum

To: Santa Ynez Band of Mission Indians, Vincent Armenta, Chairperson
Santa Ynez Tribal Elders Council, Adelina Alva-Padilla, Chairperson
Freddie Romero, Santa Ynez Tribal Elders Council
Santa Ynez Band of Mission Indians, Sam Cohen, Tribal Administrator
Michael Cordero, Chair, Coastal Band of the Chumash Nation
John Ruiz, Coastal Band of the Chumash Nation
Janet Darlene Garcia, Coastal Band of the Chumash Nation
Crystal Baker, Coastal Band of the Chumash Nation
Ernestine de Soto, Tribal Elder
Gilbert M. Unzueta, Jr.
Regina Unzueta
Frank Arredondo
Owl Clan, Dr. Kote and Lin A-lul'Koy Lotah, Quin-Tan Shoup
Patrick Tumamait
Julie Lynn Tumamait-Stennslie, Barbareño/Ventureño Band of Mission Indians
Charles Parra and Susie Ruiz
Melissa Para-Hernandez
Carol Pulido
Stephen Miller
Beverly Salazar Folkes
Randy Guzman-Folkes
PeuYoKo Perez
Richard Angulo
Kathleen Pappo, Barbareño/Ventureño Band of Mission Indians
Raudel Joe Banuelos, Barbareño/Ventureño Band of Mission Indians
Mark Steven Vigil, San Luis Obispo County Chumash Council

From: David Stone, RPA, Project Archaeologist

Date: February 10, 2015

Subject: Charles Meyer Desalination Plant Reactivation Project
City of Santa Barbara, California

The City of Santa Barbara, Public Works Department proposes to reactivate and operate the Charles Meyer Desalination Facility, originally constructed in 1991, but subsequently dismantled. The proposed Project includes offshore, onshore (beach), and inland components that would facilitate the reactivation and operation of the facility. Repair, construction, maintenance, and upgrades will occur in the previously disturbed areas of the following previously constructed facilities (please see the attached Project Location and Area of Potential Effect (APE) figures):

- Desalination Plant
- El Estero Wastewater Treatment Plant (EEWWTP) Facility
- Padre Street Pumping station

A records search performed at the Central Coast Information Center, University of California, Santa Barbara (CCIC), did not identify any recorded prehistoric archaeological resources within the APE. The CCIC identified 319 previous cultural resource investigations undertaken within a one-mile radius of the Desalination Plant and APE; 14 archaeological resources were identified within one mile of the APE. Most of these recorded resources have been destroyed as a result of previous urbanization and/or construction activity.

The Project APE is not listed on the Native American Heritage Commission (NAHC) Sacred Lands File (Katy Sanchez, NAHC 12/31/14).

Substantial portions of the APE including the Desalination Plant and EEWWTP facility are located within an area previously occupied by an estuary that extended from the Pacific Ocean within the present day Lower Eastside Santa Barbara area. Previous analysis of these facilities determined that the landform is underlain by Holocene Age (over 10,000 years old) estuarine sediments extending beyond 60 feet below the native ground surface and fill soils. Prior to modern development of the facilities, extensive amounts of fill were placed to achieve the existing finished grade elevation for flood control purposes.

These facilities were surveyed for the presence of archaeological materials prior to the construction of the Desalination Plant in 1991 and the upgrades to El Estero Wastewater Treatment Plant in 2013. No cultural materials were identified.

The existing Padre Street Pumping Station improvements and proposed piping would occur completely within the existing facility and previously disturbed soils. No prehistoric cultural resources are recorded within 0.5-mile of the facility.

We are interested in learning if you have knowledge of any cultural or heritage resources on the project site. As always, please contact me at (805) 308-8525, or by e-mail at dstone@dudek.com with any questions or comments. Thank you in advance.

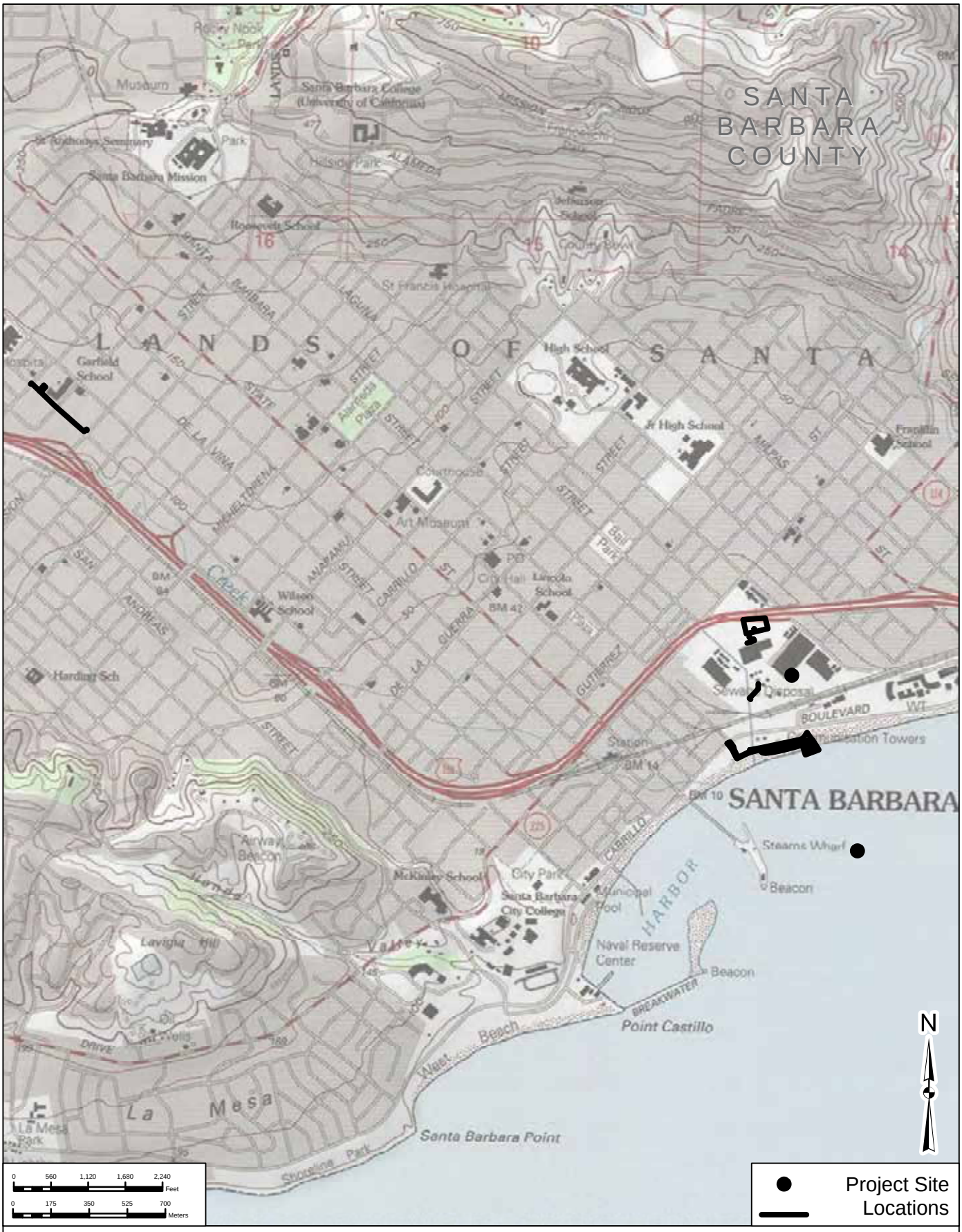
Attachments: Project Location Map

DUDEK

FIGURE 1

Regional Vicinity

City of Santa Barbara Charles Meyer Desalination Plant Reactivation



SOURCE: USGS Topo 7.5 Minute Series - Santa Barbara Quadrangle
Township 4N/Range 27W/Section 17 & 23

DUDEK

FIGURE 2

Project Site Location

City of Santa Barbara Charles Meyer Desalination Plant Reactivation

Table 1. Native American Consultation Summary

Contact Name	*Contact Dates/Method*	*Response*
Beverly Salazar Folkes	February 10, 2015 / Email with Memo	February 17, 2015 phone call: no concerns since the proposed project is occurring in previously disturbed area of already existing facilities
Ernestine De Soto	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No further concerns with the project.
Gilbert Unzueta	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Regina Unzueta	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
San Luis Obispo County Chumash Council, Chief Mark Steven Vigil	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Owl Clan, Dr. Kote and Lin A-Lul'Koy Lotah	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Owl Clan, Qun-tan Shup	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Santa Ynez Band of Mission Indians, Vincent Armenta, Chairperson	February 10, 2015 / Email with Memo	See Freddie Romero response.
Stephen William Miller	February 10, 2015 / Email with Memo	February 17, 2015 phone call: spoke with wife "my husband reads everything; if he has a concern, he will contact you. If he hasn't contacted you, that he does not have any concerns"
Barbareño/Ventureño Band of Mission Indians, Julie Lynn Tumamait-Stennslie, Chair	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Santa Ynez Tribal Elders Council, Adelina Alva-Padilla, Chair Woman	February 10, 2015 / Email with Memo	See Freddie Romero response.

Contact Name	*Contact Dates/Method*	*Response*
Patrick Tumamait	February 10, 2015 / Email with Memo	February 17, 2015 phone call: Not very familiar with the area, but suggests having an archaeological and Native American monitor on site during any ground disturbance activity
Randy Guzman-Folkes	February 10, 2015 / Email with Memo	February 17, 2015 phone call: no issue; defers to local consultants
Coastal Band of the Chumash Nation, Michael Cordero, Chairperson	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Melissa M. Parra-Hernandez	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Charles S. Parra	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Frank Arredondo	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Richard Angulo	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Santa Ynez Tribal Elders Council, Freddie Romero, Cultural Preservation Consultant	February 10, 2015 / Email with Memo	Mr. Romero did not identify any concerns with the proposed activity.
Santa Ynez Band of Mission Indians, Sam Cohen, Tribal Administrator/Counsel	February 10, 2015 / Email with Memo	See Freddie Romero response.
Barbareño/Ventureño Band of Mission Indians, Kathleen Pappo	February 10, 2015 / Email with Memo	February 17, 2015 phone call: no issue; defers to consensus of consultants.
Carol A. Pulido	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Barbareño/Ventureño Band of Mission Indians, Raudel Joe Banuelos, Jr.	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response

Contact Name	*Contact Dates/Method*	*Response*
Coastal Band of the Chumash Nation, Janet Darlene Garcia	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
Coastal Band of the Chumash Nation, Crystal Baker	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
PeuYoKo Perez	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response
John Ruiz	February 10, 2015 / Email with Memo	February 17, 2015 phone call: No Response

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Freddie Romero, Santa Ynez Chumash Indian Reservation Elders Council Representative
Dudek Participant:	David Stone, RPA
Communication Date:	February 12, 2015
Communication Time:	3:59 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Freddie Romero, representing the Elders Council, has no concerns regarding this project.

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Ernestine DeSoto, Tribal Elder
Dudek Participant:	David Stone, RPA
Communication Date:	February 16, 2015
Communication Time:	12:33 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Ms. DeSoto had no knowledge of any cultural resources within the APE. She does not identify the need for any measures to address potential impacts from project implementation.

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Beverly Folkes, Tribal Elder
Dudek Participant:	David Stone, RPA
Communication Date:	February 17, 2015
Communication Time:	1:05 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Ms. Folkes stated that she has no concerns since the proposed project is occurring in previously disturbed areas of already existing facilities.

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Patrick Tumamait, Tribal Elder
Dudek Participant:	David Stone, RPA
Communication Date:	February 17, 2015
Communication Time:	1:15 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Mr. Tumamait stated that he is not very familiar with the area, but suggests having a Native American and Archaeological monitor present during any ground disturbance activities.

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Randy Guzman-Folkes, Tribal Elder
Dudek Participant:	David Stone, RPA
Communication Date:	February 17, 2015
Communication Time:	1:25 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Mr. Guzman-Folkes stated that he has no concerns and elects to defer to local representatives.

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Kathleeen Pappo, Tribal Elder
Dudek Participant:	David Stone, RPA
Communication Date:	February 17, 2015
Communication Time:	1:30 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Ms. Pappo stated that she has no concerns and defers to the consensus of the representatives whom have been contacted.

DUDEK

PERSONAL COMMUNICATION RECORD

Communication With:	Steven Miller, Tribal Representative
Dudek Participant:	David Stone, RPA
Communication Date:	February 17, 2015
Communication Time:	1:40 p.m.
Communication Type:	Telephone
Subject:	Santa Barbara Desalination Facility Reactivation Project

Mr. Miller's wife stated that "my husband reads everything; if he has a concern, he will contact you. If he hasn't contacted you, that he does not have any concerns."

Attachment 4

Biological Assessment for the Charles Meyer Desalination Facility (Dudek 2014b)

Biological Assessment for the Charles Meyer Desalination Facility

Prepared for:

City of Santa Barbara
Public Works Department
630 Garden Street
Contact: Sara Iza
(805) 897-2685 (o)
siza@SantaBarbaraCA.gov

Prepared by:

DUDEK
621 Chapala Street
Santa Barbara, California 93101
Contact: John H. Davis IV, MS, CE
(805) 308-8524 (o)
(805) 252-7996 (c)
jdavis@dudek.com

DECEMBER 12, 2014

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TABLE OF CONTENTS

Section **Page No.**

1.0 INTRODUCTION 1
1.1 Description of Actions to be Taken at Weir Box 1
1.1.1 Offshore Ocean Intakes – Repair and Maintenance: Initial Redeployment of Intake Screens, Pumps, and Check Valves; Cleaning 2
1.1.2 Offshore Ocean Intakes – Repair and Maintenance: Periodic Screen Removal 7
1.1.3 Offshore Ocean Intakes – Repair and Maintenance: Periodic Pump or Check Valve Maintenance 7
1.1.4 Action Area 7

2.0 REGULATORY FRAMEWORK 9
2.1 Endangered Species Act 9
2.1.1 Critical Habitat 9
2.2. Migratory Bird Treaty Act 13

3.0 METHODOLOGY 15
3.1 Literature Review 15
3.2 Field Survey 15
3.2.1 Survey Limitations 16

4.0 RESULTS 21
4.1 Federally-Listed Plant Species 22
4.2 Federally-Listed Wildlife Species 23
4.2.1 Western Snowy Plover 31
4.2.2 Tidewater Goby 32

5.0 DISCUSSION 35
5.1 Western Snowy Plover 35
5.1.1 Breeding Habitat 35
5.1.2 Wintering Habitat 35
5.1.3 Western Snowy Plover Critical Habitat 36
5.2 Tidewater Goby 36

6.0 AVOIDANCE AND MINIMIZATION MEASURES 37
6.1 General Avoidance Measures 37
6.2 Avoidance of Breeding Western Snowy Plover 38
6.3 Avoidance of Wintering Snowy Plover 39
6.4 Minimization of Effects to Snowy Plover Critical Habitat 39

TABLE OF CONTENTS

Section **Page No.**

6.5 Avoidance of Nesting Birds under the Migratory Bird Treaty Act of 1918 39

7.0 REFERENCES.....41

APPENDICES

A List of Wildlife Species Observed
B Photograph Plates

LIST OF FIGURES

Figure 1 Regional Map.....3
Figure 2 Vicinity Map.....5
Figure 3 Federally-Listed Species Critical Habitats.....11
Figure 4 Off-Shore Intakes.....17
Figure 5 Biological Assessment.....19

TABLES

Table 1 Federally-Listed Plant Species and their Potential to Occur within the Action Area.....22
Table 2 Federally-Listed Wildlife Species and their Potential to Occur within the Action Area.....25

1.0 INTRODUCTION

Dudek has prepared this Biological Assessment on behalf of the City of Santa Barbara Public Works Department (City) to identify the potential for federally-listed species to occur within and adjacent to the proposed repair and maintenance of the Charles Meyer Desalination Facility (Project). The proposed Project includes both offshore, onshore (beach), and inland components. The Project components that are of specific focus for this report involves repair and maintenance work (i.e., Actions) at the proposed Project's weir box, which is located directly south of east Cabrillo Boulevard on the public Santa Barbara East Beach (*Figures 1 and 2*). The purpose of this biological assessment is to determine whether the proposed Actions at the weir box would affect federally-listed species and/or their habitats and to provide avoidance measures to ensure no take of these species would occur during these activities, if present.

The City is currently seeking a Coastal Development Permit (CDP) from the California Coastal Commission (CCC) for the repair and maintenance Project pursuant to 14 CCR § 13252, to allow ongoing repair and maintenance activities at the Project's offshore intake structures and the weir box, both of which are in the Original Jurisdiction of the Coastal Zone. Additionally, in accordance with Section 10 of the Rivers and Harbors Act of 1899 (Section 10), the City is seeking a Letter of Permission or Nationwide Permit (NWP 3 Maintenance) from the U.S. Army Corps of Engineers (Corps) that will cover repair and maintenance activities at the weir box and intake structures. This biological assessment will provide relevant information about federally-listed species covered by the U.S. Fish and Wildlife Service (USFWS) to the City, State of California, and Federal regulatory agencies in support of the permitting process. Tenera Environmental (2014a, b) has prepared a separate Biological Assessment and an Essential Fish Habitat Assessment that covers marine resources regulated by the National Marine Fisheries Service for the intake structures and anchor locations.

1.1 Description of Actions to be Taken at Weir Box

The components of the proposed Project relevant to this biological assessment include the weir box located directly south of east Cabrillo Boulevard on East Beach (*Figure 1*). The weir box is a transition point for power and communication wires for the offshore intake structure. Below is a description of repair and maintenance activities that would occur at the weir box (Actions). All proposed Actions would occur during daylight hours. Although night-time work is not planned, safety lighting may be required near the weir box in the event that problems are encountered during repair and maintenance activities that extend working hours beyond daylight hours. Where such lighting is necessary, it would be limited and cast downward.

1.1.1 Offshore Ocean Intakes – Repair and Maintenance: Initial Redeployment of Intake Screens, Pumps, and Check Valves; Cleaning

1.1.1.1 Removal of wires

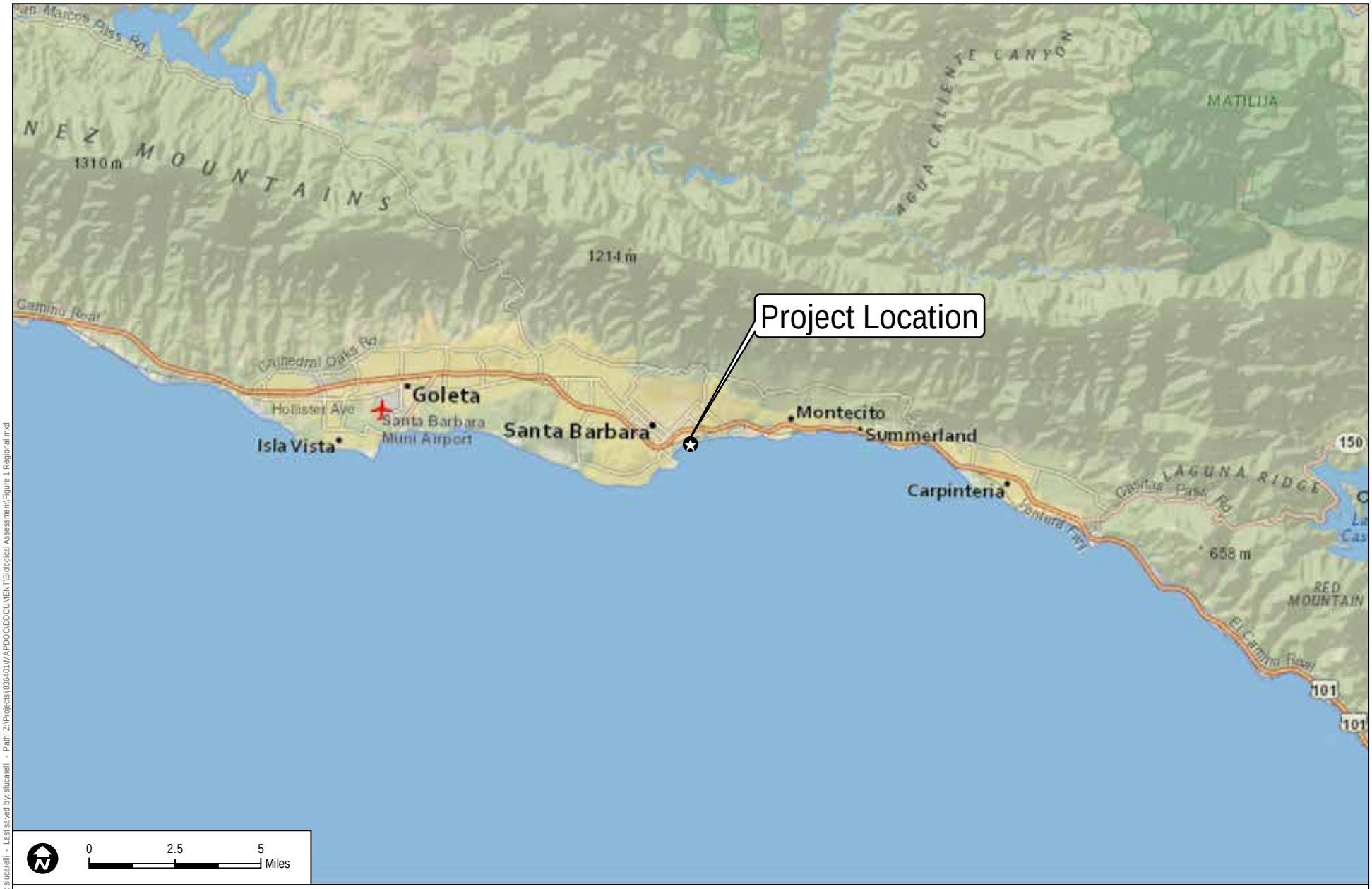
During the initial redeployment of the offshore intake structure (including screens, pumps, check valves, and cleaning activities), the City of Santa Barbara Public Works Department (City) would remove the existing intake pump power and communication wires that are housed in conduit within the intake pipeline and that were abandoned in place. The communication wires would be pulled at the weir box, which would require a crew of four to six individuals and a tugger/winch truck. Crews would work 10-hours shifts for up to three weeks to complete the work. The duration would depend upon the condition of the wire that has been abandoned.

Due to the weight of the pump power cable, and depending on its condition, it may be very difficult to extract the existing cable from the conduits. The crew would disconnect both ends of the cable(s), connect the tugger/winch truck on the cable at the beach weir box, and attempt to pull the cable out of the conduit through the weir box. The crew would either (1) connect the new pump cable (which would add significant weight to the pull) or (2) connect a small rated pull cable so that, when the existing cable is extracted, there would be a pull cable available to pull the new pump cables back in. If the crew is successful, they would pull the length of the allowable existing cable and cut off sections of cable that can be handled. The cable sections would then be transported to a salvage yard for recycling.

If the crew is unsuccessful in extracting the existing cable from the conduit located within the intake pipeline, the old conduit would need to be extracted through the weir box. New conduit would be installed offshore as the existing conduit is extracted, or new conduit could be installed from the beach outward. Any new installations would be through the intake pipeline, and would not involve disturbance to the ocean floor. Some repair and replacement of pipeline to conduit transition fittings in the beach weir box and offshore at the transition fittings at the outfall pipe near the intake, may also be required.

1.1.1.2 Installation of new wires

Installation of new wire would occur concurrent with the offshore installation of pumps and check valves and the redeployment of intake screens. The installation would take two to four days and would require a crew of approximately six individuals and a tugger/winch truck located at the beach weir box.



DUDEK

SOURCE: ArcGIS Online Basemap (Nat Geo)

CHARLES MEYER DESALINATION FACILITY

FIGURE 1

Regional Map

Biological Assessment

Date: 12/2/2014 - Created by: slucarelli - Last saved by: slucarelli - Path: Z:\Projects\8364401\MAPDOC\DOCUMENT\Biological Assessment\Figure 1 Regional.mxd

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1 inch = 2,000 feet

SOURCE: ArcGIS Online Basemap (USA Topo)

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CHARLES MEYER DESALINATION FACILITY

FIGURE 2

Vicinty Map

Biological Assessment

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1.1.2 Offshore Ocean Intakes – Repair and Maintenance: Periodic Screen Removal

Maintenance activities related to periodic intake screen removal offshore may also occur onshore at the weir box. During periods of inclement weather or in preparation for a short- or long-term standby condition when the desalination facility is not operated, intake screens may be entirely removed from the offshore structures. If intake pumps are removed with the intake screens, then the offshore pump power and communications wires would also be removed at the weir box. The removal of the offshore pump power and communications wires would require a crew of four to six individuals and a tugger/winch truck working for 10-hours shifts for approximately four days. The crew would disconnect both ends of the cable(s), connect the tugger/winch truck on the cable at the beach weir box, and pull the cable out of the conduit through the weir box. As the cable is removed, the crew would connect a small rated pull cable so that, when the existing cable is extracted, there would be a pull cable to pull the new pump cables back in during redeployment. The used cable would either be reused at the time the intake pumps are redeployed or transported to a salvage yard for recycling.

1.1.3 Offshore Ocean Intakes – Repair and Maintenance: Periodic Pump or Check Valve Maintenance

Lastly, activities at the weir box may occur during periodic pump or check-valve maintenance. If the pumps require removal for maintenance and new pumps are installed, the following activities would be required at the beach weir box (similar to the activities described above in Section 1.1.1).

1.1.4 Action Area

The Action Area includes all areas that have potential to be impacted, directly or indirectly by the proposed Actions, and not only the area immediately surrounding the weir box. Specifically, for the proposed repair and maintenance activities, the Action Area includes the access route to the weir box and the area surrounding the weir box. Therefore, the Action Area includes the access routes along and adjacent to the public bike bath, access through the sand substrate located directly east of the weir box, and the beach area surrounding the weir box. The access route will go through a parking lot, public bike lane, and beach regularly used by the public, City lifeguards, and other City services.

Specifically, access to the weir box is proposed from the City parking area south of East Cabrillo Street near the Skater's Point Skate Park. The parking lot is located approximately 0.15 miles west of the site (*Figure 2*)**.** Maintenance truck(s) will travel south to the access ramp located along the south boundary of the parking lot near the middle and enter the pedestrian boardwalk,

where the vehicle(s) will turn to the east towards the bridge over the Laguna Channel. Directly after crossing the bridge, maintenance truck(s) will turn south entering the beach, where they will continue east adjacent to the iceplant until directly north of the weir box. This is the access route to this area of the beach used regularly by City lifeguards, and also by other City Public Works and Park & Recreation staff. The final approach would require maintenance truck(s) to traverse over approximately 50 feet of beach sand to access the weir box.

2.0 REGULATORY FRAMEWORK

2.1 Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the USFWS, National Oceanic and Atmospheric Administration (NOAA), and National Marine Fisheries Service (NMFS). This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. Under provisions of Section 9(a)(1)(B) of FESA, it is unlawful to "take" any listed species. "Take" is defined in Section 3(19) of FESA as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

2.1.1 Critical Habitat

2.1.1.1 Western Snowy Plover

USFWS-designated critical habitat for Western snowy plover is located along West and East Beach (USFWS 2014a; 77 Federal Register (FR) 36728-36869), as shown in *Figure 3*. This critical habitat is located directly within the Action Area. Western snowy plover critical habitat includes primary constituent elements of the physical or biological features essential to the conservation of this species (PCEs). USFWS defines PCEs as:

> "Sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil with:
>
> 1. Areas that are below heavily vegetated or developed areas and above daily high tides;
> 2. Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annual high tide or high-water flow, subject to inundation but not constantly under water, that support small invertebrates such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources;
> 3. Surf- or water-deposited organic debris, such as seaweed (including kelp and eel grass) or drift wood located on open substrates that supports and attracts small invertebrates for food, and provides cover ; and
> 4. Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior" (77 FR 36728-36869).

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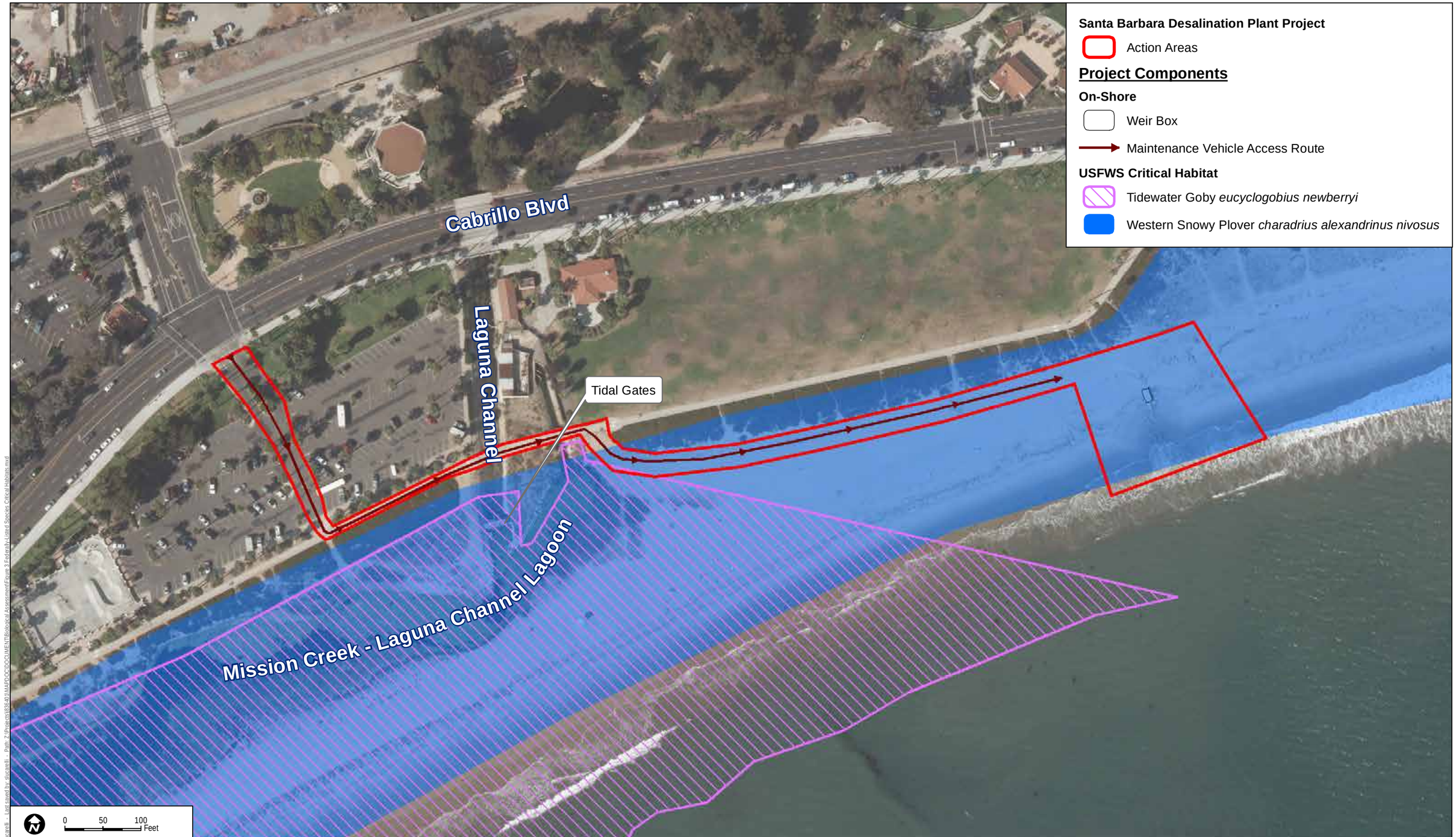

1 inch = 120 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014) High Tide Line 11-14-2014

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FIGURE 3

Federally-Listed Species Critical Habitats

Biological Assessment

Date: 12/3/2014 - Created by: slicarelli - Last saved by: slicarelli - Path: Z:\Projects\130249\MAPDOC\DOCUME\TB\Biological Assessment\Figure 3 Federally-Listed Species Critical Habitats.mxd

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2.1.1.2 Tidewater Goby

The approximately 4-acre Mission Creek and Laguna Channel Lagoon is a Designated Critical Habitat unit (SB-11) for the tidewater goby (see Table 1 in 78 FR 8746-8819). The critical habitat is described as an intermittent sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall (i.e., non-rainy season) that closes or partially closes the lagoon or estuary, and thereby provides relatively stable conditions (PCE 1.c.). PCE 1.a. (suitable substrate) and 1.b. (submerged aquatic vegetation) occur through the Designated Critical Habitat unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation (78 FR 8746-8819). The Conception Recovery Sub-Unit[1] (CO 3) includes both the Laguna Channel (CO 3u) and Mission Creek (CO 3t). The Conception Recovery Sub-Unit habitats vary in length and all extend between the Pacific Ocean and Highway 101 (USFWS 2005).

2.2. Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 U.S.C. 703 et seq.). Additionally, Executive Order (EO) 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The EO requires federal agencies to work with the USFWS to develop a memorandum of understanding. The USFWS reviews actions that might affect these species.

[1] The geographical distribution of the tidewater goby is divided into 6 recovery units that are further divided into 26 sub-units. The Conception Unit (CO) extends from Point Buchan to the Ventura County line. The Conception Recovery Sub-Unit (CO3) extends from Point Arguello to the Ventura County line.

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3.0 METHODOLOGY

3.1 Literature Review

The presence of documented federally-listed plant and wildlife species within the surrounding six USGS quadrangles of the Action Area were identified through a query of the California Natural Diversity Database (CNDDB)(CDFW 2014a), USFWS Database (USFWS 2014a), and USFWS Information, Planning, and Conservation System (USFWS 2014b). Six U.S. Geological Survey (USGS) 7.5 minute quadrangles (quads) were selected: Carpinteria, Goleta, Hildreth Peak, Little Pine Mountain, San Marcos Pass, and Santa Barbara (CDFW 2014). Additional data sources were also referenced including the California Native Plant Society's online Inventory of Rare and Endangered Plants (CNPS 2014), the on-line database Calflora: Information about California Plants for Education, Research and Conservation (Calflora 2014), the CDFW Special Animals List (CDFW 2014), *Birds of Santa Barbara County, California* (Lehman 2014), ebird (2014), and *Biological Assessment: City of Santa Barbara Coastal Infiltration Reduction Project* (Storrer Environmental Services 2014). Note: six quads were queried instead of the standard nine as the Action Area is located along the Pacific Ocean. No USGS quads exist to the southwest, south, or southeast of the Action Area due to the location of the Pacific Ocean.

3.2 Field Survey

On October 10, 2014, Dudek biologist Melissa Blundell conducted a focused habitat assessment (assessment) for the western snowy plover (*Charadrius nivosus nivosus*) around the weir box at East Beach, Santa Barbara. The field survey was conducted around the weir box, but did not cover the potential access route crews will use to access the weir box. A follow-up survey was conducted on December 9, 2014 along the proposed access route to the weir box. As discussed above, the access route will go through a parking lot, public bike lane, and beach regularly used by the public, City lifeguards and other City services.

The surveys were conducted on foot between 8:35 a.m. – 9:40 a.m. and 11:50 a.m. – 12:25 p.m., within 150 feet of the weir box and along the proposed access route (*Figures 4 and 5*). Weather conditions included cloudy skies (15 to 100% cloud cover), cool temperatures (63-68°F), and a mild breeze (0-3 miles per hour). Ms. Blundell inspected the length of the access route, assessment area and surrounding habitat, spending the majority of the time in the northern portion of the assessment area by the weir box, where the substrate would potentially be more suitable for nesting. Vegetation and widths of open beach were measured by pacing out distances within the assessment area. In addition to noting down habitat characteristics and disturbances, Ms. Blundell recorded all wildlife species observed while on site and within the survey area and between the survey area and Stearns Warf. These species are listed in *Appendix A. Photographs* documenting general habitat conditions were also taken and are included as *Appendix B*.

3.2.1 Survey Limitations

The site visits occurred after the breeding season (generally between March and August, as described below). It is possible that avian species used this location for nesting, but nests were not detected due to the seasonal timing of the field survey. Alternatively, avian species may have been present in the local area (e.g., western snowy plovers nesting at Santa Barbara harbor breakwater, known locally as "sandspit," which is approximately 0.5 miles southwest of the weir box) but were not detected during the field survey. Focused nesting surveys conducted during the breeding season would provide a more accurate estimate of the western snowy plovers use of the habitat on-site. However, as discussed in Section 4.2.1 below, there is no documented evidence of western snowy plovers using the habitat around the weir box for nesting.

1 inch = 300 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014) High Tide Line 11-14-2014

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FIGURE 4

Off-Shore Intakes

Biological Assessment

Date: 12/2/2014 - Created by: slucarelli - Last saved by: slucarelli - Path: Z:\Projects\936-01\MAPDOC\DOCUME\1\Biological Assessment\Figure 4 Off-Shore Intakes.mxd

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1 inch = 150 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014) High Tide Line 11-14-2014

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 5

Biological Assessment

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4.0 RESULTS

A total of two federally-listed species and/or critical habitat occur within the Action Area: snowy plover and tidewater goby. Habitat suitability for federally-listed plant species is discussed in *Section 4.1*. Habitat suitability for federally-listed wildlife species is described in *Section 4.2*. Habitat and species observations recorded during the survey are provided below.

As noted above, Dudek biologist Melissa Blundell surveyed the Action Area along East Beach in October and December 2014, to search for suitable western snowy plover breeding/wintering habitat and to document any occurrences of the species while on-site. The area within 150 feet of the weir box contains areas of open, lose sand bordered to the south by the Pacific Ocean and to the north by a dense growth of non-native iceplant (*Carpobrotus edulis*), patches of Bermuda grass (*Cynodon dactylon*), and scattered telegraph weed (*Heterotheca grandiflora*). The width of suitable nesting substrates (i.e., from the iceplant to observed high-tide line) measured approximately 80 feet (east of the weir box) to 18 feet (directly north of the weir box). The general topography consists of a gentle slope between the iceplant and high-tide line. Along the access route suitable nesting substrate would include open sand substrates between the bike path and weir box, occurring directly south of the iceplant. The vegetation and substrates occurring along the remaining western half of the access route are not suitable for non-breeding or breeding western snowy plovers.

Bird species observed during the survey were noted and although the number and location of all species observed were not directly mapped during field surveys, the general species locations were recorded. In general, bird species that were observed foraging or walking within the vicinity (i.e., approximately 150 feet) of the weir box included killdeers, black-bellied plovers, willets, and marbled godwits. These species were also observed foraging or walking along the tide line between the weir box and the Laguna Channel. Species that were observed within the open grass area and palm trees (north of the public bike trail) included blackbirds, starlings, corvids, rock pigeons, and black phoebes. The open grass and palm tree area is located approximately 125 feet from the weir box. The open grass area is adjacent to the public bike path and extends to approximately 310 feet north and 700 feet northwest of the weir box. Species observed flying overhead included cormorants, terns, skimmers, kingfishers, gulls, and pelicans. Within the Laguna Channel the following species were observed: sparrows, blackbirds, cormorants, egrets, coots, whimbrels, shovelers, and mallards. The Laguna Channel is located approximately 745 feet west of the weir box and traverses underneath the public bike path. In addition, song sparrows and black phoebes were observed within the vegetation bordering the Laguna Channel. Gulls, terns, and skimmers were observed flying overhead (as noted above) and walking/sitting on the beach between the weir box and Stearns Warf. Belted kingfishers were observed flying over (as noted above) and perching along Stearns Warf. Species observed within the parking lot, either along the grass at the entrance of the parking lot, on the pavement, or

within the vegetation, included gulls, crows, and coots, Lastly, species occurring off-shore (out at sea) include an unidentified loon and, one mammal species, western grebe, and a harbor seal.

East Beach, including the survey area, typically experiences a high level of human activity. During the site visit there was a moderate to high level of human activity, with foot traffic occurring along the shoreline, potential homeless sleeping/wandering adjacent to the weir box, and both foot and bicycle traffic occurring along the public bike path located approximately 115 feet north of the weir box. There was a moderate level of trash observed within 300 linear feet of the weir box that included items such as cans, discarded blankets, and wrappers.

4.1 Federally-Listed Plant Species

The CNDDB, USFWS, and CNPS Rare and Endangered Plant Inventory queries returned five federally-endangered plant species that have been documented within the surrounding six quads of the Action Area. Based on Dudek's habitat suitability analysis, no federally-listed plant species had potential to occur within the Action Area (i.e., Target List), *Table 1*. During the site visits survey, six plant species were observed, including the non-native iceplant (*Carpobrotus edulis*), patches of non-native Bermuda grass (*Cynodon dactylon*), scattered telegraph weed (*Heterotheca grandiflora*), non-native perennial grasses within the open grass area, Canary Island date palms (*Phoenix canariensis*), and fan palms (*Washingtonia* sp.). Additional species restricted to the paved parking lot landscaped areas include ornamental species, agave (Agave sp.), and pines (*Pinus* sp.).

Table 1
Federally-Listed Plant Species and their Potential to Occur within the Action Area

Scientific Name	Common Name	Regulatory Status	Habitat Requirements/life form/blooming period/	Site Suitability/ Field Results	Potential to Occur within the Action Area
Arenaria paludicola	Marsh sandwort	FE/ CE/ 1B.1	Marshes and swamps (freshwater or brackish)/sandy, openings/ perennial stoloniferous herb/ May-Aug/ 10-558	No suitable habitat/ Not observed	Unlikely
Chloropyron maritimum ssp. maritimum	Salt marsh bird's-beak	FE/ CE/ 1B.2	Coastal dunes, Marshes and swamps (coastal salt)/ annual herb (hemiparasitic)/ May-Oct/ 0-98	No suitable habitat/ Not observed	Unlikely
Lasthenia conjugens	Contra Costa goldfields	FE/ None/ 1B.1	Cismontane woodland, Playas(alkaline), Valley and foothill grassland, Vernal pools/mesic/ annual herb/ Mar-Jun/ 0-1542	No suitable habitat/ Not observed	Unlikely
Monolopia	San Joaquin	FE/ None/	Chenopod scrub, Valley and	No suitable habitat/	Unlikely

Table 1
Federally-Listed Plant Species and their Potential to Occur within the Action Area

Scientific Name	Common Name	Regulatory Status	Habitat Requirements/life form/blooming period/	Site Suitability/ Field Results	Potential to Occur within the Action Area
congdonii	woollythreads	1B.2	foothill grassland(sandy)/ annual herb/ Feb-May/ 197-2625	Not observed	
Nasturtium gambelii	Gambel's water cress	FE/ CT/ 1B.1	Marshes and swamps (freshwater or brackish)/ perennial rhizomatous herb/ Apr-Oct/ 16-1083	No suitable habitat/ Not observed	Unlikely

Status Definitions:
CE = state listed as endangered
CT = state listed as threatened
FE = federally endangered
California Rare Plant Rank
1B (formerly List 1B): Plants that are rare, threatened, or endangered in California and elsewhere.
2 (formerly List 2): Plants that are rare, threatened, or endangered in California, but more common elsewhere
0.1: Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
0.2: Fairly threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)

4.2 Federally-Listed Wildlife Species

The CNDDB and USFWS query returned twelve federally-listed wildlife species that have been documented within the surrounding six quads of the Action Area, see *Table 2*. Based on Dudek's habitat suitability analysis only two species have potential to occur within the Action Area. The Action Area lacks suitable habitat for the one invertebrate species: vernal pool fairy shrimp (*Branchinecta lynchi*); one fish species: southern steelhead – southern California DPS (*Oncorhynchus mykiss irideus*); two amphibian species: arroyo toad (*Anaxyrus californicus*) and California red-legged frog (*Rana draytonii*); six bird species: marbled murrelet (*Brachyramphus marmoratus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), light-footed clapper rail (*Rallus longirostris levipes*), California least tern (*Sterna antillarum browni*), and least Bell's vireo (*Vireo bellii pusillus*).

Dudek's habitat suitability analysis for the twelve federally-listed wildlife species documented within the surrounding six quads of the Action Area is provided in *Table 2*. The two species with potential to occur, the western snowy plover and the tidewater goby, are described in detail following the table.

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Table 2
Federally-Listed Wildlife Species and their Potential to Occur within the Action Area

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Field Results	Potential to Occur within the Action Area
Invertebrates						
Branchinecta lynchi	Vernal pool fairy shrimp	FT		Vernal pools habitats	No suitable habitat present. Not observed.	Unlikely
Fish						
Eucyclogobius newberryi	tidewater goby	FE/CSC	Spring, late summer (peak spawning)	Brackish or freshwater in bays, sounds, and lagoons and creeks along the coast (USFWS 2007a).	Tidewater gobies occupy habitat in "Laguna Channel, extending from the southeast end of Laguna Street to the Pacific Ocean." Mission and Laguna Channel are designated as critical habitat unit SB-9 for this species. The lagoon at the mouth of these two creeks seasonally forms to provide stable habitat, although intermittently. Presence/absence surveys were not conducted for the tidewater goby and, therefore, observations were limited to habitat conditions and available observational data.	Likely
Oncorhynchus mykiss irideus	southern steelhead - southern California DPS	FE/CSC	December – April (spawning)	Spawns in freshwater streams and spends much of life at sea. Requires streams without barriers along stream course that obstruct access to spawning areas. Juveniles may spend months in coastal lagoons while sand bars block access to the ocean (NMFS 2009).	Nearby Mission Creek, which is hydrologically connected to the Laguna Channel at the seasonal lagoon, is critical habitat for this species (70 FR 2488). The Laguna Channel lacks spawning habitat, and the pumping station at the mouth of the channel currently provides a barrier to this species. No suitable creek habitat occurs within the Action Area. Not observed.	Unlikely
Amphibians						
Anaxyrus californicus	arroyo toad	FE/CSC	March-July	Semi-arid regions near washes or intermittent streams. Habitats used	The nearest CNDDB occurrence is from approximately 8 miles northeast of the	Unlikely

Table 2
Federally-Listed Wildlife Species and their Potential to Occur within the Action Area

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Field Results	Potential to Occur within the Action Area
				include valley-foothill and desert riparian as well as a variety of more arid habitats including desert wash, palm oasis, and Joshua tree, mixed chaparral and sagebrush.	Action Area, within the portion of the Santa Ynez River that flows towards Gibraltar Lake. Suitable habitat is absent within the Action Area. Not observed.	
Rana draytonii	California red-legged frog	FT/CSC	January – July	Preferred aquatic habitat is characterized by dense shrubby, or emergent riparian vegetation, such as arroyo willow, cattails, and bulrushes (*Schoenoplectus* spp.), associated with deep (greater than two feet), still or slow-moving water. Will also utilize ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, permanent ponds, perennial creeks, manmade aquatic features, marshes, dune ponds, lagoons, riparian corridors, blackberry thickets, nonnative annual grasslands, and oak savannas.	Occurs widely at suitable elevations in Santa Barbara County. The nearest CNDDB occurrence is from approximately 3 miles northeast of the Action Area, along Cinquefoil Creek approximately 0.35 mile north of the confluence of Hot Springs Creek and Cold Springs Creek, Montecito. California red-legged frogs have not been observed within the Laguna Watershed. Not observed.	Unlikely
Birds						
Brachyramphus marmoratus	marbled murrelet	FT/SE	March - October	Nests in coniferous trees and generally in old-growth forests or mature trees that contain large platforms, moss, vertical cover, and horizontal access to nest limb. Nests have also been found on the ground in tundra or forests habitats within rock scree slopes, cliffs, boulder fields near the ocean, rock cavities, or crevices in the open or under vegetation. Feeds on small schooling fish and invertebrates (Nelson and Kim 1997)	No suitable forests, mature trees, or ground nesting habitats present within the Action Area. Only one CNDDB nesting record is documented and is located in Santa Cruz County, over 200 miles north of the Action Area. Not observed.	Unlikely

Table 2
Federally-Listed Wildlife Species and their Potential to Occur within the Action Area

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Field Results	Potential to Occur within the Action Area
Charadrius alexandrinus nivosus	western snowy plover	FT/CSC	March – August	Breeds on coastal sandspits, dune-backed beaches, beaches at creek mouths and lagoons, and salt pans at lagoons and estuaries. Snowy plovers feed on vertebrates on the surface of wet sand, surf-cast kelp, dry sand above the high tide line, salt pans, spoil sites, and the edges of salt marshes, salt ponds, and lagoons (USFWS 2007b).	No beach or dune habitat occurs within the Action Area suitable for nesting. Unlikely to nest within the Action Area due to constant human activities and marginal quality substrate. The nearest nesting record is on the Santa Barbara harbor sandspit during May to July 2005 and involved a single successful nest (Lehman 2014). Winter habitat present. Not observed.	Moderate
Empidonax traillii extimus	southwestern willow flycatcher	FE/SE	May – August	Typically nests in relatively dense riparian habitat where still or slow-moving surface water is present, although water may be absent in some years or during portions of the breeding season. The minimum patch size recorded for nesting is 0.8 hectares (approximately 2.0 acres). In the region, usually nests where the tree-shrub later may consist of willows (*Salix* spp.), cottonwoods (*Populus* spp.), boxelder (*Acer negundo*), and alder (*Alnus* spp.) of different size classes, as well as a dense understory of native and exotic vegetation (Sogge et al. 2010).	Not known to nest in southern Santa Barbara County (Lehman 2014). Riparian habitat in the vicinity of the Action Area lacks the structural diversity of suitable habitat and is too patchy and too limited in extent (no patches greater than 0.5 acres). Not observed.	Unlikely
Gymnogyps californianus	California condor	FE/SE/FP	Year-round	Nests in caves, in crevices, behind rock slabs, or on large ledges on high sandstone cliffs. Prefers mountains, gorges, and hillsides, which create updrafts favorable for soaring. Feeds on large and medium-sized carrion.	The nearest CNDDB occurrence is 20 miles north of the Action Area in the Los Padres National Forest, northeast of Lake Cachuma in the Sisquoc-San Rafael condor area. The Action Area lacks suitable habitat. Not observed.	Unlikely

Table 2
Federally-Listed Wildlife Species and their Potential to Occur within the Action Area

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Field Results	Potential to Occur within the Action Area
Rallus longirostris levipes	light-footed clapper rail	FE/SE	March – August	Inhabits coastal marshes and lagoons from southern Santa Barbara County south to northern Baja California. Light-footed clapper rails forage in shallow water and mudflats for a variety of invertebrates; they seek cover in dense vegetation and place their nests high enough in vegetation to avoid flooding during high tides (USFWS 2009).	No suitable salt marsh habitat occurs within five miles of the Action Area. The nearest occurrence of this species is approximately 8.0 miles to the east, at Carpinteria Salt Marsh (CDFW 2014; Lehman 2014, USFWS 2009). Not observed.	Unlikely
Sterna antillarum browni	California least tern	FE/SE	May-August	Nests along coast, especially colonial breeder on bare flat substrates, sand beaches, alkali flats, paved areas. Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flat.	No suitable nesting habitat present. Closest recent nesting attempt is located approximately 11 miles west of the site, west of Devereux Slough (Coal Oil Point Preserve) where re-nesting was documented between 2004 and 2007. Prior to 2004, nesting was last documented around 1960. No documented recent nesting attempts in Santa Barbara since 1938, since 1944 in Carpinteria, and since 1932 in Summerland (Lehman 2014). Not observed.	Unlikely
Vireo bellii pusillus	least Bell's vireo	FE/SE	March - August	Nests in structurally diverse woodlands with dense understory, along watercourses, including cottonwood-willow forests, oaks woodlands, and mulefat scrub. Forages in these and adjacent habitats (USFWS 1986).	Not known to nest in southern Santa Barbara County (Lehman 2014). Riparian habitat in the icinity of the Action Area is patchy and lacks the structural diversity of suitable habitat. Not observed.	Unlikely

Status Definitions:
FE = federally endangered
FT = federally threatened

SE = state endangered
FP = California Department of Fish and Wildlife fully protected species
CSC = California Department of Fish and Wildlife species of special concern

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4.2.1 Western Snowy Plover

The snowy plover (*Charadrius nivosus*) is a ground nesting bird found mainly on unvegetated to sparsely vegetated coastal beaches and shores of inland alkaline lakes (Page et al. 2009). The western snowy plover subspecies (*C. n. nivosus*) winters and nests along the Pacific Coast from southern Washington to Magdalena Bay, Baja Sur, Mexico (Page et al. 2009). This species typically nests in open areas of shingle or sand located on or near the sea (including sandy beaches and estuary shores) and may also nest on edges of saline lagoons or dry lake beds inland and on areas of dry mud with scanty vegetation near brackish water (Zeiner et al. 1990, Baicich and Harrison 2005). Locally, the western snowy plover nests in these habitats from as early as March through August with major nesting habitat apparently on salt pond levees (Cogswell 1977 as cited in Zeiner et al. 1990, M. Kelly, pers. comm.). Nests consist of a shallow scrape that is unlined or sparsely lined with fragments of plants and debris (Baicich and Harrison 2005).

During winter, the western snowy plover occurs on the Pacific Coast locally from southern Washington to Nayarit, Mexico (Page et al. 2009). During the winter this species is primarily coastal and occurs along beaches, tidal flats, lagoon margins, and salt-evaporation ponds (Page et al. 2009). The western snowy plover forages on terrestrial, freshwater, brackish, and small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods (77 FR 36728-36869). On the coast, feeding takes place on beaches, tide flats, river mouths, lagoon margins, salt flats, and salt ponds. On beaches, this species forages above and below mean high-water line by gathering food from above and below the sand surface, kelp surfaces, carcasses, or foredune vegetation (Page et al. 2009).

The Pacific Coast population of the western snowy plover is a federally threatened and federal Bird of Conservation Concern. In Santa Barbara County, the snowy plover is a fairly common and local transient and winter visitor, while it is somewhat less common ("uncommon to fairly common") as a summer resident (Lehman 2014). In Santa Barbara County, this species is found on the drier portions of sandy beaches and at river mouths with fewer occurrences in coastal sloughs (Lehman 2014). The breeding population of the species in Santa Barbara County declined substantially during the 1990s, primarily due to human activities and predation by introduced predators and high densities of some native predators (Lehman 2014). In Santa Barbara, primary documented wintering locations during the past 30 years have included beaches at the Santa Maria River mouth, Vandenberg Air Force Base, Coal Oil Point, the Santa Barbara harbor sandspit (approximately 0.5 miles southwest of the weir box), and East Beach, where the Action Area is located (Lehman 2014). As many as 369 individuals (January 2, 2005) have been recorded in recent Santa Barbara Christmas Bird Counts (Lehman 2014), which include beaches from Montecito west to Coal Oil Point.

The winter aggregations of western snowy plover at the Santa Barbara harbor sandspit and East Beach (Stearns Wharf east to the Andrée Clark Bird Refuge, including the Action Area) have varied but occasionally number over 100 birds. Birds present at East Beach most often occur at the far eastern end of the beach, approximately one mile east of the weir box (SBMNH files as cited in Storrer Environmental Services 2014).

A single successful nest was documented at the Santa Barbara harbor sandspit during May to July 2005; this was the first documented breeding attempt in the City of Santa Barbara since 1933 (see occurrence no. 44, CDFW 2014a; Lehman 2014). One of the color-banded nesting adults was observed again six years later (in August 2011) at East Beach. However, no nesting attempts have been documented since 2005. Although the area is still known to support wintering individuals, CNDDB records the habitat from West Beach to East Beach as "unsuitable due to human disturbance and development" (see occurrence no. 44, CDFW 2014a).

Elsewhere in Santa Barbara County, western snowy plovers have been known to nest in areas of relatively high human activity when provided the opportunity. Specifically, this species has been known to nest at Coal Oil Point (Lehman 2014; UCSB 2008), located approximately 11 miles west of the Action Area, with as many as 66 nests observed in 2007 (UCSB 2008). Although Coal Oil Point is actively used by the public all year round, portions of this area are protected during the breeding season and winter months which may have facilitated continued nesting. The first documented breeding attempt in Carpinteria since 1960 occurred in May 2013, approximately 7.5 miles east of the Action Area (CDFW 2014a; Lehman 2014). An assessment in 1978 had concluded that suitable habitat was no longer present at this location due to human activity/development (see occurrence no. 43, CDFW 2014a). The species also nested at Goleta Beach, approximately 8.5 miles west of the Action Area, as recently as 1948 (Lehman 2014) and two eggs sets were collected from the "Goleta Slough Flats" between 1927 and 1948 (see occurrence no. 46, CDFW 2014a; Lehman 2014). An assessment conducted in 1978 concluded that suitable habitat was still present at the "Goleta Slough Flats" (CDFW 2014a). Although western snowy plover nesting is highly unlikely within the Action Area, avoidance measures are proposed below to completely reduce or eliminate any potential take of this species or adverse modification to its USFWS-designated critical habitat.

4.2.2 Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi*) is federally-endangered and a California Department of Fish and Wildlife species of special concern. It is found in brackish or freshwater in bays, sounds, and lagoons and creeks along the coast from Del Norte County south to San Diego County. Half-grown and adult tidewater gobies move upstream in summer and fall, usually up to 1 kilometer (0.62 miles) from the estuary, but in some areas from 5 to 8 kilometers

(3.1 to 5.0 miles). Reproduction occurs at all times of year, but peak spawning occurs during spring and late summer (USFWS 2005).

URS conducted a Creek Inventory and Assessment Study (URS 2000) which documented tidewater goby presence on the ocean side of the tidal gates. Dr. Camm Swift observed tidewater gobies within Laguna Channel during surveys in 2002 (USFWS 2005 [C. Swift, pers. comm. 2004]). A 1995 CNDDB record documents tidewater gobies in Laguna Channel extending from the southeast end of Laguna Street to the Santa Barbara Harbor (CDFW 2014a). The USFWS identifies Mission Creek - Laguna Channel as critical habitat unit SP-9 (USFWS 2014a).

In summary, tidewater gobies have been documented in Laguna Channel and the Mission Creek – Laguna Channel Lagoon. No direct or indirect impacts or modifications to the channel or lagoon are proposed. However, since the maintenance crew will access the weir box by passing over the Laguna Channel in their truck(s), avoidance measures are proposed below to completely reduce or eliminate any potential take of this species or adverse modification to its USFWS-designated critical habitat. No focused aquatic or formal USFWS protocol presence/absence surveys for this species were conducted in 2014.

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5.0 DISCUSSION

5.1 Western Snowy Plover

5.1.1 Breeding Habitat

The federally-threatened western snowy plover is highly unlikely to nest in the Action Area. There has been only one documented nesting attempt (in 2005) of this species near East Beach over the past 81 years. This nesting attempt occurred at the Santa Barbara harbor sandspit (located approximately 0.4 miles southwest of the Action Area), where the disturbance level is significantly lower compared to the Action Area. High tide events, especially during the full and new moons, extend to the north of the weir box, thereby eliminating the weir box and directly adjacent areas from nesting opportunities. The areas north of the weir box and high tide limits where staging and access to the weir box would occur currently experience a continuous high level of recreational disturbance, which even occurs below high tide limits. Additionally, seasonal beach projects (harbor dredging and sand pumping) occur near the sand and vegetated portion of the beach. The combination of natural and anthropogenic disturbances is expected to continue to preclude this species from nesting in the Action Area. East Beach is a highly used recreational area that is known to host volleyball tournaments, contains a bike path and sidewalks, and is adjacent to the highly used Stearn's Wharf.

Snowy plover nesting is unlikely within the Action Area; however, to completely reduce or eliminate any potential take of this species during the nesting season, implementation of avoidance measures are recommended (*see Section 6.1 and 6.2*).

5.1.2 Wintering Habitat

Non-breeding or wintering western snowy plover are known to occur at East Beach, although known occurrences along this strip of beach are concentrated at the far (eastern) end of the beach, approximately 0.75 to 1 mile east of the weir box. As described above, East Beach is a highly used recreational area that is known to host volleyball tournaments, contains a bike path, sidewalks, and is adjacent to the highly used Stearn's Wharf. Nevertheless, wintering western snowy plovers have been known to aggregate at the Santa Barbara harbor sandspit and East Beach, with flocks occasionally numbering over 100 birds (SBMNH files as cited in Storrer Environmental Services 2014). Snowy plovers use East Beach and likely the Action Area in the non-breeding season for foraging and roosting especially in the morning and evening when recreational activities are at minimal levels.

Overall, Actions (e.g., noise, lighting, human activity) are not expected to have an increased effect on snowy plover behavior during times of normally high activity (i.e., daylight hours). During the daytime this area experiences high human disturbance and the added disturbance

from repair or maintenance activities, as described Section 1 above, are not expected to impact wintering behavior. However, work conducted during dusk, dawn, or night-time hours are not currently experienced in the Action Area. As a result, night-time work, which would only occur if problems are encountered during repair and maintenance activities during the day that extend working hours beyond daylight, has a potential to have an impact on snowy plover roosting and foraging behavior.

Snowy plover wintering within the Action Area is a possibility, especially during early morning and late afternoon when recreation activity is reduced. To completely reduce or eliminate any potential take of this species during the wintering season, implementation of avoidance measures are recommended (*see Section 6.1 and 6.3*).

5.1.3 Western Snowy Plover Critical Habitat

The beach within the Action Area is USFWS-designated critical habitat for western snowy plover. Although this stretch of habitat experiences a high level of human activity, there is a potential that proposed Actions may have a temporarily negligible effect on a small area of western snowy plover critical habitat. There is potential that heavy equipment and personnel on the beach will change modify contours of the terrain (e.g., introducing heavy tire tracks or excessive personnel through critical habitat), however, this route is used by lifeguard and other emergency City personnel, so this effect would is considered negligible. Additionally, maintenance at the weir box may temporarily compact and/or dislodge beach sand through vehicle positioning and wrenching. Again, Actions at the weir box are minimal and temporary in nature.

No adverse modifications to Western snowy plover critical habitat would occur to the Action Area; however, temporary use of critical habitat by the maintenance crew would limit their ability to feed at tidal areas around the weir box for approximately three weeks when any of the Actions described in Section 1.1 above are undertaken. To reduce the effects of maintenance work, implementation of minimization measures are recommended (*see Section 6.1 and 6.4*).

5.2 Tidewater Goby

The proposed Actions would not result in take of the tidewater goby or negative affects to critical habitat within the Mission Creek - Laguna Channel lagoon. Maintenance crews, however, will access the weir box through the bridge over Laguna Channel and enter East Beach near the lagoon, therefore, implementation of avoidance measures in *Section 6.1* is recommended to completely reduce or eliminate any potential take of this species and/or designated critical habitat.

6.0 AVOIDANCE AND MINIMIZATION MEASURES

Based on this biological assessment, no potential adverse effects to western snowy plover habitat (breeding, non-breeding, or critical habitat) and/or impacts to individuals are anticipated; and no potential adverse effects to tidewater goby habitat and/or individuals are anticipated. Although western snowy plovers are expected to breed in Santa Barbara County, such breeding activities would be less likely in locations near the Action Area. Nevertheless, implementation of the recommended avoidance measures would further ensure no impacts would occur to breeding western snowy plovers. The measures will also result in avoidance of impacts to nesting western snowy plover. All avoidance measures are to be developed and implemented in coordination with USFWS.

6.1 General Avoidance Measures

BIO-1 Workers Educational Training. Prior to the initiation of any maintenance activities, all personnel associated with the proposed Project should attend a worker education training program (program) conducted by a qualified biologist. In general, it is recommended that the program discuss the western snowy plover and tidewater goby habitat preference(s), occupied habitat in the area, life histories, law and regulations, as well as potential impacts and protection measures, and Action Area limits. Protections and regulations federally-listed species should also be included in the program. It is recommended that a species and habitat fact sheet also be developed prior to the training program and distributed at the training program to all contractors, employers and other personnel involved with maintenance activities at the weir box. Specifically, the program should also include:

A. Measures to prevent indirect impacts during maintenance activities should be covered, including delivery, storage, and usage of materials and chemicals as they relate to the protection of adjacent aquatic habitat.

B. Training materials should include laws and regulations that protect federally-listed species and their habitats, the consequences of non-compliance with laws and regulations and a contact person (i.e. maintenance activity manager, biological monitor, and City's Project manager) in the event that protected biological resources are affected.

The City should notify the qualified biologist in advance of the kick-off meeting and any subsequent meetings that may take place if additional contractors are employed during additional maintenance activities at the weir box. A sign in sheet will be circulated for signatures to all personal that attend the workers educational

training to confirm that program materials were received and that they understand information presented.

BIO-2 Establish temporary fencing. Temporary fencing will be installed around the perimeter of the weir box on the beach to prevent inadvertent encroachment by crews and equipment to the surrounding beach area.

BIO-3 Weir box access**.** Access from the public bike trail to the weir box will occur along the least disturbing route feasible. This will include keeping all personnel and equipment directly adjacent to or within the iceplant bordering the northern portion of beach.

BIO-4 Personnel restrictions**.** Maintenance personnel will be prohibited from harming, harassing, or feeding wildlife and/or collecting special-status plant or wildlife species; bringing pets on the Action Area; littering on the Action Area; or exceeding normal daytime operational noise or nighttime lighting.

BIO-5 Night-time Lighting restrictions**.** Night-time lighting shall be the minimum necessary for personnel safety and execution of maintenance activities shall they expend past standard working hours. Lighting shall directed/shielded downward to minimize lighting along the beach.

6.2 Avoidance of Breeding Western Snowy Plover

BIO-6 Conduct pre-activity nesting bird surveys**.** If maintenance work must occur during the western snowy plover nesting season (March through August), the applicant shall have pre-Action nesting surveys conducted by a qualified biologist to determine whether active nests of this species are present in the Action Area or within 300 feet of the Action Area (buffer to be established in coordination with the USFWS). If active nests are found, repair and maintenance activities within 300 feet of the nest shall be postponed or halted, at the discretion of the biologist in consultation with CDFW and USFWS, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In addition, the maintenance worker access route to the weir box will be re-routed to avoid disrupting nesting behaviors. This new access route will be established in coordination with the USFWS. A biological monitor shall be present during those periods when Actions will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFW and USFWS.

BIO-7 Conduct biological activity monitoring during Actions**.** An authorized biological monitor must be present in the Action Area during all repair/maintenance activities. The monitor shall survey the activity site (i.e., weir box) and surrounding area for compliance with all

avoidance measures. Weekly biological monitoring reports shall be prepared and submitted to the appropriate permitting and responsible agencies through the duration of the repair/maintenance activities. Monthly biological monitoring reports shall be prepared and submitted through the duration of maintenance activities to document compliance with avoidance measures.

6.3 Avoidance of Wintering Snowy Plover

BIO-8 Conduct pre-activity bird surveys**.** Biological surveys for sensitive bird species will be conducted by an authorized biologist prior to weir box maintenance activities. If present, maintenance will be delayed until the sensitive bird species have vacated the work area.

6.4 Minimization of Effects to Snowy Plover Critical Habitat

BIO-9 Pre-activity evaluation**.** Prior to conducting maintenance activities, a habitat assessment and evaluation will be assessed and approved by an approved biologist. This measure will ensure that avoidance measures have been provided to ensure the avoidance of western snowy plovers.

BIO-10 Beach sand maintenance or replacement. During the Actions, all efforts will be made to not disturb sand substrates more than is required for access to the weir box and activities within the fenced work areas. During the Actions, beach sand paths uses to access the weir box will be maintained or piled and replaced after activities are completed. After the Actions are completed at the weir box, the disturbed sand (both around the weir box and paths used to access the work area) will be replaced. The replacement of sand will include raking and leveling the sand back to pre-activity condition or replacing any sand that was piled during work activities.

6.5 Avoidance of Nesting Birds under the Migratory Bird Treaty Act of 1918

BIO-11 Pre-Action Nesting Bird Survey. A pre-Action survey for nesting birds should be conducted by a qualified biologist to determine if active nests of special-status birds, or common bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code, are present within 300 feet of the maintenance/repair zone. The survey should be conducted within one week prior to initiation of Actions that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March 1 through August 30).

BIO-12 Nesting Bird Buffers and Requirements. If active nests are found, a no activity buffer shall be established at a minimum of 100-foot (this distance may be greater

depending on the bird species and activity, as determined by the biologist) around the nest site where it overlaps with work areas. Activities within no-maintenance buffer shall be postponed or halted, at the discretion of the biologist, until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. In addition, all active nests shall be mapped with a GPS unit and nest locations with 100-foot buffers overlain on aerial photographs to provide regular updated maps to inform the Project manager/engineer and maintenance crew of areas to avoid. The City-appointed biologist should also serve as a compliance monitor during the breeding season to ensure that there are no inadvertent impacts to nesting birds.

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APPENDIX A

List of Wildlife Species Observed

APPENDIX A
List of Wildlife Species Observed

BIRD

BLACKBIRDS, ORIOLES AND ALLIES

ICTERIDAE—BLACKBIRDS

Agelaius phoeniceus—Red-winged blackbird
Euphagus cyanocephalus—Brewer's blackbird

CORMORANTS

PHALACROCORACIDAE—CORMORANTS

Phalacrocorax auritus—Double-crested cormorant
Phalacrocorax penicillatus—Brandt's cormorant

EMBERIZINES

EMBERIZIDAE—EMBERIZIDS

Melospiza melodia (potential)—Song sparrow (potential)

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Sayornis nigricans—Black phoebe

GREBES

PODICIPEDIDAE—GREBES

Aechmophorus occidentalis—Western grebe

HERONS AND BITTERNS

ARDEIDAE—HERONS, BITTERNS, AND ALLIES

Ardea alba—Great egret
Egretta thula—Snowy egret

JAYS, MAGPIES AND CROWS

CORVIDAE—CROWS AND JAYS

Corvus brachyrhynchos—American crow

KINGFISHERS

ALCEDINIDAE—KINGFISHERS

Megaceryle alcyon—Belted kingfisher

OLD WORLD SPARROWS

PASSERIDAE—OLD WORLD SPARROWS

**Passer domesticus*—House sparrow

PELICANS

PELECANIDAE—PELICANS

Pelecanus occidentalis—Brown pelican

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

* *Columba livia*—Rock pigeon (rock dove)

RAILS, GALLINULES AND COOTS

RALLIDAE—RAILS, GALLINULES, AND COOTS

Fulica americana—American coot

SHOREBIRDS

CHARADRIIDAE—LAPWINGS AND PLOVERS

Charadrius vociferus—Killdeer

Pluvialis squatarola (potential)—Black-bellied plover (potential)

SCOLOPACIDAE—SANDPIPERS, PHALAROPES, AND ALLIES

Limosa fedoa—Marbled godwit

Numenius phaeopus—Whimbrel

Tringa semipalmata—Willet

STARLINGS & ALLIES

STURNIDAE—STARLINGS

**Sturnus vulgaris*—European starling

TERNS AND GULLS

LARIDAE—GULLS, TERNS, AND SKIMMERS

Larus californicus—California gull
Larus heermanni—Heermann's gull
Larus occidentalis—Western gull
Rynchops niger—Black skimmer
Thalasseus maximus—Royal tern

WATERFOWL

ANATIDAE—DUCKS, GEESE, AND SWANS

Anas clypeata—Northern shoveler
Anas platyrhynchos—Mallard

LOONS

GAVIIDAE—LOONS

Gavia sp. —Unidentified loon (offshore)

MAMMAL

HAIR SEALS

PHOCIDAE—HAIR SEALS

Phoca vitulina (offshore) —Harbor seal (offshore)

* signifies introduced (non-native) species

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APPENDIX B

Photograph Plates

APPENDIX B
Photograph Plates

Attachment 5

Biological Resources Assessment Report for the Charles Meyer Desalination Facility in Relation to the State Revolving Fund (SRF) Grant (Dudek 2015a)

Biological Resources Assessment Report

for the

Charles Meyer Desalination Facility in relation to the State Revolving Fund (SRF) Grant

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TABLE OF CONTENTS

Section **Page No.**

1.0 INTRODUCTION 1
1.1 Site Locations 1
1.1.1 Component 1. 420 Quinientos Street - Filter Feed Pump Station and Chemical Storage Area 1
1.1.2 Component 2. 525 East Yanonali Street - Desalination Facility 1
1.1.3 Component 3. 520 East Yanonali Street – EEWWTP Southern California Edison (SCE) Substation and Outfall Mixing Box 2
1.1.4 Component 4. 310 West Padre Street – Padre Pump Station 2
1.1.5 Component 5. Offshore Intake Facilities Including the Beach Weir Box 2
1.2 Proposed Project Description 2
1.2.1 Component 1. 420 Quinientos Street – Desalination Facility Filter Feed Pump Station and Chemical Storage Area 3
1.2.2 Component 2. 525 East Yanonali Street – Desalination Facility 3
1.2.3 Component 3. 520 East Yanonali Street – EEWWTP SCE Substation and Outfall Mixing Box 4
1.2.4 Component 4. 310 West Padre Street – Padre Pump Station 4
1.2.5 Component 5. Offshore Intake Facilities Including the Beach Weir Box 5

2.0 REGULATORY FRAMEWORK 11
2.1 Sensitive Vegetation Communities Defined 11
2.2 Special-Status Plant Species Defined 11
2.3 Federal Endangered Species Act (1973) 12
2.4 National Marine Fisheries Service (NMFS) 13
2.5 Migratory Bird Treaty Act 13
2.6 Jurisdictional Waters of the U.S./State, Including Wetlands 14
2.6.1 U.S. Army Corps of Engineers 14
2.6.2 California Department of Fish and Wildlife 16
2.6.3 California Regional Water Quality Control Board 17
2.6.4 California Coastal Commission 18
2.7 Local Laws, Ordinances, Regulations, and Standards 18
2.7.1 City of Santa Barbara's General Plan 19
2.7.2 City of Santa Barbara's Local Coastal Plan 2004 20

3.0 METHODOLOGY 23
3.1 Literature Review 23
3.1.1 Project Information from the City of Santa Barbara 23
3.2 Field Surveys 24

TABLE OF CONTENTS

Section **Page No.**

3.2.1 Biological Survey Area 25
3.2.2 Biological Assessment Area 25
3.2.3 Vegetation Community Mapping 26
3.2.4 Habitat Assessment 27
3.3 Survey Limitations 27

4.0 RESULTS 39
4.1 Vegetation Communities and Wildlife Habitats 39
4.1.1 Red Willow Thickets 41
4.1.2 Douglas' sagewort 41
4.1.3 Ruderal/Ornamental 42
4.1.4 Developed 42
4.2 Special-Status Plant Species 42
4.2.1 Southern Tarplant (*Centromadia parryi* ssp. *australis*) 45
4.3 Special-Status Wildlife Species 45
4.3.1 Birds 57
4.3.2 Fish 59
4.3.3 Insects 60
4.3.4 Reptiles 61
4.3.5 Mammals 62
4.4 Sensitive Vegetation Communities 63
4.4.1 Southern Coastal Salt Marsh 64
4.4.2 Red Willow Thickets 64
4.5 Critical Habitat 64
4.5.1 Western Snowy Plover 64
4.5.2 Tidewater Goby 65

5.0 ENVIRONMENTAL CHECKLIST FORM AND THRESHOLDS OF SIGNIFICANCE 67

6.0 CONCLUSIONS AND RECOMMENDATIONS 69
6.1 Component 1 – Desalination Facility Filter Feed Pump Station and Chemical Storage Area 70
6.1.1 Wildlife Species 70
6.2 Component 2 – Desalination Facility 71
6.2.1 Wildlife Species 72
6.3 Component 3 – EEWWTP SCE Substation and Outfall Mixing Box 72
6.3.1 Hydrology 73

TABLE OF CONTENTS

Section **Page No.**

6.3.2 Sensitive Vegetation Communities and Habitats 73
6.3.3 Special-Status Plant Species 75
6.3.4 Special-Status Wildlife Species 75
6.3.5 Nesting Birds 76
6.4 Component 4 – Padre Pump Station 76
6.4.1 Wildlife Species 76
6.5 Component 5 – Offshore Intake Facilities Including the Beach Weir Box 77
6.5.1 Offshore Intake Facilities 77
6.5.2 Beach Weir Box 78

7.0 REFERENCES 83

LIST OF FIGURES

Figure 1 Project Vicinity 7
Figure 2 Project Site Location 9
Figure 3A Desalination Facility Filter Feed Pump Station & Chemical Storage Area 29
Figure 3B Desalination Facility 31
Figure 3C EEWWTP SCE Substation & Outfall Mixing Box 33
Figure 3D Padre Pump Station 35
Figure 3E Offshore Intake Facilities Including the Beach Weir Box 37

LIST OF TABLES

Table 1 Survey Dates, Times, and Conditions 24
Table 2 Summary of Vegetation Communities and Land Cover Types in the Biological Survey Area 41
Table 3 Special-Status Plant Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA 42
Table 4 Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA 47
Table 5 Potentially Occurring Sensitive Vegetation Communities 63

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1.0 INTRODUCTION

Dudek has prepared this Biological Assessment on behalf of the City of Santa Barbara Public Works Department (City) to identify the potential for biological resources to occur within and adjacent to the proposed Charles Meyer Desalination Facility Project (Project) in Santa Barbara, California. The proposed Project includes both offshore, onshore (beach), and inland components that would facilitate the reactivation and operation of the Charles Meyer Desalination Facility. Repair, construction, maintenance, and upgrades will occur at five locations, including at 420 Quinientos Street, 525 and 520 East Yanonali Street, 310 West Padre Street, and offshore/onshore (beach), as shown in *Figure 1*. The report's primary intent is to support the City's California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) reporting and review process. The report also provides recent data and analysis that will be useful in future consultation and/or permit application review by other applicable regulatory resource agencies, including the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), the Central Coast Regional Water Quality Control Board (RWQCB), the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Coastal Commission (CCC).

1.1 Site Locations

1.1.1 Component 1. 420 Quinientos Street - Filter Feed Pump Station and Chemical Storage Area

The filter feed pump station is located within the southeast portion of the El Estero Waste Water Treatment Plant (EEWWTP) property at 420 Quinientos Street (*Figure 1 and 2*). The main access to the filter feed pump station is from Quinientos Street. The filter feed pump station is located within the City of Santa Barbara Zoning Area and is classified as Non-Residential Zone OM-1 (Ocean Oriented Light Manufacturing) (City of Santa Barbara 2013). The filter feed pump station is bordered by railroad tracks to the south and is located within the EEWWTP zoned boundaries. The EEWWTP zoned boundaries, as a whole, are bordered to the north by US-101 Freeway, to the east and northwest by Zone M-1 (Light Manufacturing), to the west by Zone HRC-2 (Hotel and Related Commerce), and to the south by railroad tracks and Zone PR (Parks and Recreation).

1.1.2 Component 2. 525 East Yanonali Street - Desalination Facility

The Desalination Facility is located across the street and north of the EEWWTP at 525 East Yanonali Street (*Figure 1 and 2*). The desalination facility is located within the City of Santa Barbara Zoning Area and is classified as Non-Residential Zone OM-1 (Ocean Oriented Light Manufacturing) (City of Santa Barbara 2013). The desalination facility is bordered by the US-

101 Freeway to the north tracks to the south and OM-1 is surrounded by OM-1 along the remaining sides. The desalination facility is located within the EEWWTP zoned boundaries (see Section 1.1.1).

1.1.3 Component 3. 520 East Yanonali Street – EEWWTP Southern California Edison (SCE) Substation and Outfall Mixing Box

The EEWWTP Southern California Edison (SCE) substation is located south of the desalination facility at 520 East Yanonali Street. The substation is located within the northern portion of the EEWWTP property while the outfall mixing box is located within the southwest corner of the EEWWTP property. See Section 1.1.1 for a description of EEWWTP zoning details.

1.1.4 Component 4. 310 West Padre Street – Padre Pump Station

The Padre Pump Station is located along the east side of Castillo Street between West Los Olivos Street and West Mission Street. The pump station is located within the City of Santa Barbara Zoning Area and is classified as Residential Zone R-3 (Multiple Residential Units) between Padre Street and Los Olivos Street; and Residential Zone R-4 (Hotel/Motel/Multiple Residential Units) between Padre Street and West Mission Street (City of Santa Barbara 2013).

1.1.5 Component 5. Offshore Intake Facilities Including the Beach Weir Box

The offshore portions of the Project are located in offshore of East Beach and southeast of the terminus of Stearns Wharf. The ocean intake consists of two offshore concrete intake structures (A) and (B) that are designed to accommodate intake pumps, check valves, and intake screens. The entire offshore intake structure complex is located below sea level at an approximate depth of 30 feet (5 fathoms), in an area of soft/sandy seafloor, as further described in the *Biological Assessment Report for Intake Repair and Maintenance Activities* (Tenera 2014a). A required U.S. Coast Guard navigational a buoy marks the location of the intake structure complex. An existing brine discharge line is located approximately 8,720 feet offshore southeast of the intake structures in a shared outfall with the EEWWTP. This existing shared outfall currently requires no repair, maintenance, or physical changes. In addition, the weir box is located directly south of east Cabrillo Boulevard on the public Santa Barbara East Beach.

1.2 Proposed Project Description

Project repair, construction, maintenance, and upgrades are described as five separate components. The City's Project for the Desalination Facility includes Component 1 – Desalination Facility Filter Feed Pump Station and Chemical Storage Area; Component 2 – Desalination Facility; Component 3 – EEWWTP SCE Substation and Outfall Mixing Box; Component 4 – Padre Pump Station; and Component 5 – Offshore Intake Facilities Including the

Beach Weir Box. The City is currently in the design process and the most recent project descriptions (drafted October 23, 2014) are provided below.

1.2.1 Component 1. 420 Quinientos Street – Desalination Facility Filter Feed Pump Station and Chemical Storage Area

The chemical storage facility has been maintained under the City's long-term desalination plant standby program. However, some filter feed pump station and chemical storage facility equipment will need to be serviced and replaced as part of the reactivation of the Desalination Facility. These activities may involve the minor repair, construction, maintenance, upgrades, and excavation. Once seawater is pumped from the offshore intakes through the pipe to the filter feed pump station, it is then pumped through a pipeline beneath the EEWWTP to the Desalination Facility located at 525 East Yanonali Street.

1.2.2 Component 2. 525 East Yanonali Street – Desalination Facility

When the plant was placed into standby mode as noted above, the existing reverse osmosis membranes and filter media were removed; and the piping, tanks, and vessels were drained and cleaned. The remaining equipment has been maintained under the long-term storage program. As part of the reactivation of the Desalination Facility, it is expected that any replacement or upgraded equipment and/or structures will occur in the same location for a similar use and be of similar size and height as identified on the site plan for Coastal Development Permit (CDP) 4-96-119 approving the Desalination Facility as a permanent use. These activities may involve the repair, construction, maintenance, upgrades, or excavation.

Much of the existing equipment that has been maintained at the Desalination Facility will likely be serviced and brought back on-line after testing/evaluation. In some cases, due to the age of the equipment, changes in technology, and/or lack of availability of replacement parts, it may be necessary to replace existing equipment with new (and generally more efficient) parts and or equipment.

There are three components of the Desalination Facility that will require replacement/upgrades regardless of other Desalination Facility considerations. These components are:

1. Electrical panels, switch boxes and other electrical system components that have deteriorated with age and/or have been damaged by an electrical surge event that occurred after the Desalination Facility was operated, but before the electrical gear was de-energized during the long term standby program;

2. Instrumentation and control systems, including computer software and hardware due to significant changes in computer technology and lack of technical support for the existing system; and

3. Reverse osmosis membrane and pumping systems may be replaced with newer technology, but likely be located within equipment trailers as originally presented in the approved site plans associated with CDP 4-96-119.

Notwithstanding these minor changes in equipment, the desalination/reverse osmosis process described in CDP 4-96-119 would be unchanged.

Processed raw seawater that is transported via the Desalination Facility's offshore intakes occurs onshore at the Desalination Facility.

1.2.3 Component 3. 520 East Yanonali Street – EEWWTP SCE Substation and Outfall Mixing Box

Brine is discharged from the desalination plant to a brine mixing basin located on the southwest corner of the EEWWTP property. The structure is used to mix brine with effluent before the co-mingled flows discharge to the City's ocean outfall. No structural changes are proposed for the existing brine mixing basin. The City's existing CDP and National Pollution Discharge Elimination System (NPDES) permits include conditions regarding the discharge of brine from the Desalination Facility, with which the Desalination Facility will comply. As a component of this compliance, a brine effluent sampling station shall be constructed in near proximity to the existing mixing basin and made operational prior to the reactivation of the Desalination Facility. The existing mixing basin has functioned as the sampling station while the Desalination Facility has been in standby mode. Additional flow metering equipment and communications will also be added.

Plant facility piping and electrical distribution banks run underground through several corridors of the Desalination Facility and EEWWTP sites, and to the Pacific Ocean. The piping and distribution banks include intake water piping, brine water piping, and product water piping, as well as conduit for power and plant control communication. Some replacement of power and communication cable is anticipated due to age and exposure. The replacement will be accomplished from existing access points (i.e., previously installed pull boxes).

1.2.4 Component 4. 310 West Padre Street – Padre Pump Station

Padre Pump Station upgrades include replacing buried piping, converting Padre Well to a monitoring well, replacing existing entrance gate, installing new suction side piping, separating exiting Padre Well discharge piping.

1.2.5 Component 5. Offshore Intake Facilities Including the Beach Weir Box

The offshore portions of the Desalination Facility are located offshore of East Beach and southeast of the terminus of Stearns Wharf in the City of Santa Barbara. The ocean intake consists of two offshore concrete intake structures that are designed to accommodate intake pumps, check valves, and intake screens. The intake pipeline continues inside the abandoned outfall to a raw water booster pump station, located onshore at 420 Quinientos Street. Prior to reaching the booster pump station, the intake pipeline connects to an outfall weir box on the beach. The weir box serves as a transition point for power and communication wires for the offshore intake pumps. These wires transition from inside the 36-inch HDPE piping to a duct bank that continues along the intake pipe alignment to the filter feed pump station at 420 Quinientos Street, which is located on the site of the EEWWTP.

In order to avoid and minimize impacts to water quality during offshore Project activities, the City proposes to implement a Turbidity Monitoring Plan (TMP). The TMP will allow a diver to vacuum (i.e., collect) the sediment generated with repair and maintenance activities in a relatively precise manner and relocate it to a previously selected disposal area. The City anticipates that this method will minimize the amount of turbidity generated from the Project activities. The TMP would assign a qualified observer to be on site during all Project activities that could generate sediment (e.g., intake structure or screen cleaning) to document levels of project-induced turbidity. If turbidity exceeds certain specified thresholds, the TMP will empower the monitor to modify or halt project activities, in consultation with all responsible agencies, including the CCC, RWQCB, and USACE.

The City also proposes to implement an Oil Spill Response Plan, consisting of a U.S. Coast Guard-approved Shipboard Oil Pollution Emergency Plan (SOPEP) and a general oil spill response protocol for any support vessels that are used during the Project activities. All offshore Project repair and maintenance activities also would include marine mammal monitoring, which would establish a 500-foot (152-meter) Minimum Safety Zone in the project area offshore. Two National Oceanic and Atmospheric Administration Fisheries-approved marine mammal monitors would be on watch on each vessel involved in the Project's offshore repair and maintenance activities. In the event that a marine mammal approaches within 200 feet of the work vessels during the repair and maintenance activities, the monitors shall notify the onsite construction foreman and initiate a cease-work order. The monitors also will have discretion to continue operations if they determine that the mammal is headed away from the 500-foot Minimum Safety Zone. All sightings will be documented in a log book, and photographs will be taken with a date stamp. Vessel speeds will be limited to less than 2 nautical miles per hour (knots), with the speed of support vessels (e.g., tug boats used to place anchors) moderated to 3 to 5 knots, to minimize the potential for collisions with marine mammals. Propeller noise and other noise associated with

repair and maintenance activities shall be reduced or minimized through reduction of vessel speed to the extent possible.

In addition, all Project vessels would avoid all hard-bottom habitats during anchoring by using pre-determined anchoring areas, as described in the *Utility Work Boat Anchoring Locations Subtidal Biological Survey Report* (Tenera 2014b), submitted concurrently herewith.

For the weir box activities, temporary fencing will be installed around the perimeter of the weir box on the beach to prevent inadvertent encroachment by crews and equipment to the surrounding beach area. Also, Best Management Practices (BMPs) must be implemented by the contractor as necessary at work and staging areas. Prior to weir box maintenance activities, the City will conduct biological surveys for roosting sensitive bird species. If present, the City will delay construction activity until the roosting birds have vacated the work area.

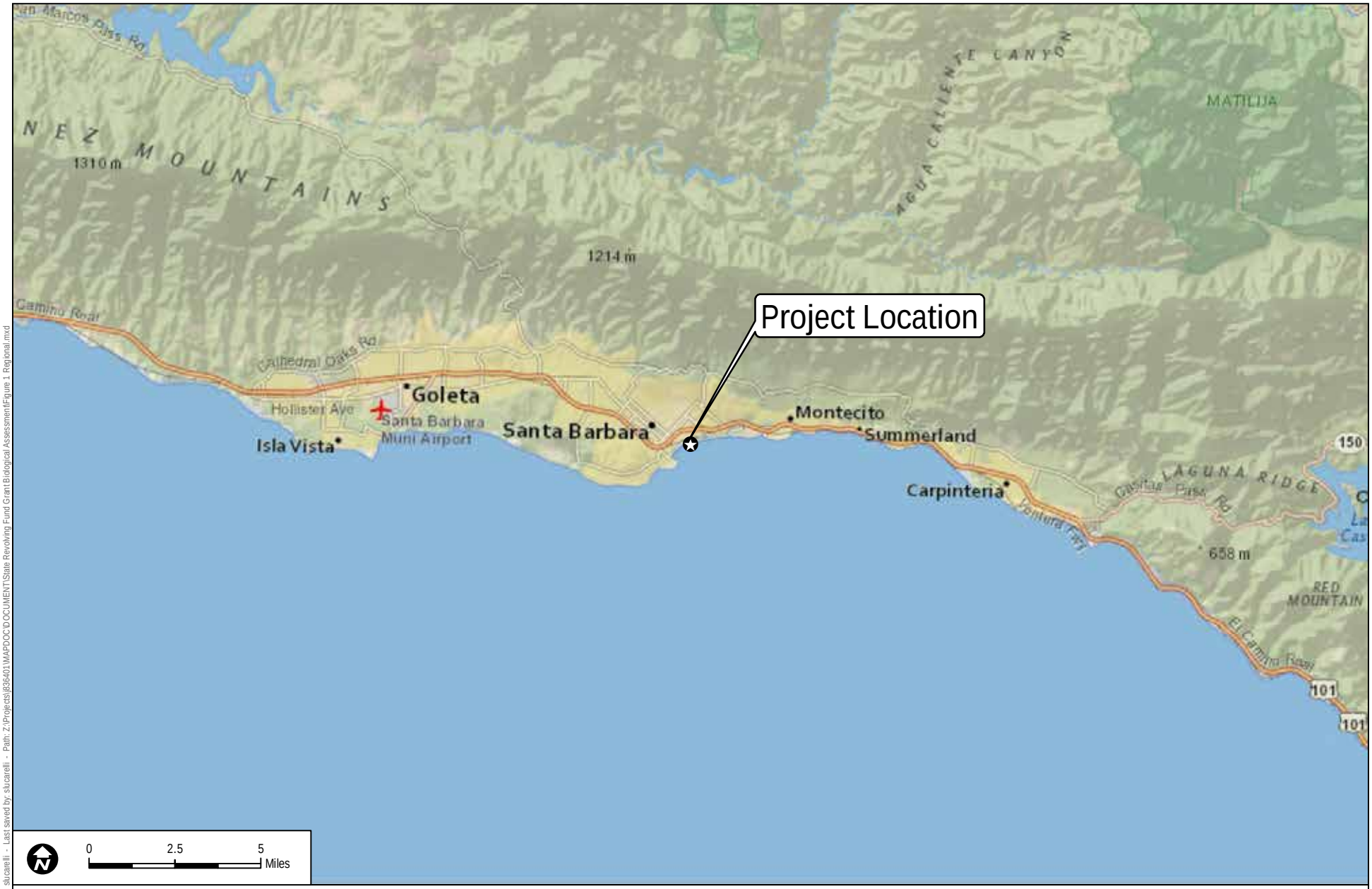

FIGURE 1

Regional Map

DUDEK

SOURCE: ArcGIS Online Basemap (Nat Geo)

CHARLES MEYER DESALINATION FACILITY

State Revolving Fund Grant Biological Assessment

Date: 12/5/2014 - Created by: slucarelli - Last saved by: slucarelli - Path: Z:\Projects\836401\MAPDOC\DOCUMENT\State Revolving Fund Grant Biological Assessment\Figure 1 Regional.mxd

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1 inch = 2,000 feet

SOURCE: ArcGIS Online Basemap (USA Topo)

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 2

Vicinty Map

State Revolving Fund Grant Biological Assessment

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2.0 REGULATORY FRAMEWORK

This section outlines the federal, state, and local regulations pertinent to the biological resources with potential to occur within and adjacent to the Desalination Facility Project. Some of the biological resources that could be affected by the Project are regulated by resource agencies, which often overlap in jurisdiction. This section identifies and discusses the various programs regulating state- and/or federally listed threatened or endangered plants species and wildlife species and jurisdictional aquatic/ hydrological features, such as drainages, streambeds, riparian habitat, and wetlands.

2.1 Sensitive Vegetation Communities Defined

For the purpose of this Biological Assessment, sensitive vegetation communities are those plant communities or habitats described as the following:

- Alliances on CDFW's Natural Communities List with a State rank of S1, S2, or S3 (CDFG 2010);
- Terrestrial natural communities in Holland (1986) receiving an asterisk (*);
- Vegetation communities or habitats listed in the California Natural Diversity Database (CDFW 2014a); and
- Considered locally sensitive.

2.2 Special-Status Plant Species Defined

For the purpose of this Biological Assessment, special-status plant species are those plants:

- Designated as either rare, threatened, or endangered by CDFW or the USFWS and are protected under either the California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.) or federally Endangered Species Act (ESA) (16 U.S.C. § 1531 et seq.), or meet the CEQA definition for endangered, rare, or threatened (Cal. Code Regs., tit. 14, § 15380(b),(d));
- Are candidate species being considered or proposed for listing under these same acts; or
- Are of expressed concern to resource/regulatory agencies or local jurisdictions. This includes plants included on the CDFW *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2014a) as well as species with a California Rare Plant Ranking (CRPR) of 1, 2, or 4 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered

Plants of California (CNPS 2014). Plants included on the CNPS Inventory are classified as follows:

- CRPR 1A: plants presumed extinct in California;
- CRPR 1B: plants rare, threatened, or endangered in California and elsewhere;
- CRPR 2: plants rare, threatened, or endangered in California, but more common elsewhere;
- CRPR 4: plants of limited distribution – a watch list.

2.3 Federal Endangered Species Act (1973)

The federal Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the USFWS and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. The ESA defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under the provisions of Section 9(a)(1)(B) of the ESA (16 U.S.C. 1531 et seq.), it is unlawful to "take" any listed species. Take is defined in Section 3(19) of the ESA as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." A Final Rule published in the Federal Register on November 8, 1999 (64 FR 60727–60731), further defines "harm" as any act that kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns (e.g., nesting or reproduction) of fish or wildlife. Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification that result in injury to or death of species, which therefore are defined as forms of take. These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species.

In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant species or wildlife species, the property owner and agency are required to consult with USFWS. Take prohibitions in Section 9 of the ESA (16 U.S.C. 1531 et seq.) do not expressly encompass all plant species. Property owners may take listed plant species without violating the take prohibition if:

- The proposed development is private and does not require federal authorization or permit.
- There are no special federal regulations under Section 4(d) that prohibit take of the plant species.
- There are no state laws prohibiting take of the plant species.

Section 9(a)(2) of the ESA (16 U.S.C. 1531 et seq.) addresses the protections afforded to listed plant species. Unlike the CESA, the ESA provides protection to invertebrate species by listing them as threatened or endangered.

2.4 National Marine Fisheries Service (NMFS)

The Magnuson-Stevens Fishery Conservation Management Act (Section 305(b)) is the primary law governing marine fisheries management in U.S. federal waters. Its purpose is to promote the optimal use of coastal fisheries and it is administered by National Marine Fisheries Service (NMFS) on behalf on the Secretary of Commerce.

As part of the USACE Section 404 permit application process, the City will conduct and provide an assessment of Essential Fish Habitat (EFH), which is defined under the Magnuson-Stevens Act as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." NMFS is required to make EFH Conservation Recommendations to federal agencies if their actions would adversely impact EFH.

2.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource (16 U.S.C. 703–712). The primary motivation for the international negotiations was to stop the “indiscriminate slaughter” of migratory birds by market hunters and others. Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA protects over 800 species of birds, which are listed in the Code of Federal Regulations (50 CFR 10.13).

The MBTA prohibits the “take” of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, take is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so. Additionally, Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” (Executive Order no. 13186) requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations. The Executive Order requires federal agencies to work with the USFWS to develop a memorandum of understanding. The USFWS reviews actions that might affect these species.

2.6 Jurisdictional Waters of the U.S./State, Including Wetlands

There are three primary agencies that regulate activities within inland streams, wetlands, and riparian areas in California: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (CWA) and the Rivers and Harbors Act Section 10; the CDFW regulates activities under Sections 1600–1616 of the Fish and Game Code; and the RWQCB regulates activities under the Porter-Cologne Water Quality Control Act and Section 401 of the CWA. The following discussion provides information on each agency's regulatory program. In addition, Section IV, Appendix G (Environmental Checklist Form), of the *California Environmental Quality Act (CEQA) Statutes and Guidelines* (AEP 2014) suggests an evaluation of impacts to "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."[1]

2.6.1 U.S. Army Corps of Engineers

Pursuant to Section 404 of the CWA, the USACE regulates the discharge of dredged and/or fill material into "waters of the United States." The term "waters of the United States" (waters) is defined in the Definition of Waters of the United States in the USACE regulations (33 CFR 328.3(a)) as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands;

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:

    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

[1] Also see State Guidelines for Implementation of the California Environmental Quality Act (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387)

iii. Which are used or could be used for industrial purpose by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;

5. Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;

6. The territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

The term "wetlands" (a subset of waters) is defined in 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark, which is defined in 33 CFR 328.3(e) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

On June 5, 2007, the USACE and Environmental Protection Agency (EPA) released guidance on the geographic extent of jurisdiction under the federal CWA, based on the U.S. Supreme Court's interpretation of the CWA in *Rapanos v. United States* and *Carabell v. Army Corps of Engineers*, 126 S. Ct. 2208 (USACE and EPA 2008). The USACE /EPA Guidance states that the USACE will regulate traditional navigable waters (TNW), adjacent wetlands (directly abutting TNWs), and relatively permanent waters tributary to TNWs and adjacent wetlands. Non-navigable tributaries that are not relatively permanent nor are wetlands adjacent to such tributaries will be assessed on a case-by-case basis to determine whether they have a "significant nexus" to a TNW. A significant nexus occurs when waters, including adjacent wetlands, affect the chemical, physical, or biological integrity of TNWs. Factors considered during the significant nexus evaluation include:

1. Flow characteristics and functions of the tributary itself in combination with the functions performed by any wetlands adjacent to the tributary

2. Hydrologic characteristics, including but not limited to volume, duration, and frequency of flow; proximity to TNW; size of the watershed; average annual rainfall; and average annual winter snow pack

3. Ecological characteristics including but not limited to the ability of tributaries to carry pollutants and flood waters to TNWs, provide aquatic habitat that support TNW, trap and filter pollutants or store flood waters, and maintain water quality.

The discharge of dredge or fill material into waters, including wetlands, requires authorization from the USACE prior to impacts.

For tidally influenced waters, the USACE has two limits to jurisdiction: one for Section 10 and one for Section 404. The shoreward limit to the USACE Regulatory program jurisdiction under the Section 10 authorities of the Rivers and Harbors Act in coastal areas extends to the line on the shore reached by the plane of the mean high water, which is 5 feet above mean low water = 0 datum. The shoreward limit for the Regulatory programs jurisdiction under the USACE Section 404 authorities is based on the high tide line. If there are wetlands meeting the USACE criteria abutting or adjacent the high tide line, then the USACE jurisdiction under section 404 would extend to the limit of those wetlands.

Rivers and Harbors Act, Section 10, establishes permit requirements to prevent unauthorized obstruction or alteration of any navigable water of the U.S. This covers construction, excavation, or deposition of materials in, over, or under such waters, or any work that would affect the course, location, condition, or capacity of those waters (33 USC 401, et seq. and 403). Section 10 is triggered concurrently with Section 404 when activities occur within a navigable waterway and the potential exists for a disruption to navigation. Reactivation actions may include modifications and/or re-installation of intake screens, which could require permitting under Section 10. However, because the activities would also require a Section 404 permit, the Section 10 authorization may be, and typically is addressed in a combined process with the Section 404 permit action.

The City is currently pursuing a Nationwide Permit 3 (Maintenance), which will be submitted in December 2014. A Letter of Permission (LOP) is a possible outcome, which may shorten the time required to receive the final permit.

2.6.2 California Department of Fish and Wildlife

In accordance with Section 1600 et seq. of the California Fish and Game Code (Streambed Alteration), the CDFW regulates activities which “will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank, of any river, stream, or lake designated by the CDFW in which there is at any time an existing fish or wildlife resource or from

which these resources derive benefit." The CDFW takes jurisdiction to the top of bank of a stream, or the limit of the adjacent riparian vegetation, referred to in this report as "streambed and associated riparian habitats." Applications to the CDFW for Streambed Alteration under Section 1600 et. seq. must include a complete certified CEQA document.

In 14 CCR 1.72, CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation."

In 14 CCR 1.56, CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." Diversion, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife requires authorization from CDFW by means of entering into an agreement pursuant to Section 1602 of the Fish and Game Code.

Section 1600 et seq. does not extend to isolated wetlands and waters, such as small ponds not located on a drainage course, wet meadows, vernal pools, or tenajas, nor does it extend over marine waters influenced by the ebb and flow of the tide that lack a bed and bank form typical of stream channels.

Within estuary environments, a preponderance of evidence standard is necessary where it is not readily apparent where Section 1600 jurisdiction ends. Under this standard, the geometry of the water feature, the predominant salinity of the waters, the composition of vegetation, and the predominant fauna are used to determine the limits of CDFW jurisdiction under section 1600. Waters are not regulated under section 1600 of the Fish and Game Code where waters are principally marine, aquatic shorelines are shaped principally by tidal current and wave action not by fluvial processes, vegetation is saline marsh and not brackish or freshwater vegetation, and marine fish and invertebrate communities are prevalent. Conversely, areas dominated by fresh and brackish salinities and freshwater aquatic species, with fluvial erosion patterns, are regulated under section 1600.

2.6.3 California Regional Water Quality Control Board

Pursuant to Section 401 of the federal CWA, the RWQCB regulates discharging waste, or proposing to discharge waste, within any region that could affect a "water of the State" (Water Code, Section 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code, Section 13050(e)). Before the USACE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the

project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) under the Porter-Cologne Water Quality Control Act. Applications to the RWQCB must include a complete certified CEQA document. The City is also currently pursuing a NPDES/CWA 401 permit.

2.6.4 California Coastal Commission

Under the California Coastal Act (CCA), the CCC regulates impacts to wetlands in the "coastal zone" and requires a coastal development permit for almost all development within this zone. From three miles seaward the coastal zone generally extends approximately 1,000 yards inland. In less developed areas, it can extend up to 5 miles inland from the mean high tide line, but can also be considerably less than 1,000 yards inland in developed areas.

The CCA also protects designated sensitive coastal areas by providing additional review and approvals for proposed actions in these areas. Section 30121 of the CCA defines wetlands as "...lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, swamps, mudflats, and fens…" The CCA allows disking, filling, or dredging of wetlands for certain uses, such as restoration. The CCA also directs each city or county within the coastal zone to prepare a Local Coastal Program for CCC certification (CCC 2014).

In contrast to the USACE, which uses a three-parameter definition to delineate wetlands, the CCC essentially uses the Cowardin method of wetlands classification, which defines wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

The CCC wetland definition is generally more encompassing than either the USACE or CDFW definition in most respects. However, Section 13577(b) of the Administrative Regulations suggest that, where conditions are not capable of supporting hydric soils or hydrophytic vegetation, hydrologic indicators of saturation or surface waters should be expressed on an annual basis ("at some time during each year") rather than under ordinary high water conditions as is the case under the federal regulatory standard. The City is currently pursuing a Coastal Development Permit, which was submitted in October 2014.

2.7 Local Laws, Ordinances, Regulations, and Standards

In addition to the federal and state regulations identified above, the following local laws, ordinances, regulations, and standards apply to the environmental review of potential impacts on biological resources as a result of the proposed Project.

2.7.1 City of Santa Barbara's General Plan

The City of Santa Barbara's General Plan (City of Santa Barbara 2011) identifies goals, policies, and implementation actions to protect the City's natural resources including air quality, biology, surface and ground water resources, noise, and visual resources. Policies are set forth for the protection of these resources accordingly. The relevant General Plan policies are as follows. Resource-specific policies are included in *Section 6, Conclusion and Recommendations*.

City of Santa Barbara's General Plan 2011 (Environmental Resources Element)

Biological Resources Policies

ER11. **Native and Other Trees and Landscaping.** Protect and maintain native and other urban trees, and landscaped spaces, and promote the use of native or Mediterranean drought-tolerant species in landscaping to save energy and water, incorporate habitat, and provide shade.

ER12. **Wildlife, Coastal and Native Plant Habitat Protection and Enhancement.** Protect, maintain, and to the extent reasonably possible, expand the City's remaining diverse native plant and wildlife habitats, including ocean, wetland, coastal, creek, foothill, and urban-adapted habitats.

Water Supply

ER15. **Long-Term Water Supply Plan.** The City shall update and maintain the currency of the City Long-Term Water Supply Plan to accommodate needs for the next 20-year period, including all of the following measures:

> *ER*15(5). Desalination: The future role of desalination should be evaluated, considering issues such as: State policy encouraging development of desalination capacity, reliability, rate impacts, and capital cost for reactivation, energy use, environmental impacts, and value during extended drought and other water supply emergencies.

Hydrology, Water Quality and Flooding Policies

ER19. **Creek Resources and Water Quality.** Encourage development and infrastructure that is consistent with City policies and programs for comprehensive watershed planning, creeks restoration, water quality protection, open space enhancement, storm water management, and public creek and water awareness programs.

ER20. **Storm Water Management Policies.** The City's Storm Water Management Program's policies, standards and other requirements for low impact development to reduce storm water

run-off, volumes, rates, and water pollutants are hereby incorporated into the General Plan Environmental Resources Element.

ER21. **Creek Setbacks, Protection, and Restoration.** Protection and restoration of creeks and their riparian corridors is a priority for improving biological values, water quality, open space and flood control in conjunction with adaptation planning for climate change.

City of Santa Barbara's General Plan 2011 (1979 Conservation Element)

Biological Resources Policies

5.0 The habitats of rare and endangered species shall be preserved.

6.0 Intertidal and marine resources shall be maintained or enhanced.

11.0 Where Biological Resources policies conflict, the policy most protective of the natural environment shall prevail

2.7.2 City of Santa Barbara's Local Coastal Plan 2004

The California Coastal Commission regulates coastal development in the City of Santa Barbara through the certified local coastal plan (City of Santa Barbara 1981, amended 1994, last amended 2004). A local coastal plan is a document which describes local government's land use plans, zoning ordinances, zoning district maps, and implementing actions which, when taken together, meet the requirements of and implement the provisions of the Coastal Act at the local level. Policies are set forth for the protection of these resources. General relevant Local Coastal Plan policies are as follows:

Policy 6.2 The City will support and encourage the enforcement of all laws enacted for the purposes of preserving and protecting marine resources, maintaining optimum populations of marine organisms and maintaining the quality of the marine environment for the protection of human health.

Policy 6.6 Revetments, seawalls, bulkheads, groins, pipelines, outfalls and other necessary permitted construction shall be designed to eliminate or mitigate to the maximum extent adverse impacts on local shoreline sand supply.

Creek Environments

Policy 6.8 The riparian resources, biological productivity, and water quality of the City's coastal zone creeks shall be maintained, preserved, and, where feasible, restored.

Policy 6.10 The City shall require a setback buffer for native vegetation between the top of bank and any proposed project. This setback will vary depending upon the conditions of the site and the environmental impact of the proposed project.

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3.0 METHODOLOGY

3.1 Literature Review

The location of documented sensitive vegetation communities, special-status plant species, and special-status wildlife species present in the vicinity of the Project and that have potential to occur on-site were identified through a query of the California Natural Diversity Database (CNDDB), USFWS Database (USFWS 2014a), and USFWS Information, Planning, and Conservation System (USFWS 2014b). Six U.S. Geological Survey (USGS) 7.5 minute quadrangles (quads) were selected: Carpinteria, Goleta, Hildreth Peak, Little Pine Mountain, San Marcos Pass, and Santa Barbara (CDFW 2014a). Additional data sources were also referenced including the California Native Plant Society's online Inventory of Rare and Endangered Plants (CNPS 2014), and the on-line database Calflora: Information about California Plants for Education, Research and Conservation (Calflora 2014), the CDFW Special Animals List (CDFW 2014b), *Birds of Santa Barbara County, California* (Lehman 2014), and ebird (2014). Note: six quads were queried instead of the standard nine as the Project is along the Pacific Ocean and there are no quads to the southwest, south, or southeast of the Project.

3.1.1 Project Information from the City of Santa Barbara

The following plans, technical reports, project descriptions, and figures were used for this biological assessment:

- Biological Assessment for the El Estero Wastewater Treatment Plant's Tertiary Filtration Replacement and Secondary Treatment Projects (Dudek 2013)
- Draft Biological Assessment for the Charles Meyer Desalination Facility (Dudek 2014a)
- Habitat Assessment for the Western Snowy Plover (*Charadrius nivosus nivosus*), Santa Barbara Beach: East Beach, Santa Barbara, California. (Dudek 2014b)
- Preliminary Design Services to Recommission the Charles Meyer Desalination Plant for the City of Santa Barbara (Carollo 2014a)
- Santa Barbara Desalination Plant Reactivation, Biological Assessment Report for Intake Repair and Maintenance Activities (Tenera 2014a)
- Santa Barbara Desalination Plant Reactivation, Utility Work Boat Anchoring Locations Subtidal Biological Survey Report (Tenera 2014b)

- Submittal of Coastal Development Permit Application for Repair and Maintenance Activities at the Charles Meyer Desalination Facility Offshore Intake Structure (APN 017-191-003) (City of Santa Barbara 2014)
- Component 3 EEWWTP SCE Substation and Outfall Mixing Box figures (Carollo 2014b)
    - Figure 4-10. Outfall Mixing Box Improvements – Electrical Site Plan. City of Santa Barbara Charles Meyer Desalination Plant Reactivation.
    - Figure 4-32. Power Distribution Site Plan and Substation Detail. City of Santa Barbara Charles Meyer Desalination Plant Reactivation.
    - Figure 7. Proposes Site Layout. Final Effluent Sampler Station Project at El Estero Wastewater Treatment Plant.
- Component 4 Padre Pump Station figures (Carollo 2014b)
    - Figure 4-41. Padre Pump Station Site Plan. City of Santa Barbara Charles Meyer Desalination Plant Reactivation.
    - Figure 4-42. Padre Well Demolition Plan. City of Santa Barbara Charles Meyer Desalination Plant Reactivation.

3.2 Field Surveys

Dudek conducted a biological survey on December 4, 2014, as shown in *Table 1*. Additionally, this BA includes survey results from the Biological Assessment for the El Estero Wastewater Treatment Plant's Tertiary Filtration Replacement and Secondary Treatment Projects (Dudek 2013). The survey included vegetation mapping and a habitat assessment for special-status plant species and special-status wildlife species.

Table 1
Survey Dates, Times, and Conditions

Date / Time	Site Conditions	Biologist
December 4, 2014 12:15 pm – 1:15 pm	Partially overcast, approximately 20 percent cloud cover with light (5-6 mph) west winds. Temperature 66-67°F.	Heather Moine

Notes:
°F – degrees Fahrenheit
mph – miles per hour

3.2.1 Biological Survey Area

The field survey for the Desalination Facility Project was conducted within accessible natural areas where potential habitat for the sensitive vegetation communities, special-status plant species, and special-status wildlife species were present. This resulting biological survey area (BSA) did not cover the entire Desalination Facility and associated component areas, *Figure 3A – Figure 3E*, since these areas were already developed. Specifically, all developed areas (desalination facilities, treatment plant facilities, roads, administrative buildings, etc.) that did not contain elements of natural vegetation were not surveyed.

3.2.2 Biological Assessment Area

The Biological Assessment Area (BAA) includes the BSA and areas beyond the BSA that have potential to be impacted, directly or indirectly by the proposed Project activities, and not only the area immediately surrounding the activities. For the proposed Project, the BAA includes the access routes to the five components and the five components.

The Component 1 Desalination Facility Filter Feed Pump Station and Chemical Storage Area BAA includes the access route to the filter feed pump station and chemical storage area from North Calle Cesar Chavez along Quinientos Street, through the EEWWTP access gate and along the asphalt road to the filter feed pump station and chemical storage area.

The Component 2 Desalination Facility BAA includes the entire Desalination Facility property and access from East Yanonali Street.

The Component 3 EEWWTP SCE Substation and Outfall Mixing Box BAA includes a portion of the Desalination Facility property on the north side of East Yanonali Street and access routes within EEWWTP property along asphalt roads to the SCE Substation on the north side of the aeration basins building within the northern portion of the EEWWTP property and the Outfall Mixing Box BAA within the southwestern portion of the EEWWTP property.

The Component 4 Padre Pump Station BAA includes Castillo Street between West Los Olivos Street and West Mission Street, a portion of West Mission Street, and the Padre Pump Station on the west side of Castillo Street between West Los Olivos Street and West Padre Street.

The Component 5 Offshore Intake Facilities Including the Beach Weir Box BAA includes the two existing intake structures located approximately 740 meters (2,430 feet) offshore from East Beach and 475 meters (1,560 feet) east of the end of Stearns Wharf and the access route to the weir box and weir box. Specifically, the BAA includes the access routes along and adjacent to the public bike bath, access through the sand substrate located directly east of the weir box, and the area surrounding the weir box. The access route will go through a parking lot, public bike

lane, and beach regularly used by the public, City Parks & Recreation Lifeguard, and other City services.

Specifically, access to the weir box is proposed from the City parking area south of East Cabrillo Street near the Skater's Point Skate Park. The parking lot is located approximately 0.15 miles west of the site (*Figure 2*)**.** Maintenance truck(s) will travel south to the access ramp located along the south boundary of the parking lot near the middle and enter the pedestrian boardwalk, where the vehicle will turn to the east towards the bridge over the Laguna Channel. Directly after crossing the bridge, maintenance truck(s) will turn south entering the beach, where they will continue east adjacent to the iceplant until directly north of the weir box. The final approach would require maintenance truck(s) to traverse over approximately 50 feet of beach sand to access the weir box.

3.2.3 Vegetation Community Mapping

Vegetation mapping was performed in the field, through interpretation of field maps with a high quality aerial photographic base (Bing 2014) and/or delineation using a Trimble Geo XT Global Positioning System (GPS) unit capable of submeter accuracy. The maximum scale of the field map was 940-scale (1 in. = 78 ft.) base. The GPS data was downloaded into GIS ArcView for placement onto an aerial figure. In combination with the GPS data, GIS technicians, using ArcView, digitized the delineated vegetation boundaries from field maps to create portions of the vegetation community map not mapped with a GPS unit. Vegetation mapping covered all areas within the BSA. All surveys were conducted during daylight hours under weather conditions that did not preclude observation of special-status plant species (e.g., surveys were not conducted during heavy fog or rain).

In September 2010, the CDFW, Vegetation Classification and Mapping Program, published the *List of Vegetation Alliances and Associations* (CDFG 2010) and *Natural Communities List*, which replaces all other lists of terrestrial natural communities and vegetation types developed for the California Natural Diversity Database (CNDDB). The "list" uses the scientific name of the dominant species in that alliance as the alliance name based on the *Manual of California Vegetation*, Second Edition (MCV2; Sawyer et. al 2009), which is the California expression of the National Vegetation Classification. This vegetation classification system focus on a quantified, hierarchical approach that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages). This system replaced the naming system in a *Preliminary Description of the Terrestrial Natural Communities of California* (Holland 1986), which until 2010 was the standard vegetation community nomenclature for the CNDDB and many other State and local agencies and plans. The nomenclature for on-site vegetation communities reflects the MCV2 and NCL classification system (2009). It should be noted that portions of the site contained an

alliance or vegetation community not included in as part of MCV2 or NCL vegetation classification systems. In these areas, the vegetation was mapped and identified by the dominant plant species.

3.2.4 Habitat Assessment

Habitat characteristics observed in the field were compared with characteristics of habitat known to be occupied by special-status plant species and special status wildlife species potentially occurring in the Project vicinity. All wildlife species detected within the BSA were documented. Plant species occurring within the BSA were documented. Scientific names of plant species followed *the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2014). A list of plant species identified during the survey was created and photographs were taken to document site conditions.

3.3 Survey Limitations

As described in Section 3.2, one field survey was conducted at the five proposed Project locations. This field survey focused on vegetation mapping, habitat suitability, and documentation of any observed special-status species. Since Dudek previously conducted a focused western snowy plover habitat assessments (Dudek 2014b),a technical memorandum addresses potential impacts to the California grunion and marine mammals (Dudek 2014c), prepared a Biological Assessment for the EEWWTP (Dudek 2013), the single field survey described here was a general assessment of the project locations. Additionally, Tenera conducted biological assessments for the offshore intake structure complex (Tenera 2014a) and utility work boat anchoring locations (Tenera 2014b).

As described in Section 4.0, there is a potential for several special-status species to occur in the BAA. The BAA is mostly developed with buildings and impervious surfaces and has high volumes of human activity that may lessen the likelihood for special-status species to persist in these areas. Protocol-level or focused species surveys were not conducted since the site survey was conducted outside the suitable surveying periods for special-status species with a potential to occur.

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1 inch = 400 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014)

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 3A

Desalination Facility Filter Feed Pump Station & Chemical Storage Area

State Revolving Fund Grant Biological Assessment

Date: 12/5/2014 - Created by: dvanelli - Last saved by: dvanelli - Path: Z:\Projects\8640\MAP\DOC\DOC\UNEXT\State Revolving Fund Grant Biological Assessment\Figure 3 State Revolving Fund Grant Biological Assessment.mxd

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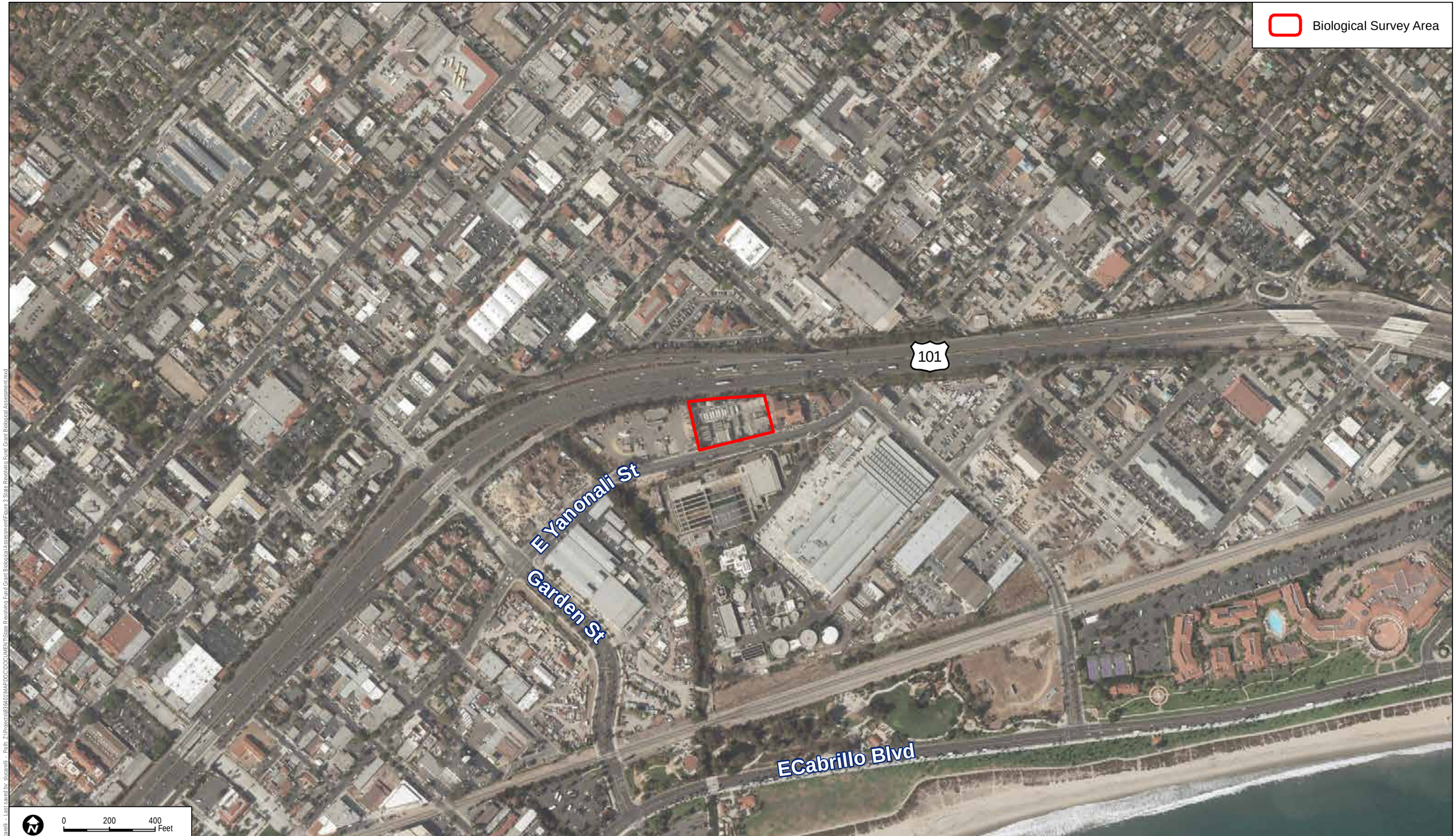

1 inch = 400 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014)

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 3B

Desalination Facility

State Revolving Fund Grant Biological Assessment

Date: 12/5/2014 Created by: slunsnell Last saved by: slunsnell Path: Z:\Projects\8046\MAP\DOC\DOCUMENT\State Revolving Fund Grant Biological Assessment\Figure 3 State Revolving Fund Grant Biological Assessment.mxd

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1 inch = 400 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014)

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 3C

EEWWTP SCE Substation & Outfall Mixing Box

State Revolving Fund Grant Biological Assessment

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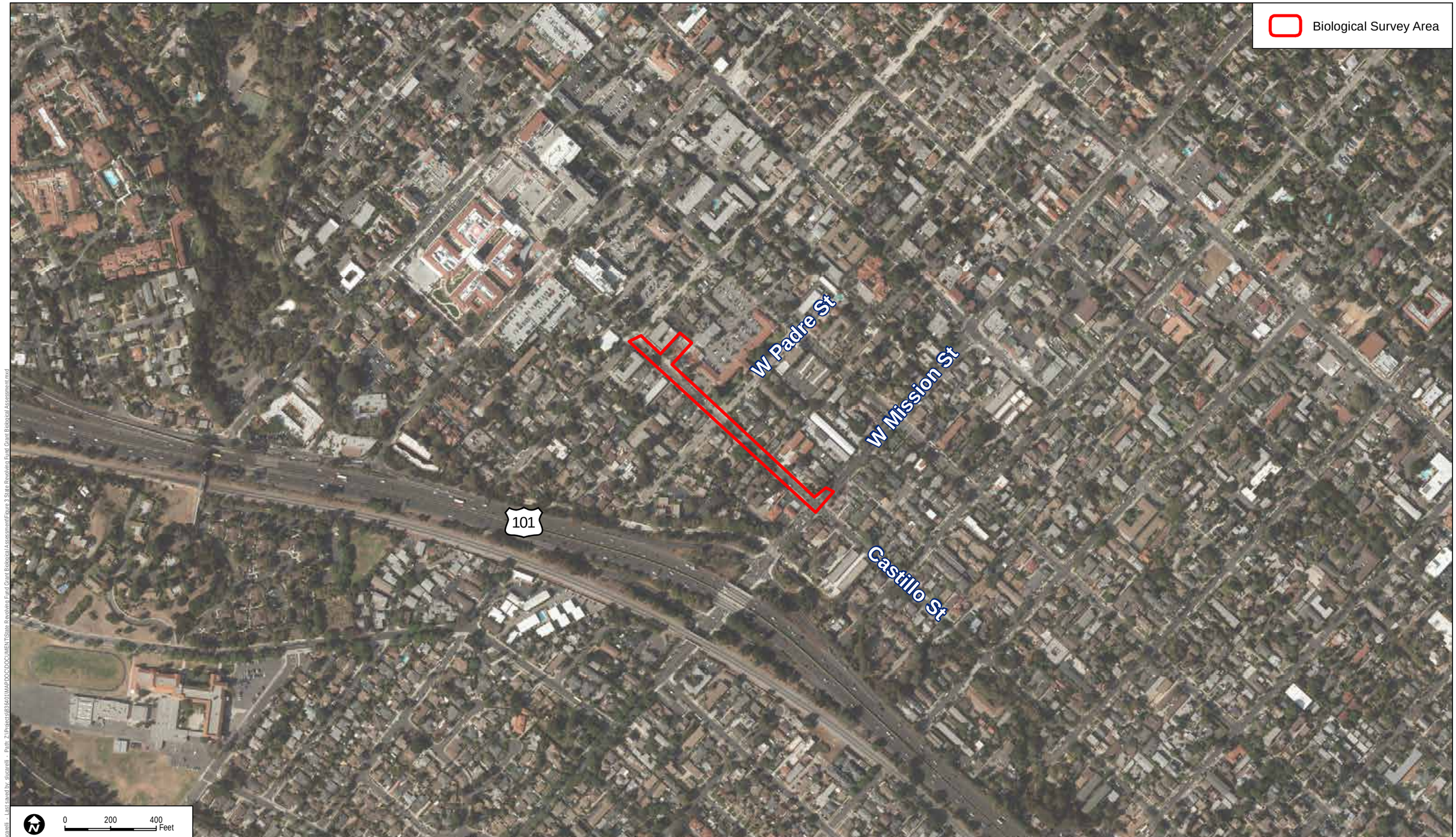

1 inch = 400 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014)

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 3D

Padre Pump Station

State Revolving Fund Grant Biological Assessment

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1 inch = 400 feet

SOURCE: 2012 CIRGIS Aerial, Dudek (2014)

DUDEK

CHARLES MEYER DESALINATION FACILITY

FIGURE 3E

Offshore Intake Facilities Including the Beach Weir Box

State Revolving Fund Grant Biological Assessment

Date: 12/5/2014 - Created by: dlucarelli - Last saved by: dlucarelli - Path: J:\Projects\8840\MAP\DOC\DOCUMENT\State Revolving Fund Grant Biological Assessment\Figure 3 State Revolving Fund Grant Biological Assessment.mxd

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4.0 RESULTS

A total of two vegetation communities, one identified in MCV2 and one not identified in MCV2 (Sawyer et al. 2009), and two additional land cover types were identified during the survey. One special-status plant, nine special-status wildlife species, and several marine mammals have potential to occur within the BSA and or BAA. In addition, one sensitive vegetation community and federally designated critical habitat for two species occurs in the BAA. Vegetation communities and wildlife habitats are described in *Section 4.1*. Habitat suitability for special-status plant species is discussed in *Section 4.2*. Habitat suitability for special-status wildlife species is described in *Section 4.3*. Sensitive vegetation communities are discussed in *Section 4.4*.

4.1 Vegetation Communities and Wildlife Habitats

Vegetation communities and land cover differ greatly within the BSA. A large portion of the Project area is dominated by impervious developed surfaces and ruderal/ornamental vegetation. However, there is some riparian vegetation along the Laguna Channel, beach habitat around the weir box, and the ocean around the offshore intake facilities.

The Component 1 Desalination Facility Filter Feed Pump Station and Chemical Storage Area is within an already developed portion of the EEWWTP property in the southeast corner. The pump station and chemical storage area is surrounded by landscaped vegetation, rocky ground cover, and the paved roadway.

The Component 2 Desalination Facility is a built-out desalination plant originally built in 1991 and operated from March through June 1992. The facility has since been off-line and pumps, tanks, and piping have been maintained through an annual maintenance contract. The desalination plant is dominated by impervious structures and roads with landscape vegetation along the outer boundary and some landscape vegetation adjacent to parking areas.

The Component 3 EEWWTP SCE Substation and Outfall Mixing Box BSAs are dominated by impervious developed surfaces and ruderal/ornamental vegetation. The southwestern portion of the EEWWTP and BSA, where the outfall mixing box is located, includes the Laguna Channel and associated riparian vegetation. Vegetation in this BSA is divided between the developed and ruderal/ornamental vegetation and the more riparian vegetation associated with Laguna Channel. The more upland area within the EEWWTP is dominated by non-native trees, Rosewood (*Tipuana tipu*), shrubs, and landscaped grass. Within the BSA the Laguna Channel consists of a mixture of native riparian vegetation including red willows (*Salix laevigata*), Douglas' sagewort (*Artemisia douglasiana*), Fremont cottonwood (*Populus fremontii*), California live oak,

California wildrose (*Rosa californica*), California blackberry (*Rubus ursinus*), and white alder (*Alnus rhombifolia*).

The Component 4 Padre Pump Station is within a residential neighborhood adjacent to Santa Barbara City College District facilities. Padre Pump Station upgrades include piping within existing streets lined with vegetation including shrubs, ruderal/ornamental vegetation, and California live oak (*Quercus agrifolia*).

The Component 5 Offshore Intake Facilities Including the Beach Weir Box is in natural settings. East Beach, including the BSA, typically experiences a high level of human activity. During the site visit there was a moderate to high level of human activity, with foot traffic occurring along the shoreline, potential homeless sleeping/wandering adjacent to the weir box, and both foot and bicycle traffic occurring along the public bike path located approximately 115 feet north of the weir box. There was a moderate level of trash observed within 300 linear feet of the weir box that included items such as cans, discarded blankets, and wrappers.

The offshore intake facilities supported a dense growth of red and brown algae that was not present on the vertical surfaces. The most abundant taxa of red algae on the rim surface were *Rhodymenia* spp., *Chondracanthus corymbiferus/exasperates*, and species from the *Halymenia-Schizymenia* complex. Differences were observed among the brown algal species growing on the upper rims of the two intakes. Giant kelp (*Macrocystis pyrifera*) and feather boa kelp (*Egregia menziesii*) were present on Intake A, but not on Intake B, while bladder chain kelp (*Cystoseira osmundacea*) was present on Intake B but not on Intake A. Giant sea palm kelp (*Pterygophora californica*) was present on the upper rim surfaces of both intakes. The most abundant macroinvertebrates observed on the upper rim surfaces were ostrich-plume hydroids (*Aglaophenia* spp.), anemones (*Anthopleura* spp.), and stalked tunicates (*Styela montereyensis*). No motile invertebrates such as crabs, sea stars, urchins, or mollusks were observed on the horizontal rim surface of either intake

The Beach Weir Box BAA contains areas of open, lose sand bordered to the south by the Pacific Ocean and to the north by a dense growth of non-native iceplant (*Carpobrotus edulis*), patches of Bermuda grass (*Cynodon dactylon*), and scattered telegraph weed (*Heterotheca grandiflora*). The width of suitable nesting substrates (i.e., from the iceplant to observed high-tide line) measured approximately 80 feet (east of the weir box) to 18 feet (directly north of the weir box). The general topography consists of a gentle slope between the iceplant and high-tide line.

A total of four general land cover types were mapped during field surveys, one of which is a vegetation community identified in Sawyer et al. (2009) and CDFG (2010): red willow thickets. One native forb vegetation community was observed in the BSA, Douglas' sagewort, and two

additional land cover types, ruderal/ornamental and developed, were mapped. The vegetation communities and other land cover types are listed in *Table 2* and further described below.

Table 2
Summary of Vegetation Communities and Land Cover Types in the Biological Survey Area

Physiognomic Category	General Habitat	Vegetation Communities	Rarity Ranking Global/State
Woodlands and Tree Clusters (Riparian)	Woodlands and Tree Clusters	Red willow thickets	G3/S3
Herbaceous Alliances and Stands (Riparian)	Forb Dominated	Douglas' sagewort	NA
Other Habitats		Ruderal/Ornamental (RUD/ORN)	NA
Non-Vegetated Areas		Developed (DEV)	NA

Notes:
NA – Not identified as a vegetation community in Sawyer et al. (2009)
Invasive – No rarity rank since species is invasive.
G3/S3: 21-100 viable occurrences worldwide/statewide, and/or more than 2,590-12,950 hectares;

4.1.1 Red Willow Thickets

The red willow thickets (RWT) alliance includes red willow (*Salix laevigata*) as the dominant tree in the canopy and is recognized by the *List of Vegetation Alliances and Associations* (CDFG 2010) and described in *A Manual of California Vegetation* (Sawyer et al. 2009). Red willow thickets have an open to continuous tree canopy cover less than 20 meters (66 feet) in height, open to intermittent cover in the shrub layer, and variable herbaceous layer. Red willow thickets communities are found in ditches, floodplains, lake edges, and low-gradient deposits along streams (Sawyer et al. 2009). Red willow thickets occur along the western portion of the EEWWTP property, but only along the Laguna Channel along the southwestern boundary. Associated species occurring within this community in the BSA are white alder California sycamore (*Platanus racemosa*), Fremont cottonwood, California live oak, California blackberry, and California wildrose.

4.1.2 Douglas' sagewort

Douglas' sagewort [mugwort] (MWT) contains stands of Douglas' sagewort (*Artemisia douglasiana*) perennial herbs. Douglas' sagewort is not recognized by MCV2 (Sawyer et al. 2009) as an herbaceous alliance. However, stands of Douglas' sagewort within the BSA were mapped due to the size and extent of their presence. Douglas' sagewort is a native perennial herb that occurs in yellow pine forest, foothill woodland, chaparral, valley grassland, and wetland-riparian habitats. Douglas' sagewort stands occur within the BSA, along the Laguna Channel, adjacent to the red willow thickets.

4.1.3 Ruderal/Ornamental

Ruderal/Ornamental (RUD/ORN) areas within the BSA are dominated by non-native grasses, non-native forbs, non-native trees, ornamental landscape plants, and landscaped grass. Species observed include smilograss (*Stipa miliacea* var. *miliacea*), slender oat (*Avena barbata*), compact brome (*Bromus madritensis*), Canadian horseweed (*Erigeron canadensis*), cheeseweed mallow (*Malva parviflora*), prickly lettuce (*Lactuca serriola*), and Rosewood. Within the BSA, ruderal/ornamental land cover occurs among facilities, administrative buildings, along paved roads, between residential and commercial buildings, and between the native vegetated Laguna Channel and adjacent paved road.

4.1.4 Developed

Developed (DEV) areas are those that are absent of vegetation and contain impervious development surfaces such as facility buildings, administrative buildings, and paved roads.

4.2 Special-Status Plant Species

The CNDDB, USFWS, and CNPS Rare and Endangered Plant Inventory queries returned 47 special-status plant species that have been documented within the surrounding six quads of the Project. Based on Dudek's habitat suitability analysis, only 17 of the plant species had potential to occur within the BSA or BAA (i.e., Target List), *Table 3*. No special-status plant species were added to the target list or observed in the field.

Table 3
Special-Status Plant Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Habitat Requirements/life form/blooming period/	Site Suitability/ Survey Results	Potential to Occur within the BAA
Amsinckia douglasiana	Douglas' fiddleneck	None/ None/ 4.2	Cismontane woodland, Valley and foothill grassland/Monterey shale, dry/ annual herb/ Mar-May/ 0-6,398 feet	No suitable habitat lacking/ Not observed	Unlikely
Arenaria paludicola	marsh sandwort	FE/ CE/ 1B.1	Marshes and swamps (freshwater or brackish)/sandy, openings/ perennial stoloniferous herb/ May-Aug/ 10-558	No suitable habitat/ Not observed	Unlikely
Atriplex coulteri	Coulter's saltbush	None/ None/ 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill	No suitable habitat/ Perennial herb, not observed	Unlikely

Table 3
Special-Status Plant Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Habitat Requirements/life form/blooming period/	Site Suitability/ Survey Results	Potential to Occur within the BAA
			grassland/alkaline or clay/ perennial herb/ Mar-Oct/ 10-1,509 feet		
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/ None/ 1B.2	Coastal bluff scrub, Coastal scrub/alkaline/ annual herb/ Apr-Oct/ 33-656 feet	No suitable habitat/ Not observed	Unlikely
Calandrinia breweri	Brewer's calandrinia	None/ None/ 4.2	Chaparral, Coastal scrub/sandy or loamy, disturbed sites and burns/ annual herb/ Mar-Jun/ 33-4,003 feet	Marginal habitat/ Not observed	Unlikely
Calochortus catalinae	Catalina mariposa lily	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ perennial bulbiferous herb/ (Feb),Mar-Jun/ 49-2,297 feet	No suitable habitat/ Not observed	Unlikely
Calystegia sepium ssp. *binghamiae*	Santa Barbara morning-glory	None/ None/ 1A	Marshes and swamps(coastal), Riparian scrub(alluvial)/Historically associated with wetland and marshy places, but possibly in drier situations as well. P/ perennial rhizomatous herb/ Apr-May/ 0-722 feet	Marginal habitat/ Not observed	Unlikely
Centromadia parryi ssp. *australis*	southern tarplant	None/ None/ 1B.1	Marshes and swamps(margins), Valley and foothill grassland(vernally mesic), Vernal pools/ annual herb/ May-Nov/ 0-1,394 feet	Marginal habitat/ Not observed	Possible
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/ CE/ 1B.2	Coastal dunes, Marshes and swamps (coastal salt)/ annual herb (hemiparasitic)/ May-Oct/ 0-98	No suitable habitat/ Not observed	Unlikely

Table 3
Special-Status Plant Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Habitat Requirements/life form/blooming period/	Site Suitability/ Survey Results	Potential to Occur within the BAA
Hordeum intercedens	vernal barley	None/ None/ 3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland(saline flats and depressions), Vernal pools/ annual herb/ Mar-Jun/ 16-3,281 feet	No suitable habitat/ Not observed	Unlikely
Lasthenia conjugens	Contra Costa goldfields	FE/ None/ 1B.1	Cismontane woodland, Playas(alkaline), Valley and foothill grassland, Vernal pools/mesic/ annual herb/ Mar-Jun/ 0-1,542 feet	No suitable habitat/ Not observed	Unlikely
Monolopia congdonii	San Joaquin woollythreads	FE/ None/ 1B.2	Chenopod scrub, Valley and foothill grassland(sandy)/ annual herb/ Feb-May/ 197-2,625	No suitable habitat/ Not observed	Unlikely
Phacelia hubbyi	Hubby's phacelia	None/ None/ 4.2	Chaparral, Coastal scrub, Valley and foothill grassland/gravelly, rocky, talus/ annual herb/ Apr-Jun/ 0-3,281 feet	No suitable habitat/ Not observed	Unlikely
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/ None/ 3.2	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps(coastal salt)/sandy, sometimes rocky/ perennial herb/ Mar-Aug/ 16-984 feet	No suitable habitat/ Not observed	Unlikely
Quercus dumosa	Nuttall's scrub oak	None/ None/ 1B.1	Closed-cone coniferous forest, Chaparral, Coastal scrub/sandy, clay loam/ perennial evergreen shrub/ Feb-Apr(Aug),/ 49-1,312 feet	No suitable habitat/ Not observed	Unlikely
Nasturtium gambelii	Gambel's water cress	FE/ CT/ 1B.1	Marshes and swamps (freshwater or brackish)/ perennial rhizomatous herb/ Apr-Oct/ 16-1083	No suitable habitat/ Not observed	Unlikely
Scrophularia atrata	black-flowered figwort	None/ None/ 1B.2	Closed-cone coniferous forest, Chaparral, Coastal dunes, Coastal scrub, Riparian scrub/ perennial herb/ Mar-Jul/ 33-1,640 feet	Marginal habitat/ Not observed	Unlikely

Status Definitions:
CRPR = California Rare Plant Rank

FE = federally endangered
CE = state endangered
CT = state threatened
1B (formerly List 1B): Plants that are rare, threatened, or endangered in California and elsewhere.
3 (formerly List 3): Plant about which more information is needed – a review list
4 (formerly List 4): Plants of limited distribution - a watch list
0.1: Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
0.2: Fairly threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)

4.2.1 Southern Tarplant (*Centromadia parryi* ssp. *australis*)

Southern tarplant (*Centromadia parryi* ssp. *australis*) is an annual in the sunflower family (Asteraceae) that is included on the CDFW list as a rank S2 and is identified as a CNPS CRPR 1B.1. The southern tarplant is known from nine records in Santa Barbara County; eight of these are documented occurrences within the six quad search (CDFW 2014a). Three occurrences are in Isla Vista, one occurrence is west of Goleta near the corner of Highway 101 and Glen Annie Canyon Road, one occurrence is from the University of California Santa Barbara lagoon area, one occurrence is near the junction of Highway 101 and Fairview Avenue in Goleta, and the one occurrence, the nearest record to the Project, is along Hollister Avenue at San Jose Creek in Goleta approximately 7.56 miles northwest of the Project (CDFW 2014a).

Southern tarplant is found at the margins of marshes and swamps, in vernally mesic valley and foothill grassland, and in vernal pools and blooms from May to November. Southern tarplant is also found on the margins of riparian habitat dominated by non-native grasses. The riparian vegetation and adjacent habitat along the Laguna Channel have the potential to support this species. The survey was conducted during the blooming period for this annual and no southern tarplant was observed.

4.3 Special-Status Wildlife Species

The CNDDB and USFWS query returned 24 special-status wildlife species that have been documented within the surrounding six quads of the Projects site. Based on Dudek's habitat suitability analysis nine species and several marine mammals have potential to occur within the BSA and or BAA. The BSA and BAA lack suitable habitat for the three amphibian species: arroyo toad (*Anaxyrus californicus*), foothill yellow-legged frog (*Rana boylii*), and California red-legged frog (*Rana draytonii*); seven bird species: marbled murrelet (*Brachyramphus marmoratus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), light-footed clapper rail (*Rallus longirostris levipes*), bank swallow (*Riparia riparia*), and least Bell's vireo (*Vireo bellii pusillus*); two insects: monarch butterfly (*Danaus plexippus*: winter roosting) and wandering (=saltmarsh) skipper (*Panoquina errans*); one crustacean vernal pool

fairy shrimp (*Branchinecta lynchi*) and two mammals: western mastiff bat (*Eumops perotis californicus*) and big free-tailed bat (*Nyctinomops macrotis*).

Laguna Channel has been altered and contains both earthen and fully lined concrete reaches. Upstream of Highway 101, Laguna Channel is culverted or underground. Within the BAA and downstream areas, the channel is open, although anthropogenically altered and straightened, and contains riparian vegetation. At the southern landward end of the BAA, there is a tidal gate and pump station near the mouth of the Laguna Channel to prevent tidal influx. Downstream of the tidal gate and BAA, the Laguna Channel empties into the Mission Laguna-Lagoon at the beach across from Chase Palm Park. The nearby Andree Clark Bird Refuge supports fresh water marsh habitat for a number of special-status birds and the unique brackish/freshwater Mission Laguna-Lagoon provides habitat for a number of special-status species (Questa 2005). It should also be noted that the City is working on a fish passage project on Mission Creek and tidal gate/pump station redesign at the mouth of the Laguna Channel.

Dudek's habitat suitability analysis for the 24 special-status species documented within the surrounding six quads of the Projects site is provided in *Table 4*. The species with potential to occur are described in detail following the table.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
Insects						
Cicindela hirticollis gravida	sandy beach tiger beetle	None/SA		Beaches adjacent to non-brackish water, particularly dry, light-colored sand in the upper zone. Larvae prefer moist sand not affected by wave action.	The BAA lacks suitable dune habitat required for this species. Not observed	Suitable dune habitat is absent. Unlikely to occur.
Coelus globosus	globose dune beetle	None/SA/VU		Inhabits coastal sand dune habitat from Sonoma County south to Ensenada, Mexico. It burrows beneath the sand and is most common underneath dune vegetation.	The BAA lacks suitable dune habitat required for this species. Not observed	Suitable dune habitat is absent. Unlikely to occur.
Danaus plexippus	monarch butterfly	None/SA		Overwinters in eucalyptus groves near the coast	The BAA is absent of eucalyptus groves, Monterey pine trees, and cypress trees. No milkweed plants were observed for egg laying and caterpillar consumption. The winter roosting habitat for this species is protected, and the BAA lacks this habitat. A monarch butterfly was observed during the migratory period. However, no winter roosting is expected to occur.	Suitable winter roosting habitat is absent. Unlikely to occur.
Panoquina errans	wandering (=saltmarsh) skipper	None/None/NT	Flight dates: July-September	Found along coastal California from Santa Barbara County south (also in Baja and the west coast of Mexico). They feed on salt grass (*Distichlis spicata*) and produce one brood of young a year in the California part of their range (two broods in Mexico). The	The nearest CNDDB record is 8.0 miles to the east at the Carpinteria Marsh. The BAA lacks salt grass habitat. Not observed.	Suitable salt grass habitat is absent. Unlikely to occur.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
				habitat is coastal marshes along river mouths and at other brackish waters. (Glassberg 2001).		
Crustacean						
Branchinecta lynchi	vernal pool fairy shrimp	FT/VU		Vernal pools habitats	No suitable habitat present	No suitable habitat. Unlikely to occur.
Fish						
Eucyclogobius newberryi	tidewater goby	FE/CSC/AFS:EN/ VU	Spring, late summer (peak spawning)	Brackish or freshwater in bays, sounds, and lagoons and creeks along the coast (USFWS 2007a).	Tidewater gobies occupy habitat in "Laguna Channel, extending from the southeast end of Laguna Street to the Pacific Ocean." Mission and Laguna Channel are designated as critical habitat unit SB-9 for this species. The lagoon at the mouth of these two creeks seasonally forms to provide stable habitat, although intermittently. Presence/absence surveys were not conducted for the tidewater goby and, therefore, observations were limited to habitat conditions and available observational data.	Likely to occur in earthen segments of the channel and within the Mission Creek – Laguna Channel Lagoon.
Leuresthes tenuis	California grunion	None	Late March – early June (peak	Spawns in tidal waters on sandy beaches.	East Beach contains suitable sandy habitat and tidal fluctuations, however, area	Potential to occur.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
			spawning)		around the weir box contains less suitable habitat (boulders and structures)	
Oncorhynchus mykiss irideus	southern steelhead - southern California DPS	FE/CSC/AFS:EN	December – April (spawning)	Spawns in freshwater streams and spends much of life at sea. Requires streams without barriers along stream course that obstruct access to spawning areas. Juveniles may spend months in coastal lagoons while sand bars block access to the ocean (NMFS 2009).	Nearby Mission Creek, which is hydrologically connected to the Laguna Channel at the seasonal lagoon, is critical habitat for this species (70 FR 52488). The Laguna Channel lacks spawning habitat, and the pumping station at the mouth of the channel currently provides a barrier to this species. No suitable creek habitat occurs within the BAA. Not observed.	The tide gate and pump house prevent southern steelhead from migrating upstream into the BAA. Unlikely to occur.
Amphibians						
Anaxyrus californicus	arroyo toad	FE/CSC/EN	March-July	Semi-arid regions near washes or intermittent streams. Habitats used include valley-foothill and desert riparian as well as a variety of more arid habitats including desert wash, palm oasis, and Joshua tree, mixed chaparral and sagebrush.	The nearest CNDDB occurrence is from approximately 7.1 miles northeast of the Project site, within the portion of the Santa Ynez River that flows towards Gibraltar Lake. Suitable habitat is absent within the BAA. Not observed.	No suitable habitat. Unlikely to occur
Rana boylii	foothill yellow-legged frog	None/CSC/NT	March – May	Rocky streams in a variety of habitats, with exposed rocks for basking and rocks for shelter within or near the streambed.	The nearest CNDDB occurrence is from approximately 8.0 miles northeast of the Project site, within the Santa Ynez River	Suitable rocky stream habitat is absent. Unlikely to occur.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
					downstream of Jameson Lake. Suitable rocky stream habitat is absent within the BAA. Not observed.	
Rana draytonii	California red-legged frog	FT/CSC/VU	January – July	Preferred aquatic habitat is characterized by dense shrubby, or emergent riparian vegetation, such as arroyo willow, cattails, and bulrushes (*Schoenoplectus* spp.), associated with deep (greater than two feet), still or slow-moving water. Will also utilize ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, permanent ponds, perennial creeks, manmade aquatic features, marshes, dune ponds, lagoons, riparian corridors, blackberry thickets, nonnative annual grasslands, and oak savannas.	Occurs widely at suitable elevations in Santa Barbara County. The nearest CNDDB occurrence is from approximately 3.0 miles northeast of the Project site (weir box), along Cinquefoil Creek approximately 0.35 mile north of the confluence of Hot Springs Creek and Cold Springs Creek, Montecito. California red-legged frogs have not been observed within the Laguna Watershed. Not observed.	California red-legged frogs have not been historically recorded in the Laguna Watershed. Unlikely to occur.
Reptiles						
Emys marmorata	Western pond turtle	None/CSC/VU	April– August	Permanent ponds, lakes, streams, and irrigation ditches with basking sites such as partially submerged logs, rocks, mats of floating vegetation, or mud banks; also woodland, grassland, or open forest. Females lay eggs in nests constructed on dry land as far as 100 meters (325 feet) from water. Feeds on aquatic plant material, beetles, aquatic invertebrates, fishes, and frogs.	The only natural breeding population of Western pond turtles within the City of Santa Barbara limits is within the Laguna Channel between Yanonali Street and Cabrillo Boulevard (Questa 2005). Suitable habitat is present within the BSA. Not observed.	Likely to occur.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
Thamnophis hammondii	two-striped garter snake	None/CSC	July – November	Occurs along streams, vernal pools, lakes, and stock and artificial ponds with good adjoining riparian vegetation (Jennings and Hayes 1994; Schwenkmeyer 2012). Commonly found within wetlands and streams having rocky or sandy beds with willows (*Salix* sp.) or dense vegetation (Zeiner et al. 1990a). Stays close to water in the warmer months but may occur farther from water during cooler months, when it retreats to communal hibernation burrows.	The nearest CNDDB occurrence is approximately 3.5 miles north of the Project site in Rattlesnake Canyon approximately 1.0 mile north of Las Canoas Road. Suitable habitat is present within the BAA. Not observed.	Possible to occur.
Birds						
Accipiter cooperii	Cooper's hawk	None/WL	March – August	Most frequently nests in dense stands of live oak, riparian deciduous, or other forest habitats near water. Winters and forages in similar habitats (Zeiner et al. 1990b).	However, potentially suitable nesting habitat and suitable year-round foraging habitat occurs in trees along the Laguna Channel. Not observed.	Suitable nesting, foraging, and roosting habitat present. Likely to occur.
Brachyramphus marmoratus	marbled murrelet	FT/SE/WLBCC/EN	March - October	Nests in coniferous trees and generally in old-growth forests or mature trees that contain large platforms, moss, vertical cover, and horizontal access to nest limb. Nests have also been found on the ground in tundra or forests habitats within rock scree slopes, cliffs, boulder fields near the ocean, rock cavities, or crevices in the open or under vegetation. Feeds on small schooling fish and invertebrates (Nelson 1997)	No suitable forests, mature trees, or ground nesting habitats present within the BAA. Only one CNDDB nesting record is documented and is located in Santa Cruz County, over 200 miles north of the BAA.	Suitable nesting habitat absent. Unlikely to occur.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
Charadrius alexandrinus nivosus	western snowy plover	FT/CSC/BCC/WLBCC	March – August	Breeds on coastal sandspits, dune-backed beaches, beaches at creek mouths and lagoons, and salt pans at lagoons and estuaries. Snowy plovers feed on vertebrates on the surface of wet sand, surf-cast kelp, dry sand above the high tide line, salt pans, spoil sites, and the edges of salt marshes, salt ponds, and lagoons (USFWS 2007b).	No beach or dune habitat occurs within the BAA. The nearest nesting record is on the Santa Barbara harbor sandspit during May to July 2005 and involved a single successful nest (Lehman 2014). Not observed.	Suitable beach and dune habitat absent. Unlikely to nest due to constant human activities and marginal quality substrate. Winter habitat present, Moderate potential to occur.
Empidonax traillii extimus	southwestern willow flycatcher	FE/SE/WLBCC	May – August	Typically nests in relatively dense riparian habitat where still or slow-moving surface water is present, although water may be absent in some years or during portions of the breeding season. The minimum patch size recorded for nesting is 0.8 hectares (approximately 2.0 acres). In the region, usually nests where the tree-shrub later may consist of willows (*Salix* spp.), cottonwoods (*Populus* spp.), boxelder (*Acer negundo*), and alder (*Alnus* spp.) of different size classes, as well as a dense understory of native and exotic vegetation (Sogge et al. 2010).	Not known to nest in southern Santa Barbara County (Lehman 2014). Riparian habitat in the project vicinity lacks the structural diversity of suitable habitat and is too patchy and too limited in extent (no patches greater than 0.5 acres). Not observed.	Potentially present during migration; roosting and foraging. Suitable nesting habitat absent. Unlikely to nest.
Gymnogyps	California	FE/SE/WLBCC	Year-round	Nests in caves, in crevices, behind rock	The nearest CNDDB	Suitable

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
californianus	condor			slabs, or on large ledges on high sandstone cliffs. Prefers mountains, gorges, and hillsides, which create updrafts favorable for soaring. Feeds on large and medium-sized carrion.	occurrence is 14.0 miles north of the Project site in the Los Padres National Forest, northeast of Lake Cachuma in the Sisquoc-San Rafael condor area. The BAA lacks suitable habitat. Not observed.	nesting habitat absent. Unlikely to occur.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	None/SE	March – July	Resident in coastal salt marshes from Goleta, Santa Barbara County, south to El Rosario in Baja California. Most nest in dense pickleweed and forage within and in the vicinity of pickleweed marshes (Zembal and Hoffman 2010).	No suitable salt marsh habitat occurs within 5.0 miles of the site. The nearest known breeding location is Carpinteria Salt Marsh, approximately 8.0 miles to the east (Lehman 2014; CDFW 2014a). Not observed.	Suitable coastal marsh habitat absent. Unlikely to occur.
Rallus longirostris levipes	light-footed clapper rail	FE/SE/FP/WLBCC	March – August	Inhabits coastal marshes and lagoons from southern Santa Barbara County south to northern Baja California. Light-footed clapper rails forage in shallow water and mudflats for a variety of invertebrates; they seek cover in dense vegetation and place their nests high enough in vegetation to avoid flooding during high tides (USFWS 2009).	No suitable salt marsh habitat occurs within 5.0 miles of the site. The nearest occurrence of this species is approximately 8.0 miles to the east, at Carpinteria Salt Marsh (CDFW 2014a; Lehman 2014, USFWS 2009). Not observed.	Suitable coastal marsh habitat absent. Unlikely to occur.
Riparia riparia	bank swallow	None/ST	April – July	Riparian areas with finely textured or sandy banks available for excavating nest burrows. Forages aerially for insects. No longer known to nest in coastal California south of Monterey County (Zeiner et al. 1990b).	Recorded rarely in the region and in the BAA in migration. No nesting habitat is present in the BAA. This species no longer nests in the region, and suitable nesting habitat is	Potentially present during migration; roosting and foraging. Suitable

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
					lacking within the BAA. Not observed.	nesting habitat absent. Unlikely to nest.
Sterna antillarum browni	California least tern	FE/SE/WLBCC	May- August	Nests along coast, especially colonial breeder on bare flat substrates, sand beaches, alkali flats, paved areas. Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flat.	No suitable nesting habitat present. Closest recent nesting attempt is located approximately 11.0 miles west of the site, west of Devereux Slough (Coal Oil Point Preserve) where re-nesting was documented between 2004 and 2007. Prior to 2004, nesting was last documented around 1960. No documented recent nesting attempts in Santa Barbara since 1938, since 1944 in Carpinteria, and since 1932 in Summerland (Lehman 2014)	Suitable nesting habitat absent. Unlikely to occur.
Vireo bellii pusillus	least Bell's vireo	FE/SE/WLBCC	March - August	Nests in structurally diverse riparian woodlands with dense understory, along watercourses, including cottonwood-willow forests, oaks woodlands, and mulefat scrub. Forages in these and adjacent habitats (USFWS 1986).	Not known to nest in southern Santa Barbara County (Lehman 2014). Riparian habitat in the project vicinity is patchy and lacks the structural diversity of suitable habitat. Not observed.	Potentially present during migration; roosting and foraging. Suitable nesting habitat absent. Unlikely to nest.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
Mammals						
Eumops perotis californicus	western mastiff bat	None/CSC/WBWG:H		Open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	The nearest CNDDB record is 10.6 miles north of the Project site in the White Rock Recreation Area within the upper Santa Ynez Valley, north of Paradise Canyon. The western mastiff bat typically migrates in September and October between their summer and winter ranges, where they may be observed in unusual habitats; however, none were observed. Since they forage at night and the survey was diurnal, only roost would have been observed. No roosts or western mastiff bats observed.	Suitable roosting habitat is absent. Unlikely to occur.
Nyctinomops macrotis	big free-tailed bat	None/CSC/WBWG:MH		Roosts in buildings, caves, tree cavities, and rock crevices. It likely does not breed in California, but has been found breeding in rock crevices in other parts of its range.	CNDDB records document a big free-tailed bat in 1996 in the general Santa Barbara area without a specific location. The BAA lacks suitable roosting habitat. Since they forage at night and the survey was diurnal, only roost would have been observed. No roosts or western mastiff bats	Suitable roosting habitat is absent. Unlikely to occur.

Table 4
Special-Status Wildlife Species that occur in the Vicinity of the Property and their Potential to Occur within the BAA

Scientific Name	Common Name	Regulatory Status	Nesting/ Breeding Period	Habitat Requirements	Site Suitability /Survey Results	Potential to Occur within the BAA
					observed.	
Several species	Marine mammals – several species, most notably cetaceans (whales and dolphins)	MMPA	Various migration periods	Pacific ocean	Several marine mammal species travel through the Santa Barbara Channel during their annual migrations, most notably cetaceans (whales and dolphins)	Suitable marine habitat is present. Likely to occur.

Status Definitions:
FE = federally endangered
FT = federally threatened
FP = CDFW fully protected
SE = state endangered
ST = state threatened
WL = California Department of Fish and Wildlife – watch list
CSC = California Department of Fish and Wildlife species of special concern
SA = California Department of Fish and Wildlife special animal
AFS = American Fish Society – Endangered
EN = endangered by the International Union for Conservation of Nature
NT = near threatened by International Union for Conservation of Nature
VU = vulnerable by International Union for Conservation of Nature
MMPA = Marine Mammal Protection Act
WBWG = Western Bat Working Group
H: High Priority
NH: Medium-High Priority

4.3.1 Birds

4.3.1.1 Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is a CDFW Watch List species for its nesting period and is resident in most of the more wooded parts of the state. It most frequently nests in dense stands of live oak, riparian deciduous, or other forest habitats near water, including suburban habitats. The CNDDB includes an occurrence from approximately 2.5 miles northwest of the Project site. The occurrence is along Mission Creek approximately 0.2 mile north of the intersection of West Alamar Avenue and Tallant Road. This species is a relatively common breeder in southern Santa Barbara County (Lehman 2014; D. Compton, personal observations). Suitable nesting habitat is present within the Laguna Channel. Although this species is tracked in CNDDB, it is not a special-status species. Since the field-surveying period did not overlap with the nesting season for this species, no focused surveys were conducted in 2014.

4.3.1.2 Western Snowy Plover

The snowy plover (*Charadrius nivosus)* is a ground nesting bird found mainly on unvegetated to sparsely vegetated coastal beaches and shores of inland alkaline lakes (Page et al. 2009). The Pacific Coast population of the Western snowy plover is a federally threatened, federal Bird of Conservation Concern, CDFW species of special concern (CSC), and American Bird Conservancy US Watch List of Birds of Conservation Concern. The Western snowy plover subspecies (*C. n. nivosus*) winters and nests along the Pacific Coast from southern Washington to Magdalena Bay, Baja Sur, Mexico (Page et al. 2009). This species typically nests in open areas of shingle or sand located on or near the sea (including sandy beaches and estuary shores) and may also nest on edges of saline lagoons or dry lake beds inland and on areas of dry mud with scanty vegetation near brackish water (Zeiner et al. 1990b, Baicich and Harrison 2005). Locally, the western snowy plover nests in these habitats from as early as March through August with major nesting habitat apparently on salt pond levees (Cogswell 1977 as cited in Zeiner et al. 1990a; M. Kelly, pers. comm.). Nests consist of a shallow scrape that is unlined or sparsely lined with fragments of plants and debris (Baicich and Harrison 2005).

During winter, the western snowy plover occurs on the Pacific Coast locally from southern Washington to Nayarit, Mexico (Page et al. 2009). During the winter this species is primarily coastal and occurs along beaches, tidal flats, lagoon margins, and salt-evaporation ponds (Page et al. 2009). The Western snowy plover forages on terrestrial, freshwater, brackish, and small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods (77 FR 36728-36869). On the coast, feeding takes place on beaches, tide flats, river mouths, lagoon margins, salt flats, and salt ponds. On beaches, this species forages above and below

mean high-water line by gathering food from above and below the sand surface, kelp surfaces, carcasses, or foredune vegetation (Page et al. 2009).

In Santa Barbara County, the snowy plover is a fairly common and local transient and winter visitor, while it is somewhat less common ("uncommon to fairly common") as a summer resident (Lehman 2014). In Santa Barbara County, this species is found on the drier portions of sandy beaches and at river mouths with fewer occurrences in coastal sloughs (Lehman 2014). The breeding population of the species in Santa Barbara County declined substantially during the 1990s, primarily due to human activities and predation by introduced predators and high densities of some native predators (Lehman 2014). In Santa Barbara, primary documented wintering locations during the past 30 years have included beaches at the Santa Maria River mouth, Vandenberg Air Force Base, Coal Oil Point, the Santa Barbara harbor sandspit (approximately 0.5 miles southwest of the weir box), and East Beach, where the proposed Project site is located (Lehman 2014). As many as 369 individuals (January 2, 2005) have been recorded in recent Santa Barbara Christmas Bird Counts (Lehman 2014), which include beaches from Montecito west to Coal Oil Point.

The winter aggregations of western snowy plover at the Santa Barbara harbor sandspit and East Beach (Stearns Wharf east to the Andrée Clark Bird Refuge, including the Project site) have varied but occasionally number over 100 birds. Birds present at East Beach most often occur at the far eastern end of the beach, approximately 1 mile east of the Project site (SBMNH files as cited in Storrer Environmental Services 2014).

A single successful nest was documented at the Santa Barbara harbor sandspit during May to July 2005; this was the first documented breeding attempt in the City of Santa Barbara since 1933 (see occurrence no. 44, CDFW 2014a; Lehman 2014). One of the color-banded nesting adults was observed again six years later (in August 2011) at East Beach. However, no nesting attempts have been documented since 2005. Although the area is still known to support wintering individuals, CNDDB records the habitat from West Beach to East Beach as "unsuitable due to human disturbance and development" (see occurrence no. 44, CDFW 2014a).

Elsewhere in Santa Barbara County, Western snowy plovers have been known to nest in areas of relatively high human activity when provided the opportunity. Specifically, this species has been known to nest at Coal Oil Point (Lehman 2014; UCSB 2008), located approximately 11.0 miles west of the weir box, with as many as 66 nests observed in 2007 (UCSB 2008). Although Coal Oil Point is actively used by the public all year round, portions of this area are protected during the breeding season and winter months which may have facilitated continued nesting. The first documented breeding attempt in Carpinteria since 1960 occurred in May 2013, approximately 7.5 miles east of the Project site (CDFW 2014a; Lehman 2014). An assessment in 1978 had concluded that suitable habitat was no longer present at this location due to human

activity/development (see occurrence no. 43, CDFW 2014a). The species also nested at Goleta Beach, approximately 8.5 miles west of the Project site, as recently as 1948 (Lehman 2014) and two eggs sets were collected from the "Goleta Slough Flats" between 1927 and 1948 (see occurrence no. 46, CDFW 2014a; Lehman 2014). An assessment conducted in 1978 concluded that suitable habitat was still present at the "Goleta Slough Flats" (CDFW 2014a).

4.3.2 Fish

4.3.2.1 Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi*) is a federally-endangered, CSC, American Fisheries Society endangered species and determined vulnerable by the International Union for Conservation of Nature. It is found in brackish or freshwater in bays, sounds, and lagoons and creeks along the coast from Del Norte County south to San Diego County. Half-grown and adult tidewater gobies move upstream in summer and fall, usually up to 1 kilometer (0.6 miles) from the estuary, but in some areas from 5 to 8 kilometers (3.1 to 5.0 miles). Reproduction occurs at all times of year, but peak spawning occurs during spring and late summer (USFWS 2005).

URS conducted a Creek Inventory and Assessment Study (URS 2000) which documented tidewater goby presence on the ocean side of the tidal gates. Dr. Camm Swift observed tidewater gobies within Laguna Channel during surveys in 2002 (USFWS 2005 [C. Swift, pers. comm. 2004]). A 1995 CNDDB record documents tidewater gobies in Laguna Channel extending from the southeast end of Laguna Street to the Santa Barbara Harbor (CDFW 2014a). The USFWS identifies Mission Creek - Laguna Channel as critical habitat unit SP-9 (USFWS 2014a).

In summary, tidewater gobies have been documented in Laguna Channel and the Mission Creek – Laguna Channel Lagoon. No direct or indirect impacts or modifications to the channel or lagoon are proposed. However, since the maintenance crew will access the weir box by passing over the Laguna Channel in their truck(s), avoidance measures are proposed below to ensure no take of the tidewater goby or adverse modification to its critical habitat. Since this species is known to occur in the Laguna Channel and no impacts are proposed, focused aquatic or formal USFWS protocol presence/absence surveys for this species were not conducted in 2014.

4.3.2.2 Southern Steelhead

The southern steelhead (*Oncorhynchus mykiss irideus*) distinct population segment (DPS) is federally endangered, a CSC, and American Fisheries Society endangered species. It is an anadromous species of fish (living much of its life at sea and spawning in rivers and streams) that spawns in California watersheds from the Santa Maria River in southern San Luis Obispo and northern Santa Barbara County southward (NMFS 2009). Juveniles of the species rear in fresh water for one to three years before migrating out to sea, where they reach maturity and live

for two to four years, before returning to their natal stream to spawn. Juvenile steelhead will spend months in coastal lagoons prior to outmigrating. Adults may migrate from miles to hundreds of miles up their natal stream before spawning. Steelhead streams have sufficient winter flow that sands berms at the mouths of streams that can be breached (Titus et al. 2010).

No observations or documentation of southern steelhead are known for Laguna Channel. The tidal gate and pump station at the mouth of Laguna Channel provides a migratory barrier for steelhead in that channel. However, the Laguna Channel flows into the Mission Laguna Lagoon, which does support southern steelhead (Questa 2005). Multiple observations of southern steelhead within Mission Creek have been reported including 20 juveniles on July 17, 2011 during biological monitoring for the Lower Mission Creek Reach 1A-1 Project (County 2012).

Since this species is not known to occur in the BAA, and no impacts are proposed for the Laguna Channel, focused surveys for this species were not conducted in 2014.

4.3.2.3 Grunion

The California grunion (*Leuresthes tenuis*) spawns in tidal waters from March through August, and occasionally in February and September. Peak spawning is late March to early June. Grunions 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. Eggs are deposited in the sand where they incubate during the lower tides thereby avoiding disturbance from wave action. The eggs are kept moist by residual water in the sand. Grunion hatch about 10 days later, during the next high tide series, when they are inundated with sea water and agitated by rising surf. Per California fish and game regulation, the recreational fishery is close April and May to protect grunion during their peak spawning period and is open to harvest by hand only. Take of eggs is not permitted.

It is unknown, but unlikely that the grunion spawn at or near the subject weir box in the BAA; therefore, presence/absence surveys and avoidance, if present is recommended (as described in Section 6).

4.3.3 Insects

4.3.3.1 Sandy Beach Tiger Beetle and Globose Dune Beetle

The sandy beach tiger beetle (*Cicindela hirticollis gravida*) is listed on the CDFW Special Animals list (CDFW 2014b) and is found on beaches adjacent to non-brackish water, particularly dry, light-colored sand in the upper zone. Larvae prefer moist sand not affected by wave action. The nearest CNDDB record is 9.8 miles east of the Project site in Carpinteria.

The globose dune beetle (*Coelus globosus*) is listed on the CDFW Special Animals list (CDFW 2014b) and determined vulnerable by the International Union for Conservation of Nature. This species inhabits coastal sand dune habitat from Sonoma County south to Ensenada, Mexico. It burrows beneath the sand and is most common underneath dune vegetation. The nearest CNDDB record is from 1965 along the Santa Barbara beaches from Shoreline Park to the eastern side of East Beach.

Since the BAA lacks suitable sand or dune habitat for these species, focused surveys were not conducted in 2014.

4.3.4 Reptiles

4.3.4.1 Western Pond Turtle

The Western pond turtle (*Actinemys marmorata*) is a CSC and determined vulnerable by the International Union for Conservation of Nature. This species is found throughout the Pacific slope of California. It is highly associated with water, occurring in permanent ponds, lakes, streams, and irrigation ditches in forest, open woodlands, and grassland. They require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or mud banks. Females lay eggs in nests constructed on dry land as far as 100 meters (325 feet) from water. The Western pond turtle feeds on aquatic plant material, beetles, aquatic invertebrates, fishes, and frogs.

The only natural breeding population of Western pond turtles within the City of Santa Barbara limits is within the Laguna Channel between Yanonali Street and Cabrillo Boulevard. This population of Western pond turtles is completely isolated from other populations. Individuals attempting to move upstream to natural habitats likely results in significant mortality due to the culverted and underground existence of the channel (Questa 2005). Additionally, Western pond turtles have been documented in El Estero Drain downstream of Calle Cesar Chavez (URS 2006).

In summary, Western pond turtles have been documented within the Laguna Channel within the BSA, between Yanonali Street and Cabrillo Boulevard. No direct impacts to the Laguna Channel are proposed. However, the temporary and permanent Project impacts are within 50 feet of the Laguna Channel which may indirectly affect this species. Temporary and/or permanent direct impacts may include inadvertent modification to riparian habitat. Permanent impacts may also include direct mortality from vehicle traffic. Therefore, mitigation measures (as described in Section 6) are recommended below.

4.3.4.2 Two-striped Garter Snake

The two-striped garter snake (*Thamnophis hammondii*) is a CSC that is found in coastal California in the vicinity of the southeast slope of the Diablo Range and the Salinas Valley south along the Coastal and Transverse ranges to Rio Rosario in Baja California, Mexico. It is found in a variety of perennial and intermittent freshwater streams within oak woodlands, shrublands, and sparse coniferous forests from sea level to 2,400 meters (7,874 feet) amsl (Stebbins 2003; Zeiner et al. 1988). They are restricted to streams, vernal pools, lakes, and stock and artificial ponds with good adjoining riparian vegetation (Jennings and Hayes 1994; Schwenkmeyer 2012) and are commonly found within wetlands and streams having rocky or sandy beds with willows (*Salix* sp.) or dense vegetation (Zeiner et al. 1990a). Two-striped garter snakes stay close to water in the warmer months but may occur farther from water during cooler months. They are generally active aquatic hunters during the day, but retreat into crevices, mammal burrows, or other upland shelters at night. The two-striped garter snake generally retreats to communal hibernation burrows as the days shorten, generally in October but depending on latitude and elevation (Jennings and Hayes 1994). They prey on small fish, fry, and eggs, frogs and toads, newts, leeches, earthworms, and insect larvae (Jennings and Hayes 1994).

The nearest CNDDB occurrence is approximately 3.5 miles north of the Project site in Rattlesnake Canyon approximately 1.0 mile north of Las Canoas Road. Suitable habitat is present within the BSA in the Laguna Channel. No direct impacts to the Laguna Channel are proposed. However, the temporary and permanent Project impacts are within 50 feet of the Laguna Channel, which may indirectly affect this species. Temporary and/or permanent direct impacts may include inadvertent modification to riparian habitat. Permanent impacts may also include direct mortality from vehicle traffic. Therefore, mitigation measures (as described in Section 6) are recommended below.

4.3.5 Mammals

Several marine mammal species travel through the Santa Barbara Channel during their annual migrations, most notably cetaceans (whales and dolphins). Of these, two whale species are known, although uncommon, visitors to the Santa Barbara Harbor, the gray whale (*Eschrichtius robustus*) and humpback whale (*Megaptera novaeangliae*). Gray whales migration in the Santa Barbara Channel peaks December through April (winter breeding in Baja California), while humpback (and blue) whales are attracted to coastal California May through September to feed and then migrate south (Mexico and Costa Rica) to breed. Another whale species that can be observed close shore is the minke whale (*Balaenoptera acutorostrata*). The remaining whales species that travel through the Santa Barbara Channel usually remain in deeper waters during their migration including the blue (*Balaenoptera musculus*), fin (*Balaenoptera physalus*), Sei (*Balaenoptera borealis*), and sperm (*Physeter macrocephalus*) whale and less common killer

whale (*Orcinus orca*). Because of this consistent use of Santa Barbara Channel by marine mammals and less predictable use of the harbor by whales, best management practices for boating to the intakes, anchor moorings, and biofoul removal (i.e., maintenance activities) should be implemented to avoid disturbance to any whale visiting the Santa Barbara harbor and all marine mammal species protected under the Marine Mammal Protection Act (MMPA). In addition to whales, the MMPA covers dolphins, seals, sea lions, and other marine mammal species common in near shore areas of Santa Barbara.

Temporary and/or permanent direct impacts that may affect marine mammals include the accidental spill of chemicals into the ocean. Permanent impacts may also include the accidental direct mortality due to collision with navigating boats. Therefore, mitigation measures (as described in Section 6) are recommended below.

4.4 Sensitive Vegetation Communities

The literature review identified one sensitive vegetation community that has been recorded within the CNDDB query. The elevation, soils, and habitat within the BSA do not provide suitable habitat for this sensitive vegetation community. However, the BAA is known to contain suitable habitat for the sensitive vegetation community. In addition, one riparian vegetation community observed within the BSA and BAA is potential habitat for special-status species or receives special protection under the California Coastal Act or other regulations or agencies. This section describes these communities and habitat types, noting which vegetation communities qualify as sensitive. The results of the literature review and field survey for sensitive vegetation communities to occur on-site is summarized in *Table 5*.

Table 5
Potentially Occurring Sensitive Vegetation Communities

Sensitive Vegetation Community	Global Status/State Status	Potential to Occur	Survey Results
Southern Coastal Salt Marsh	G2/S2.1	BAA lacks suitable habitat.	Not observed within the BAA.
Red Willow Thickets	G3/S3	BAA contain suitable habitat.	Observed within the BAA.

Status Definitions:
Global Ranking - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.
State Ranking - The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.
G1, S1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.
G2, S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.
G3, S3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.
0.1: very threatened
0.2: threatened

4.4.1 Southern Coastal Salt Marsh

Southern coastal salt marsh was identified as occurring within Carpinteria Marsh and Goleta Slough (CDFW 2014a). This sensitive natural community occurs in California along the coast from Point Conception southward. In addition to being listed as a sensitive natural community by the CDFW, southern coastal salt marsh provides habitat for special-status species including the western snowy plover, southern steelhead – southern California DPS, tidewater goby, globose dune beetle, and sandy beach tiger beetle.

4.4.2 Red Willow Thickets

Red willow thickets have a CDFW "threat" rank of G3/S3, meaning there are 21-100 viable occurrences worldwide/statewide, and more than 2,590 – 12,950 hectares. Red willow thickets communities are found in ditches, floodplains, lake edges, and low-gradient deposits along streams (Sawyer et al. 2009). Red willow thickets provide habitat for special-status species including the Cooper's hawk, Western pond turtle, and two-striped garter snake.

4.5 Critical Habitat

4.5.1 Western Snowy Plover

USFWS-designated critical habitat for Western snowy plover is located along West and East Beach (USFWS 2014a; 77 FR 36728-36869). This critical habitat is located directly along the beach of the Project Component 5 weir box. Western snowy plover critical habitat includes primary constituent elements of the physical or biological features essential to the conservation of this species (PCEs). USFWS defines PCEs as:

> "Sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil with:
>
> (1) Areas that are below heavily vegetated or developed areas and above daily high tides;
>
> (2) Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annual high tide or high-water flow, subject to inundation but not constantly under water, that support small invertebrates such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, that are essential food sources;

(3) Surf- or water-deposited organic debris, such as seaweed (including kelp and eel grass) or drift wood located on open substrates that supports and attracts small invertebrates . . . for food, and provides cover ; . . . and

(4) Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior" (77 FR 36728-36869).

As described in Section 4.3.1.2, based on the habitat, distance to documented nesting occurrences, and level of existing on-site disturbance, western snowy plover is unlikely to nest in the vicinity of the weir box and is present in winter. Although no adverse modifications to western snowy plover critical habitat would occur, the temporary direct and indirect impact to critical habitat (i.e., sand substrates) by the maintenance crew would limit the species' ability to feed at tidal areas around the weir box.

4.5.2 Tidewater Goby

The approximately 4-acre Mission Creek and Laguna Channel Lagoon is a Designated Critical Habitat unit (SB-11) for the tidewater goby (see Table 1 in 78 FR 8746-8819). The critical habitat is described as an intermittent sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall (i.e., non-rainy season) that closes or partially closes the lagoon or estuary, and thereby provides relatively stable conditions (PCE 1.c.). PCE 1.a. (suitable substrate) and 1.b. (submerged aquatic vegetation) occur through the Designated Critical Habitat unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation and tidal inundation (78 FR 8746-8819). The Conception Recovery Sub-Unit (CO 3) includes both the Laguna Channel (CO 3u) and Mission Creek (CO 3t). The Conception Recovery Sub-Unit habitats vary in length and all extend between the Pacific Ocean and Highway 101 (USFWS 2005). The open water of Laguna Lagoon and Creek are considered Environmental Sensitive Habitat Area's (ESHA) as described under Section 30240 of the Coastal Act because the lagoon and creek provide habitat for sensitive species, including the tidewater goby.

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5.0 ENVIRONMENTAL CHECKLIST FORM AND THRESHOLDS OF SIGNIFICANCE

The CEQA criteria and guidelines described as follows are also used as indicators of adverse effect under NEPA. In accordance with Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), biological resource impacts would be considered significant under CEQA if the proposed Project would result in any of the following conditions:

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 Game or U.S. Fish and Wildlife Service?

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 Game or US Fish and Wildlife Service?

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?

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?

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

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?

Thresholds of significance are criteria used to determine whether potential environmental effects are significant under CEQA or adverse under NEPA. For CEQA, the thresholds of significance used in this analysis were primarily based on Appendix G of the CEQA Guidelines. The thresholds are intended to assist the reader in understanding how and why this document reaches a conclusion that an impact is significant or adverse. The following classifications were applied to denote the significance of environmental impacts under CEQA:

- **Class I:** Significant – cannot be mitigated to a level that is less than significant
- **Class II:** Significant – can be mitigated to a level that is less than significant

- **Class III:** Less than significant – no mitigation required
- **Class IV:** Beneficial impact
- **No Impact:** No impact identified.

Descriptions for the potential level of significance under CEQA are as follows:

- **Significant Impact**: Known substantial environmental impacts. Further review needed to determine if there are feasible mitigation measures and/or alternatives to reduce the impact.
- **Potentially Significant Impact**: Unknown, potentially significant impacts that need further review to determine significance level and whether mitigable.
- **Less Than Significant Impact with Mitigation Incorporated**: Potentially significant impacts that can be avoided or reduced to less than significant levels with identified mitigation measures agreed-to by the applicant.
- **Less Than Significant Impact**: Impacts that are not substantial or significant.
- **No Impact**: No impacts.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed Project and components are located entirely within the footprint of existing structures, roads, and staging areas. No sensitive biological resources are located within these functioning areas; however, the Laguna Channel, critical habitat for the tidewater goby, extends along the western portion of the EEWWTP and the weir box East Beach area is critical habitat for the Western snowy plover. The Laguna Channel watershed is completely urban, receiving storm water through drains from the surrounding City landscape. The channel itself has previously undergone significant modifications to the channel for flood control, including realignment, concrete, and the placement of engineered structures (weirs, pumps, etc.). At EEWWTP, the Laguna Channel contains earthen berms and dense riparian vegetation. The channel also contains emergent vegetation and open water. Although building structures and landscaped ornamental vegetation has the potential for nesting birds adapted to urban environments, the riparian and wetland vegetation, open water, and channel banks provides the most ideal nesting, hunting, and foraging habitat for a greater diversity of bird species, including Cooper's hawk, bank swallow, and other native bird species. The aquatic habitat within Laguna Channel is known to support the federally endangered tidewater goby, and the Western pond turtle, a Species of Special Concern (SSC) in California. No special-status plant species were observed or are expected to occur within the Project's footprint. Potential habitat for one rare plant species, the southern tarplant, exists in open areas on the banks of the Laguna Channel, although it was not observed during field surveys.

The proposed Projects would not result in permanent or direct impacts to natural riparian vegetation, wetland, aquatic habitat, or the channel (bank to bank). Temporary, indirect impacts (i.e., noise, traffic, construction activities, ground vibrations, etc.) may affect wildlife species within Laguna Channel and its riparian habitat, especially to nesting birds, when in season. Impacts to the tidewater goby, Western pond turtle, and other aquatic organisms downstream related to chemical spills during construction and operations that could enter Laguna Channel would be a potentially significant impact (Class II) and adverse effect without mitigation. However, with implementation of mitigation measures (described below), impacts would be mitigated under CEQA and NEPA.

The Project will not result in any changes to ambient flow or storm water contributions to Laguna Channel. Storm water will continue to enter Laguna Channel during storm events through established storm drains and underground piping. Post-project water levels and ambient chemistry within the Laguna Channel will not change due to implementation of the Project; therefore, there will be no impact and effects will not be adverse. As such, aquatic wildlife will not be impacted by the Projects. All other EEWWTP effluent will exit the site through the ocean outfall and the recycled water program.

Additionally, the beach within the weir box BAA is critical habitat for Western snowy plover. Although this stretch of habitat experiences a high level of human activity, there is a potential that proposed Actions may have a temporarily negligible effect on a small area of Western snowy plover critical habitat. There is potential that heavy equipment and personnel on the beach will change or modify contours of the terrain (e.g., introducing heavy tire tracks or excessive personnel through critical habitat), however, this route is used by lifeguard and other emergency City personnel, so these effects would be negligible. Additionally, maintenance at the weir box may temporarily compact and/or dislodge beach sand through vehicle positioning and wrenching. Again, Actions at the weir box are minimal and temporary in nature. Impacts to western snowy plover individuals and/or habitats as a result of operation, maintenance and repair at the weir box may be a potentially significant impact (Class II) and adverse effect without mitigation. However, with implementation of mitigation measures (described below), impacts would be mitigated under CEQA and NEPA.

Impact conclusions and measures to reduce any potentially significant or adverse Project impacts are presented below by component and biological category. This assessment includes applicable federal and state regulations along with local laws, ordinances, regulations, and standards.

6.1 Component 1 – Desalination Facility Filter Feed Pump Station and Chemical Storage Area

Project activities associated with Component 1 Desalination Facility Filter Feed Pump Station and Chemical Storage Area are limited to system upgrades, filter feed pump station and chemical storage facility equipment service, and part replacement. It is expected that this equipment will all be of similar nature and purpose. Any potential Component 1 temporary impacts could occur within the existing facility footprint and be limited due to the types of construction upgrade activities.

See *Section 2.0 Regulatory Framework* for applicable federal and state regulations and local laws, ordinances, regulations, and standards.

6.1.1 Wildlife Species

No natural plant communities or habitats occur within the Component 1 footprint. Wildlife in vegetation adjacent to the pump station and chemical storage area are restricted to cosmopolitan, urban-adapted bird species; however, these individuals were transient and therefore have a low potential to nest within the routinely active facility. The Project would only temporarily affect perch or resting sites. As mentioned, the riparian corridor of Laguna Channel within the western portion of the EEWWTP property provides nesting habitat for a greater diversity of native birds. Although no direct impacts will occur to the riparian corridor, wildlife species in this area may

experience temporary indirect impacts from noise which may be considered a significant impact or adverse effect without mitigation. However, with implementation of mitigation measures (described below), impacts would be mitigated under CEQA and NEPA.

6.1.1.1 Nesting Birds

Some activities associated with desalination facility filter feed pump station and chemical storage area upgrades have the potential to disturb nesting birds on and adjacent to the site and within adjacent vegetation to the degree that the nests may be abandoned, resulting in a direct loss of an active bird nest. Therefore, impacts to wildlife species will be less than significant (Class II) and not adverse with the following mitigation measures incorporated: **BIO-1** (Pre-construction Nesting Bird Survey) and **BIO-2** Nesting Bird Buffers and Requirements).

BIO-1 Pre-construction Nesting Bird Survey. A pre-construction survey for nesting birds will be conducted by a qualified biologist to determine if active nests of special-status birds, or common bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code, are present in the construction zone or within 300 feet of the construction zone. The survey will be conducted within one week prior to construction or site preparation activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March 1 through August 30).

BIO-2 Nesting Bird Buffers and Requirements. If active nests are found, a no-construction buffer shall be established at a minimum of 100-foot (this distance may be greater depending on the bird species and construction activity, as determined by the biologist) around the nest site where it overlaps with work areas. Clearing and construction within no-construction buffer shall be postponed or halted, at the discretion of the biologist, until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. In addition, all active nests shall be mapped with a GPS unit and nest locations with 100-foot buffers overlain on aerial photographs to provide regular updated maps to inform the Project manager/engineer and construction crew of areas to avoid. The City-appointed biologist will also serve as a construction monitor during the breeding season to ensure that there are no inadvertent impacts to nesting birds.

6.2 Component 2 – Desalination Facility

When the desalination facility was placed into standby mode as noted above, the existing reverse osmosis membranes and filter media were removed; and the piping, tanks, and vessels were drained and cleaned. The remaining equipment has been maintained under the long term storage

program. As part of the Project reactivation associated with Component 2 Desalination Facility, it is expected that any replacement or upgraded equipment and/or structures will occur in the same location for a similar use and be of similar size and height as identified on the site plan for Coastal Development Permit (CDP) 4-96-119 approving the Desalination Facility as a permanent use. These activities may involve the repair, construction, maintenance, upgrades, or excavation

See *Section 2.0 Regulatory Framework* for applicable federal and state regulations and local laws, ordinances, regulations, and standards.

6.2.1 Wildlife Species

No natural plant communities or habitats occur within the Component 2 footprint. Similar to Component 1, wildlife in vegetation within and adjacent to the desalination facility are restricted to cosmopolitan, urban-adapted bird species. These individuals were transient and therefore have a low potential to nest within the routinely active facility. The Project would only temporarily affect perch or resting sites and would not be considered a significant impact, even during construction. Although no direct impacts will occur to wildlife species, the wildlife species may experience temporary indirect impacts from noise.

6.2.1.1 Nesting Birds

Certain activities associated with desalination facility upgrades have the potential to disturb nesting birds on and adjacent to the site and within adjacent vegetation to the degree that the nests may be abandoned, resulting in a direct loss of an active bird nest. Therefore, impacts to wildlife species will be less than significant (Class II) and not adverse with the following mitigation measures incorporated: **BIO-1** (Pre-construction Nesting Bird Survey) and **BIO-2** (Nesting Bird Buffers and Requirements).

6.3 Component 3 – EEWWTP SCE Substation and Outfall Mixing Box

The Component 3 Outfall Mixing Box is located on the southwest corner of the EEWWTP property. The southwestern portion of the EEWWTP and BSA, where the outfall mixing box is located, includes the Laguna Channel and associated riparian vegetation.

See *Section 2.0 Regulatory Framework* for applicable federal and state regulations and local laws, ordinances, regulations, and standards.

6.3.1 Hydrology

Component 3 impacts would be in areas adjacent to Laguna Channel. Construction activities associated with Component 3 would avoid direct impacts to Laguna Channel hydrology. However, indirect hydrology impacts may occur during outfall mixing box upgrades. Therefore, impacts to hydrology will be less than significant (Class II) and not adverse with the following mitigation measures incorporated: **BIO-3** (Best Management Practices; i.e., straw wattles, sandbags, etc.) for stormwater runoff if activities occur October through May.

BIO-3 Best Management Practices (BMPs). The Contractor will implement appropriate BMPs to control sediment, coarse particles, concrete, and other materials exposed during demolition and drilling to protect aquatic, wetland, and riparian habitats adjacent to construction site. Erosion control measures will be implemented to prevent runoff of these materials into Laguna Channel and El Estero Swale. Silt fencing, straw bales, and/or sand bags will be used in conjunction with other methods to prevent turbid waters from entering stream channels

During construction activities, washing of concrete, paint, or equipment shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Washing will not be allowed in locations where the tainted water could enter Laguna Channel or El Estero Swale.

6.3.2 Sensitive Vegetation Communities and Habitats

Potential indirect Project impacts may occur to the Laguna Channel riparian habitat. To prevent impacts, a 50-foot buffer will be established to protect the habitats and wildlife found within the channel. Although portions of the outfall mixing box work and access roads are within the buffer zone and near the riparian zone, direct impacts to riparian vegetation is not expected with implementation of additional protective measures. Direct impacts, while unlikely, could include direct removal or damage to riparian vegetation, especially branches of willow, oak, and sycamore trees by construction equipment accessing the western side of the EEWWTP facility. Protective measures are necessary to avoid the potential for direct impacts to riparian vegetation. Indirect impacts are expected primarily to nesting birds. Direct impacts to riparian habitat (i.e., removal of vegetation) would likely require a California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement (SAA). It is recommended that riparian trees be avoided by placement of informational signs (i.e., overhanging trees) and an environmental education program. Therefore, impacts to riparian habitat will be less than significant (Class II) and not adverse with mitigation measures **BIO-4** (Wetland and Riparian Protection) and **BIO-5** (Streambed Alteration Agreement) incorporated.

6.3.2.1 Riparian

Implementation of the following measures are recommended to protect these sensitive resources:

BIO-4 Wetland and Riparian Protection. All construction-related activities, including, but not limited to demolition, construction, staging area, and access routes will be located a minimum of 50-feet from riparian habitat associated with Laguna Channel and El Estero Swale, when possible. In locations where the construction activities encroach within this buffer, further protection to riparian vegetation and the wetland and aquatic habitats of Laguna Channel should be implemented. Specifically, these protection measures will include the following:

A. The Contractor will establish a temporary barrier between riparian habitat using highly visible construction fencing to ensure that trees and other vegetation are visible during construction. It is recommended that the fencing be placed along the access road, just to the west of the curb.

B. The Contractor will install road signs along the western access route that notify drivers of sizeable vehicles/construction equipment (cranes, drilling rigs, water and concrete trucks, etc.) that sensitive riparian trees and vegetation occur adjacent to the road and work site.

C. When sizeable construction equipment is working near riparian vegetation, it is highly encouraged that flaggers are utilized to assist in equipment positioning to avoid riparian impacts during construction activities

D. If direct impacts to riparian vegetation cannot be avoided, a CDFW Streambed Alteration Agreement (SAA) pursuant to Section 1600 et seq. of the California Fish and Game Code will be acquired before initiation of construction. This SAA will add additional costs and time, thus it is beneficial to the fast-paced track of this Project to avoid riparian vegetation. The SAA is further discussed in mitigation measure **BIO-5** (Streambed Alteration Agreement).

If direct impacts (temporary or permanent) to riparian habitat, including vegetation impacts or removal, are not fully avoided, we highly recommend the following measure:

BIO-5 Streambed Alteration Agreement. The applicant will consult with the California Department of Fish and Wildlife (CDFW) to obtain a Streambed Alteration Agreement from the CDFW pursuant to Section 1600 et seq. of the California Fish and Game Code for any impacts associated with vegetation removal or bank disturbance (within top of bank) within or adjacent to Laguna Channel. The SAA

will ensure reasonable measures are included to protect resources within the area of impact.

6.3.3 Special-Status Plant Species

No special-status plant species were observed within the BSA. Aside from those surveys that have already been conducted (Dudek 2013, Dudek 2014b, and Section 3.2 above), no further surveys or other actions (avoidance, minimization, or mitigation) are recommended due to the lack of suitable habitat in Components 1 through 4.

6.3.4 Special-Status Wildlife Species

6.3.4.1 Tidewater Goby and Western Pond Turtle

The federally-endangered tidewater goby and Western pond turtle, a Species of Special Concern (SSC) in California is known to occur in the Laguna Channel within the BAA. Direct construction-related impacts to Laguna Channel are not proposed; however, direct adverse impacts to Laguna Channel aquatic habitat could occur from potential spill issues during construction and operational activities. Therefore, impacts to tidewater goby and western pond turtle individuals and their habitat will be less than significant (Class II) and not adverse with the following mitigation measures: **BIO-3** (Best Management Practices [BMPs]), **BIO-4** (Wetland and Riparian Protection) prior to and during construction and operations, **BIO-6** (Workers Education Training), and **BIO-7** (Compliance Monitoring).

BIO-6 Workers Educational Training. Prior to the initiation of any site disturbance and/or construction activities, all personnel associated with the Projects will attend a worker education training program (program) conducted by a qualified biologist. In general, it is recommended that the program discuss tidewater goby and Western pond turtle habitat preference(s), occupied habitat in the area, life histories, law and regulations, as well as potential construction impacts and protection measures, and project limits. Protections and regulations for the Laguna Channel, the riparian habitat, and nesting birds will also be included in the program. It is recommended that a species and habitat fact sheet also be developed prior to the training program and distributed at the training program to all contractors, employers and other personnel involved with the construction of the Projects. Specifically, the program will also include:

A. Measures to prevent indirect impacts during construction activities will be covered, including delivery, storage, and usage of construction materials and chemicals as they relate to the protection of adjacent aquatic habitat.

B. Training materials will include laws and regulations that protect sensitive biological resources, the consequences of non-compliance with those laws and regulations and a contact person (i.e. construction manager, biological monitor, and City's Project manager) in the event that protected biological resources are affected.

The City will notify the qualified biologist in advance of the kick-off meeting and any subsequent meetings that may take place if additional contractors are employed during additional construction projects of the project. A sign in sheet will be circulated for signatures to all personal that attend the workers educational training to confirm that program materials were received and that they understand information presented.

BIO-7 Compliance Monitoring. The City will retain a qualified biologist to monitor installation, operations, and compliance of recommended measures **BIO-3** (Best Management Practices [BMPs]) and **BIO-4** (Wetland and Riparian Protection).

6.3.5 Nesting Birds

Impacts to nesting bird species will be less than significant (Class II) and not adverse with the following mitigation measures incorporated: **BIO-1** (Pre-construction Nesting Bird Survey) and **BIO-2** (Nesting Bird Buffers and Requirements.

6.4 Component 4 – Padre Pump Station

Construction activities associated with Component 4 Padre Pump Station include replacing buried piping, converting Padre Well to a monitoring well, replacing existing entrance gate, installing new suction side piping, separating exiting Padre Well discharge piping. Pipe replacement will occur within the existing asphalt Castillo Street. Upgrades to the Padre Pump Station facility will be within the footprint of the existing structure.

See *Section 2.0 Regulatory Framework* for applicable federal and state regulations and local laws, ordinances, regulations, and standards.

6.4.1 Wildlife Species

No natural plant communities or habitats occur within the Component 4 footprint. Similar to Component 1 and Component 2, wildlife in vegetation within and adjacent to the Padre Pump Station are restricted to cosmopolitan, urban-adapted bird species; however, these individuals were transient have a low potential to nest within the routinely active facility. Along Castillo Street and adjacent the Padre Pump Station there are California live oak trees that provide

potential habitat to nesting birds and have local plan policies protecting them. The Project would only temporary affect perch or resting sites.

6.4.1.1 Nesting Birds

Select activities associated with Padre Pump Station upgrades have the potential to disturb nesting birds on and adjacent to the site, within adjacent vegetation to the degree that the nests may be abandoned, resulting in a direct loss of an active bird nest. Therefore, impacts to nesting bird species will be less than significant (Class II) and not adverse with the following mitigation measures incorporated: **BIO-1** (Pre-construction Nesting Bird Survey) and **BIO-2** (Nesting Bird Buffers and Requirements).

6.5 Component 5 – Offshore Intake Facilities Including the Beach Weir Box

6.5.1 Offshore Intake Facilities

The Tenera Biological Assessment assessed the potential biological impacts associated with the Offshore Intake Facilities Component (Tenera 2014a). The following recommendations were made for the initial and follow-up maintenance efforts involving the intake structures. Although the initial maintenance cleaning will involve the removal of a larger volume of material, the same recommendations would apply to both operations.

- If possible, only clean the top rim and interior surfaces. This would allow the macrofouling community on the outer surfaces to continue to provide habitat for small fishes and invertebrates.
- Remove any large slow-moving macroinvertebrates to the hard reef area adjacent to Intake B**,** where feasible. These would include sea urchins, sea cucumbers, sea stars, giant keyhole limpets, and large snails.
- Cut and bag any large kelp plants to avoid the creation of large drift that could foul boat props. The bags could be moved to the surface and disposed of further offshore or at a landfill.
- Perform the kelp and macroinvertebrate removal activities using divers to allow fish to move out of the area before mechanical or pressure washing commences.
- If the maintenance activities are conducted in early spring, the algal growth will be at a minimum and any recently settled spores will be removed before they begin growing. This will minimize the disturbance on other organisms that might be attracted to the structures due to the algal growth.

See *Section 2.0 Regulatory Framework* for applicable federal and state regulations and local laws, ordinances, regulations, and standards.

6.5.2 Beach Weir Box

The Dudek Biological Assessment assessed the potential biological impacts associated with the Beach Weir Box Component (Dudek 2014b). Based on the biological assessment, no potential adverse effects to Western snowy plover habitat (breeding, non-breeding, or critical habitat) and/or impacts to individuals are anticipated; and no potential adverse effects to tidewater goby habitat and/or individuals are anticipated. Although Western snowy plovers are expected to breed in Santa Barbara County, such breeding activities would be less likely in locations near the Action Area, such as the Santa Barbara Harbor sandspit. Nevertheless, implementation of the recommended avoidance measures would further ensure no impacts would occur to breeding Western snowy plovers. The measures will also result in avoidance of impacts to nesting western snowy plover. All avoidance measures are to be developed and implemented in coordination with USFWS.

See *Section 2.0 Regulatory Framework* for applicable federal and state regulations and local laws, ordinances, regulations, and standards.

Impacts from the offshore intake facilities and beach weir box on biological resources will be less than significant (Class II) and not adverse with the following mitigation measures: **BIO-1** (Pre-construction Nesting Bird Survey), **BIO-2** (Nesting Bird Buffers and Requirements), **BIO-6** (Workers Education Training), **BIO-7** (Compliance Monitoring), **BIO-8** (Establish Temporary Fencing), **BIO-9** (Weir Box Access), **BIO-10** (Personnel Restrictions), **BIO-11** (Night-time Lighting Restrictions), **BIO-12** (Conduct Pre-activity Nesting Bird Surveys), **BIO-13** (Conduct Biological Activity Monitoring During Project Actions), **BIO-14** (Conduct Pre-activity Bird Surveys), **BIO-15** (Pre-activity Evaluation), **BIO-16** (Beach Sand Maintenance or Replacement), **BIO-17** (Grunion Surveys), and **BIO-18** (Marine Mammal Measures).

General Avoidance Measures

BIO-8 Establish Temporary Fencing. Temporary fencing will be installed around the perimeter of the weir box on the beach to prevent inadvertent encroachment by crews and equipment to the surrounding beach area.

BIO-9 Weir Box Access**.** Access from the public bike trail to the weir box will occur along the least disturbing route feasible. This will include keeping all personnel and equipment directly adjacent to or within the iceplant bordering the northern portion of beach.

BIO-10 Personnel Restrictions**.** Maintenance personnel will be prohibited from harming, harassing, or feeding wildlife and/or collecting special-status plant species or

wildlife species; bringing pets on the project area; littering on the project area; or exceeding normal daytime operational noise or nighttime lighting.

BIO-11 Night-time Lighting Restrictions**.** Night-time lighting shall be the minimum necessary for personnel safety and execution of maintenance activities shall not extend past standard working hours. Lighting shall be directed/shielded downward to minimize lighting along the beach.

Avoidance of Breeding Western Snowy Plover

BIO-12 Conduct Pre-activity Nesting Bird Surveys**.** If construction work must occur during the Western snowy plover nesting season (March through August), the applicant shall have pre-construction nesting surveys conducted by a qualified biologist to determine whether active nests of this species are present in the Action Area or within 300 feet of the Action Area (buffer to be established in coordination with the USFWS). If active nests are found, repair and maintenance activities within 300 feet of the nest shall be postponed or halted, at the discretion of the biologist in consultation with CDFW and USFWS, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In addition, construction worker access route to the weir box will be re-routed to avoid disrupting nesting behaviors. This new access route will be established in coordination with the USFWS. A biological monitor shall be present during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFW and USFWS.

BIO-13 Conduct Biological Activity Monitoring During Project Actions**.** An authorized biological monitor must be present at the construction sites during all repair/maintenance activities. The monitor shall survey the activity site (i.e., weir box) and surrounding area for compliance with all avoidance measures. Weekly biological construction monitoring reports shall be prepared and submitted to the appropriate permitting and responsible agencies through the duration of the repair/maintenance activities. Monthly biological construction monitoring reports shall be prepared and submitted through the duration of project activities to document compliance with avoidance measures.

Avoidance of Wintering Snowy Plover

BIO-14 Conduct Pre-activity Bird Surveys**.** Biological surveys for sensitive bird species will be conducted by an authorized biologist prior to weir box maintenance

activities. If such species are present, construction will be delayed until the sensitive bird species have vacated the work area.

Minimization of Effects to Snowy Plover Critical Habitat

BIO-15 Pre-activity Evaluation**.** Prior to conducting project activities, a habitat assessment and evaluation will be assessed and approved by an approved biologist. This measure will ensure that avoidance measures have been provided to ensure the avoidance of Western snowy plovers.

BIO-16 Beach Sand Maintenance or Replacement. During the Actions, all efforts will be made to not disturb sand substrates more than is required for access to the weir box and maintenance/repair activities within the fenced work areas. During the Actions, beach sand paths uses to access the weir box will be maintained or piled and replaced after activities are completed. After the Actions are completed at the weir box, the disturbed sand (both around the weir box and paths used to access the work area) will be replaced. The replacement of sand will include raking and leveling the sand back to pre-activity condition or replacing any sand that was piled during work activities.

California Grunion

BIO-17 Grunion Surveys. Pre-maintenance California grunion surveys conducted by a City-approved biologist shall be required during the nearest high tide (full or new moon) for three nights prior to the onset of on-shore maintenance during the spawning period for grunion (March through August). The survey area will include the beach directly around the weir box and a survey buffer of 100 feet to the north and south of the weir box. If grunions are observed, maintenance shall not proceed (see BIO-12 and BIO-13, Bird Survey and Monitoring) until the next high tide series and after survey confirms that no spawning grunion are present (during high tide).

If spawning grunions are observed in April through May, no on-shore maintenance activities shall be permitted in compliance with California Department of Fish and Wildlife regulations.

If spawning grunion are observed June through August, maintenance may proceed after the next high tide series (approximately 10-14 days), if no additional spawning grunion are observed (see BIO-11, Night-time Lighting Restrictions, for survey requirements).

Marine Mammals

The following measure will avoid any potential conflicts with whale or whale migration and ensure consistency and compliance with the MMPA (i.e., no take of marine mammals).

BIO-18 Marine Mammal Measures. The maximum boat speed limit between Santa Barbara Harbor and the anchor sites shall be 5 mph (4.34 knots) for any boat used for repair and maintenance of the intakes, anchor sites, or any other component of the Charles Myers Desalination Plant.

Within 24 hours of the commencement of repair and maintenance activities in the ocean, a City-approved qualified biologist shall monitor the ocean water between the Santa Barbara Harbor and approximately 300 feet south and west of the anchor sites from Stearns Wharf using a spotting scope and/or binoculars for the presence or absence of marine mammal species. A second marine mammal survey shall be conducted within an hour of the boat departing from the harbor to the anchor sites. The biologist will record the location and abundance of all marine mammal species and report the findings to the City within an hour of observation.

During all travel, as well as repair and maintenance activities, a City-approved biologist shall monitor all activities from Stearns Wharf to ensure no marine mammals are harassed. The biologist shall remain in radio or cell phone contact with the boat captain informing the captain of any marine mammals within the path of the boat or any marine mammals that may be approaching the boat on the port or starboard side. It is recommended that the boat remains a minimum of 25 feet distance from seals or sea lions in the water or on buoys during travel. NOAA Fisheries recommends a distance of 100 yards (300 feet) between boats and seals and sea lions on land or rocks. Divers shall not attempt interact with any marine mammals during maintenance operations.

If a whales, dolphin, or porpoises are observed in the harbor and maintenance activities proceed, a City-approved biologist shall be present on the boat to observe whale location and behaviors, and ensure the boat maintains a 100 yard (300 foot) distance separation. If the whale exhibits any adverse behaviors (evasive or defensive), the biologist will direct the boat to decrease speed and change direction and increase distance from the whale until the whale has either left the area or until the distance is sufficient to reduce stress displayed by the whale.

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Attachment 6

Charles Meyer Desalination Plant Reactivation Project Air Quality and Greenhouse Gases Technical Memorandum (Dudek 2015b)

DUDEK

MEMORANDUM

To:	City of Santa Barbara
From:	Dudek
Subject:	Charles Meyer Desalination Plant Reactivation Project Air Quality and Greenhouse Gases Technical Memorandum
Date:	June 10, 2015
CC:	Joe Monaco, Dudek Jennifer Longabaugh, Dudek Jennifer Reed, Dudek Austin Melcher, Dudek
Attachments:	Attachment A – Air Quality and Greenhouse Gas Calculations

1.0 INTRODUCTION

1.1 Purpose

The purpose of this memorandum is to evaluate the potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the Charles Meyer Desalination Plant Reactivation Project. It evaluates short-term (construction) and long-term (operational) impacts to air quality and global climate change that would potentially occur as a result of implementation of the Reactivation Project. Impacts are evaluated for their significance based on the Santa Barbara County Air Pollution Control District's (SBCAPCD) and the City of Santa Barbara's (City's) environmental thresholds of significance for criteria air pollutants and GHG emissions.

1.2 Project Location

The project site is located within the South Central Coast Air Basin (SCCAB), which includes San Luis Obispo, Santa Barbara, and Ventura Counties, and is within the jurisdictional boundaries of the SBCAPCD. Geographic features that influence Santa Barbara's air quality include the Santa Barbara Channel (Pacific Ocean) to the south, and the east–west trending Santa Ynez Mountains to the north, with elevations up to 4,707 feet (City of Santa Barbara 2010).

1.3 Project Description

The desalination plant was originally approved as a temporary facility in 1991, and was constructed and first became operational in 1992. It was later approved as a permanent facility in 1994. The 1991 and 1994 approvals covered the construction, operation, and maintenance of the facility. The Reactivation Project includes improvements necessary for reactivation that include the following:

- Cleaning and reinstallation of power and communication technology as well as a new intake screen at the offshore intake system and beach box wier.
- Desalination plant facility improvements including replacing the seawater osmosis process components, upgrading multi-media filtration, replacing cartridge treatment system, upgrading lime storage and feed system, installation of a UV disinfection process, refurbishing water storage tanks and replacing product water pumps, relocation carbon dioxide storage tank and dosing system, refurbishing backwash wastewater treatment system, cleaning and relocation the service water and flushing system, replacing the brine discharge system pumps, and upgrades to the electrical service equipment.
- Pump station and chemical storage facility replacement and modernization.
- Concrete repair and coating at brine mixing and sampling structure.
- Replacement of communication cabling for desalination plant piping and electrical distribution.
- Relocation and repurposing of the West Padre Street Pump Station.

Reactivation of the desalination plant will put the facility back into service from its long-term storage condition, to initially produce 3,125 acre-feet per year (AFY), and potentially up to 7,500 AFY for drought relief.

2.0 GENERAL ANALYSIS AND METHODOLOGY

Project-generated air pollutant and GHG emissions are estimated using the most recent version of the California Emissions Estimator Model (CalEEMod),[1] consistent with the SBCAPCD recommendations for project-level review because CalEEMod uses current emission factors and

1 CalEEMod Version 2013.2.2, available online (http://www.caleemod.com).

updated default values and has the ability to quantify indirect GHG emissions and GHG mitigation (SBCAPCD 2015b).

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include reactive organic compounds (ROCs; also referred to as volatile organic compounds (VOCs)), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size ($PM_{2.5}$). ROCs and NO_x are important because they are precursors to ozone (O_3). Criteria air pollutant emissions associated with construction of the Reactivation Project were estimated for the following emission sources: operation of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. Project operational emission sources evaluated include mobile (vehicle) sources, area sources such as landscape maintenance and consumer products, and natural gas use.

GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a

function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2E).[2]

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs (SBCAPCD 2015a). This approach is consistent with the *Final Statement of Reasons for Regulatory Action* for amendments to the CEQA Guidelines, which confirms that an environmental impact report or other environmental document must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009a).

GHG emissions associated with construction of the Reactivation Project were estimated for the following emission sources: operation of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. GHG emission sources associated with operation of the Desalination Facility were evaluated for energy use (natural gas and generation of electricity consumed by the project); project-generated vehicular traffic; solid waste generation; and generation of electricity associated with water supply and wastewater treatment. Unless specifically noted, the assumptions and methodologies described in Section 2.1, Project Construction Assumptions, and Section 2.2, Project Operation Assumptions, apply to both the evaluation of criteria air pollutants and GHGs.

2.1 Project Construction Assumptions

Emissions from the construction phase of the project were estimated through the use of emission factors from CalEEMod. For purposes of estimating project emissions, and based on information provided by the applicant, it is assumed that construction of the Reactivation Project would commence in July 2015 and would last approximately 13 months, ending in August 2016. Construction of the Reactivation Project is estimated to occur in the following approximate phases:

Desalination Plant Construction

- Demolition: July 2015 – September 2015 (3 months)

2 The CO_2E for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons of CO_2E = (metric tons of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 21, which means that emissions of 1 metric ton of CH_4 are equivalent to emissions of 21 metric tons of CO_2, and the GWP for N_2O is 310, based on the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report. Although the IPCC has released subsequent Assessment Reports with updated GWPs, California Air Resources Board (CARB) reporting and other statewide documents utilize the GWP in the IPCC Second Assessment Report. As such, it is appropriate to use the hardwired GWP values in CalEEMod from the IPCC Second Assessment Report.

- Site Civil Work: August 2015 – December 2015 (5 months)
- Process Mechanical/Electrical: December 2015 – March 2016 (4 months)
    - Modular Equipment Construction: December 2015 – January 2016 (2 months)
    - Modular Equipment Delivered and Installed: February 2016 – March 2016 (2 months)
- Commissioning: April 2016 – August 2016 (5 months)

Intake Construction

- Beach Box Wier: July 2015 – August 2015 (1.5 months)
- In Water Intake Work: July 2015 – August 2015 (1.5 months)

The construction equipment mix used for the air emissions modeling is shown in Table 1, Construction Equipment.

Table 1
Construction Equipment

Construction Phase	Equipment	Quantity
Land-Based Desalination Plant Construction		
Demolition (3 months)	Crane	1
	Excavator	1
	Forklift	1
	Backhoe	1
	Plate Compactor	2
Site Civil Work (5 months)	Excavators	1
	Forklift	1
	Backhoe	1
	Frontend Loader	1
Process Mechanical and Electrical Work		
Modular Equipment Construction (off-site) (2 months)	Forklift	1
	Crane	1
Modular Equipment Delivery and Installation (on-site) (2 months)	Forklift	1
	Crane	1
In-Water Intake Construction		
Beach Box Wier	Utility Truck	1
In Water Work	Utility Boat with 10 ton Crane	1
	Tug Boat	1

Source: Carollo 2015

The number of on-site workers, vendor trucks (delivery trucks) and haul trucks are shown in Table 2. In addition to daily workers on-site, an additional six administration would be on site for the entire duration of construction each day (Carollo 2015). For the purposes of modeling it was assumed each worker, vendor truck and haul truck would include 2 one-way trips.

Table 2
Construction Workers, Vendor Trucks and Haul Trucks (per day)

Construction Phase	Workers*	Vendor Trucks*	Haul Trucks*
Land-Based Desalination Plant Construction			
Demolition (3 months, 200 tons of export material)	16	0	6
Site Civil Work (5 months, 500 cubic yards of imported material)	16	1	1 (32 over entire phase)
Process Mechanical and Electrical Work			
Modular Equipment Construction (off-site) (2 months)	21	1 (2 delivery trucks per week)	0
Modular Equipment Delivery and Installation (on-site) (2 months)	21	1 (4 delivery trucks per week)	1 (16 total over entire phase)
Commissioning	16	1 (2 delivery trucks per week)	0
In-Water Intake Construction			
Intake Construction (6 weeks)	6 (on-shore), 8 (off-shore)	0	0

Source: Carollo 2015*Assumes 2 one-way trips per worker, vendor or haul truck

Land-Based Construction Emissions

For the analysis of emissions resulting from construction of the desalination plant, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Worker, vendor and haul truck trip estimates were provided by the project's construction contractor (Carollo 2015). Approximately 200 tons of material would be exported during the demolition phase.

In-Water Intake Construction Emissions

For the evaluation of emissions resulting from the construction of the intake structure it was also assumed that construction activities would occur for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. It was assumed that any travel to and from the project site by marine vessels used for construction would occur in addition to the 8 hour per day construction time period to provide a conservative, worst case scenario for daily criteria air

pollutant emissions. To estimate emissions generated from marine vessels, information from the construction contractor was used whenever possible to accurately represent project-specific conditions. Additional information and the methodology for calculating marine vessel emissions from *Emission Estimation Methodology for Commercial Harbor Craft Operating in California* (CARB 2004) were utilized for the utility boat and tug boat. In these calculations it was assumed that the tug boats were utilizing 0.0015% (15 parts per million (ppm)) sulfur diesel fuel to comply with the Harbor Craft Fuel Regulation (CARB 2008b).

Marine vessel emissions were calculated for all vessel use within California Regulated Waters, which corresponds to the area within 24 nautical miles of the California shoreline and any internal California waterways. This boundary also corresponds to the regulatory area for the Ocean-Going Vessel Fuel Regulation (CARB 2011) and the Harbor Craft Fuel Regulation (CARB 2008b). The marine vessels used during construction would travel to the intake site from Port Hueneme and were conservatively assumed to travel at the slowest speed of 12 knots as regulated by the Santa Barbara Channel Vessel Speed Reduction Trial (SBCAPCD 2014).

The tug boat and utility boat both fall into the category of Harbor Craft that are primarily used to assist other vessels maneuvering in harbors, over the open sea or through rivers and canals by pushing and towing. The maximum power ratings for the main propulsion engines and auxiliary engines were determined by personal communications with the construction contractor. The engine ages were determined by assuming the engines were in the fiftieth percentile for engine ages in 2015, which according to CARB's OFFRAOD model engine attrition curve that is used in the *Emission Estimation Methodology for Commercial Harbor Craft Operating in California* would make the engine's age the same as its useful life. The useful life for each engine was taken from the *Emission Estimation Methodology for Commercial Harbor Craft Operating in California* based on the vessel type (CARB 2004).

The zero-hour emissions factors and methodologies from the *Emission Estimation Methodology for Commercial Harbor Craft Operating in California* were used to determine the GHG emissions and criteria pollutant emissions for the tug boat and utility boat. The CO_2, ROC, NO_x, CO and PM_{10} emissions were calculated using the general harbor craft emissions equation that uses engine specific zero-hour emission factors, fuel correction, engine age and deterioration factors, the rated engine power, load factor, and time of engine operation. The $PM_{2.5}$ emissions were assumed to be 98% of the PM_{10} emissions as is a general practice in other port emission inventories (Port of West Sacramento 2010). A sulfur mass balance approach was used to calculated the sulfur dioxide (SO_2) emissions based on the fuel sulfur content, rated engine power, load factor, time of engine operation and the brake specific fuel consumption rate from the *Emission Estimation Methodology for Commercial Harbor Craft Operating in California*

(CARB 2004). It was conservatively assumed that 100% of the sulfur in fuel burned would become SO_2.

2.2 Project Operation Assumptions

Operational Emissions

Following the completion of construction activities, the project would generate ROC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources and area sources including vehicular traffic associated with worker trips, landscaping, and potential architectural coating application. Emissions associated with project-generated daily traffic were estimated based on information provided by the construction contractor. Approximately 8 workers would be on-site daily during project operation. CalEEMod default data, including temperature, trip characteristics, variable start information, emission factors, and trip distances, were conservatively used for the model inputs. Project-related traffic was assumed to consist of a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for the year 2016, when the project would be in its first year of operation, were used to estimate emissions. In addition to estimating mobile source emissions, CalEEMod was also used to estimate emissions from project area and energy sources. Area sources include gasoline-powered landscape maintenance equipment, consumer products, and architectural coatings for building maintenance. To conservatively estimate emissions from these sources, the CalEEMod default land use for "Unrefrigerated Warehouse – No Rail" was used as a representative land use for estimating general landscaping and architectural coating emissions, as well as GHG emissions associated with water and wastewater use, and solid waste generation. Annual electricity emissions were estimated using the emissions factors for Southern California Edison (SCE), which would provide electricity for the project. Default electricity and natural gas usage factors for the land use Unrefrigerated Warehouse – No Rail were used in CalEEMod to estimate GHG emissions associated with proposed building operation. Default factors were also used to estimate GHG emissions associated with water supply, wastewater treatment, and solid waste. Energy sources include facility electricity consumption which is an indirect emission source and does not generated localized criteria pollutant emissions. GHG emissions associated with electricity use are discussed in Section 4.2.

Sensitive Receptors

Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality) (CARB 2005). Land uses where sensitive individuals are most likely to spend time

include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). The closest sensitive receptors to the Reactivation Project are multifamily residences located approximately 640 feet north of the project site.

3.0 AIR QUALITY ASSESSMENT

3.1 Thresholds of Significance

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), which provides guidance that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors)
4. Expose sensitive receptors to substantial pollutant concentrations
5. Create objectionable odors affecting a substantial number of people.

In addition, Appendix G of the CEQA Guidelines indicates that where available, the significance criteria established by the applicable air district may be relied upon to determine whether the Reactivation Project would have a significant impact on air quality. The SBCAPCD has prepared criteria and thresholds for determining significance under CEQA. According to the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (SBCAPCD 2015a), a project would have a significant air quality effect on the environment if operation of the project would:

- Emit (from all project sources, both stationary and mobile) more than the daily trigger for offsets or air quality impact analysis set in the SBCAPCD New Source Review Rule[3], for any pollutant (i.e., 240 pounds per day for ROC or NO_x; and 80 pounds per day for PM_{10});

[3] The APCD New Source Review Rule as it existed at the time the APCD Environmental Review Guidelines were adopted in October 1995 (SBCAPCD 2015b).

- Emit 25 pounds per day or more of NO_X or ROC from motor vehicle trips only;
- Cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone);
- Exceed the SBCAPCD health risk public notification thresholds adopted by the SBCAPCD Board for noncancer risk; and
- Be inconsistent with the latest adopted federal and state air quality plans for Santa Barbara County.

As stated in the SBAPCD's *Scope and Content of Air Quality Sections in Environmental Documents*, the SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or construction emissions; however, the SBCAPCD uses 25 tons per year for ROC or NO_X as a guideline for determining the significance of construction impacts.

Due to the relatively low background ambient CO levels in the County, localized CO impacts associated with congested intersections are not expected to exceed the CO health-related air quality standards (SBCAPCD 2015a). The most stringent ambient air quality standard for CO is the CAAQS at 20 parts per million (ppm) for the 1-hour standard and 9.0 ppm for the 8-hour standard. The Canon Perdido monitoring station, located at 700 East Canon Perdido, is the closest monitoring station to the project site where CO concentrations are measured. The Canon Perdido station reported 1-hour concentrations between 2.0 and 3.2, and 8-hour concentrations between 0.9 to 1.9 during the 2010-2012 monitoring period which is the most recent CO data available for the Canon Perdido station (CARB 2015; EPA 2014). Additionally, the project is not considered a substantial trip-generating project as construction-related trips would be limited to haul trucks removing demolition material, and periodic delivery trucks for phased equipment deliveries over the course of construction. Operational trips associated with on-going facility operations would consist of 8 daily employees. As a result of the minimal vehicle trips generated during short-term construction activities and long-term operations, the project would not generate substantial trips such that CO hot spots would be created at nearby intersections. Therefore, a formal CO "hot spots" analysis is not required.

The City has also established thresholds based on the State CEQA Guidelines, SBCAPCD impact significance guidelines, and City policies (Charter, Conservation Element, and Master Environmental Assessment). A significant project-specific air quality impact may be identified if any of the following guidelines are exceeded, unless measures are implemented to avoid or lessen the significant effect (City of Santa Barbara 2010):

- Exceeding adopted Clean Air Plan growth projections and emission forecasts

- Exposure of sensitive receptors to substantial pollutant emissions
- Exceeding SBCAPCD health risks public notification thresholds
- Creation of objectionable odors affecting a substantial number of people in violation of SBCAPCD regulations.

In addition, a significant citywide project-specific air quality impact may also constitute a considerable contribution to a cumulative impact to the regional air basin.

3.2 Impact Analysis

3.2.1 Construction

Construction of the Reactivation Project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Ground disturbances and equipment operation during construction activities would produce short-term PM_{10} and $PM_{2.5}$ emissions. Implementation of the Reactivation Project would generate construction-related air pollutant emissions from both entrained dust and vehicle emissions. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions.

As previously described in Section 2.1, Project Construction Assumptions, it is assumed that construction of the Reactivation Project would commence in July 2015 and would last approximately 13 months, ending in August 2016. Table 3, Estimated Daily Maximum Construction Emissions, shows the estimated maximum unmitigated daily winter or summer construction emissions associated with construction of the Reactivation Project.

Table 3
Estimated Daily Maximum Construction Emissions
(pounds per day unmitigated)

Emissions Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Desalination Plant	3.70	35.05	26.84	0.04	2.81	2.10
Intake	15.95	185.46	50.71	0.08	6.66	6.52
Total	**19.65**	**220.51**	**77.55**	**0.12**	**9.47**	**8.62**

Notes: See Attachment A for detailed results.
These estimates do not reflect compliance with SBCAPCD standard dust control measures.

Standard dust control measures as required by the SBCAPCD for all discretionary construction activities would be implemented as delineated in the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (SBCAPCD 2015a) which are based on the policies of the 1979 Air Quality Attainment Plan, and as enforced through SBCAPCD Rule 302 (Visible Emissions) and 303 (Nuisance). Vehicle exhaust results from internal combustion engines used by construction equipment and vehicles, which results in emissions of ROCs, NO_x, CO, PM_{10}, and $PM_{2.5}$.

Maximum daily NO_x emissions of 220.51 pounds per day would occur during the overlap of a number of construction activities, primarily result from the use of marine vessels for construction of seawater intake and simultaneous use of off-road equipment during construction of the desalination plant. However, the marine vessel emissions represent a worst-case scenario that includes the dispersed emissions from the travel of a tug boat and utility boat from the Port of Hueneme to the project site in addition to the emissions from these marine vessels for a full 8 hour work day, which would only occur for one day at the start of construction and one day at the end of construction. This conservative worst-case scenario also assumes an overlap of these maximum daily marine vessel emissions with the maximum daily construction emissions resulting from the use of off-road equipment for construction of the desalination plant. Because the worst-case daily emissions as shown in Table 4 would only occur for one day at the start of construction and one day at the end of construction, the majority of construction activities would result in lower criteria pollutant emissions than levels shown in Table 4.

As previously stated, the SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or daily construction emissions; however, construction activities would be short-term and temporary, would not require a substantial amount of off-road or in-water equipment to be operating simultaneously for an extended period of time. Additionally, construction activities would not result in extensive truck trips through the construction phase. The greatest amount of haul truck travel would occur during the demolition phase. As a result, the Reactivation Project air quality impacts in relation to daily construction activity would be considered less than significant.

The County of Santa Barbara is currently nonattainment for the state 8-hour O_3 standard and the state PM_{10} standard; however, as previously mentioned in Section 3.1, Thresholds of Significance, the SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or construction emissions. Absent adopted thresholds, the APCD uses 25 tons per year for ROC or NO_x as a guideline for determining the significance of construction impacts (SBCAPCD 2015a). Table 4 presents estimated total construction emissions that would occur during construction of the Reactivation Project in 2015 and 2016.

Table 4
Estimated Total Construction Emissions
(tons per year unmitigated)

Emissions Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Desalination Plant	0.16	1.50	1.19	0.00	0.13	0.09
Intake	0.19	2.18	0.60	0.00	0.09	0.09
Total	**0.35**	**3.68**	**1.79**	**0.00**	**0.22**	**0.18**

Notes: See Attachment A for detailed results.
These estimates do not reflect compliance with SBCAPCD standard dust control measures.

As shown in Table 4, the construction of the Reactivation Project would not exceed the SBCAPCD's general rule of 25 tons per year of ROC or NO_x used for determining significance of construction exhaust emissions. Therefore, impacts on air quality during construction would not contribute to an existing or projected air quality violation during construction and impacts would be less than significant.

3.2.2 Operational Emissions

Operation of the project would produce ROC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from vehicular traffic generated by employees, area sources, and energy use. Emissions associated with project-generated daily traffic were estimated based on information provided by the construction contractor. Approximately eight full-time employees would be on site during the Revitalization Project operations. CalEEMod was used to estimate emissions from mobile sources and project area sources. Area sources include gasoline-powered landscape maintenance equipment, consumer products, and architectural coatings for building maintenance.

Table 5, Estimated Maximum Daily Operational Emissions, presents the maximum unmitigated daily summer or winter emissions associated with operation of the Revitalization Project. Details of the emission calculations are provided in Attachment A.

Table 5
Estimated Maximum Daily Operational Emissions
(pounds per day, unmitigated)

Emission Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions	1.21	0.00	0.01	0.00	0.00	0.00
Vehicular (Mobile) Source Emissions	0.07	0.16	0.77	0.01	0.09	0.03
Energy Use Emissions	0.01	0.05	0.04	0.00	0.00	0.00
Combined Total Emissions	**1.29**	**0.21**	**0.82**	**0.01**	**0.09**	**0.03**

Table 5
Estimated Maximum Daily Operational Emissions
(pounds per day, unmitigated)

Emission Source	ROC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Vehicle Source Emissions Threshold	*25*	*25*	–	–	*N/A*	–
Vehicle Source Emissions Threshold Exceeded?	No	No			N/A	
Area[1] + Vehicle Source Emissions Threshold	*240*	*240*			*80*	
Area[1] + Vehicle Source Emissions Threshold Exceeded?	No	No			No	

Notes: See Attachment A detailed results.
Emissions presented are the maximum daily summer or winter emissions results from CalEEMod.
[1] Area source emissions include emissions from energy (e.g., natural gas for space heating) per SBCAPCD guidance.

As shown in Table 5, estimated operational criteria pollutant emissions would not exceed SBCAPCD thresholds for vehicle source emissions or combined area and vehicle source emissions. The Reactivation Project would not generate vehicular emissions that would exceed the vehicle source ROC or NO_x significance thresholds of 25 pounds per day. Additionally, the project's combined area source (including energy source) and vehicle source emissions would not exceed the ROC and NO_x significance thresholds of 240 pounds per day or the PM_{10} significance threshold of 80 pounds per day. Therefore, impacts from operational emissions would be less than significant.

3.2.3 Exposure of Sensitive Receptors To Substantial Pollutant Concentrations

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air

Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Some classifications of projects are more likely than others to emit toxic pollutants. Such projects involve commercial or industrial activities such as oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, rail yards, etc. (SBCAPCD 2015a).

Project construction would result in emissions of diesel particulate from heavy construction equipment and trucks accessing the site. Diesel particulate is characterized as a TAC by the State of California. The Office of Environmental Health Hazard Assessment (OEHHA) has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure, but has not identified health effects due to short-term exposure to diesel exhaust. Due to the temporary nature of project construction, the nearest sensitive receptor being located approximately 640 feet from the location where most of the diesel construction equipment will be operating, and because the project would not generate substantial diesel emissions from construction equipment or trucks, the project would not result in a significant health risk from TACs during construction.

As explained in Section 1.3, Project Description, operation of the project would include operation of the desalination plant that would be powered by electricity provided by the SCE grid. The project would not involve the use of stationary sources such as generators during operation that are typically associated with TAC emissions and would not result in substantially TAC or criteria pollutant emissions. Accordingly, the Reactivation Project would not result in a potential increase in adverse health effects associated with operation of the desalination plant. A health risk assessment (screening or formal) is not required for this Reactivation Project. Therefore, impacts related to potentially exposing sensitive receptors to substantial pollutant concentrations.

Additionally, the health risk public-notification thresholds adopted by the SBCAPCD Board is 10 excess cancer cases in a million for cancer risk and a hazard index of more than one (1.0) for non-cancer risk. The hazard index of more than 1.0 means that predicted levels of a toxic

pollutant are greater than the reference exposure level, which is considered the level below which adverse health effects are not expected. Examples of projects that emit toxic pollutants include oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, and rail yards (SBCAPCD 2015a). The Reactivation Project would not emit TACs and toxic contaminants are not anticipated to be present at the project site; as such, a formal health risk assessment will not be required for the Reactivation Project. Accordingly, the Reactivation Project is not anticipated to result in emissions that would exceed the SBCAPCD Board-adopted health risk notification thresholds.

3.2.4 Odors

The potential for the Reactivation Project to either cause or subject a considerable number of people to odors or other air quality nuisance problems is also analyzed. A public nuisance is defined by SBCAPCD Rule 303 as "such quantities of air contaminants or other material in violation of Section 41700 of the Health and Safety Code which may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or to the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." Although the SBCAPCD has not adopted quantitative thresholds of significance for odor impacts, the SBCAPCD recommends the development of an Odor Abatement Plan for projects that may generate nuisance odors that may affect a substantial number of people.

Construction Odor Impacts

Potential sources that may emit odors during construction activities include diesel equipment and gasoline fumes and solvents from the application of paint. Odors from these sources would be localized and generally confined to the project site. The closest sensitive receptors to the project are multifamily residences located approximately 640 feet to the north of the site. The release of potential odor-causing compounds would tend to be during the work day, when many residents would not be at home. Furthermore, the SBCAPCD rules restrict the ROC content (the source of odor-causing compounds) in paints. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, the Reactivation Project construction would not cause an odor nuisance, and impacts associated with odors during construction would be considered less than significant.

Operational Odor Impacts

Certain projects have the potential to cause significant odor impacts because of the nature of their operation and their location. Examples include fast food restaurants, bakeries, and coffee

roasting facilities (SBCAPCD 2015a). Other projects may be new developments (e.g., residential areas or sensitive receptors) that are located downwind of existing sources of odor. The Reactivation Project would not result in the creation of a new land use that is commonly associated with odors. Therefore, Desalination Facility operations would result in a less-than-significant odor impact.

3.2.5 Clean Air Plan Consistency

Consistency with land use and population forecasts in local and regional plans, including the Clean Air Plan, is required under CEQA for all projects. SBCAPCD further describes consistency with the Clean Air Plan for projects subject to these guidelines, which means that direct and indirect emissions associated with the project are accounted for in the Clean Air Plan's emissions growth assumptions, and the project is consistent with policies adopted in the Clean Air Plan. The 2013 Clean Air Plan was adopted by the District Board on March 19, 2015, and is the most recent applicable air quality plan. The 2013 Clean Air Plan is the 3-year update required by the state to show how the SBCAPCD plans to meet the state 8-hour O_3 standard (SBCAPCD and SBCAG 2015).

The Clean Air Plan relies primarily on the land use and population projections provided by the Santa Barbara County Association of Governments (SBCAG) and CARB on-road emissions forecast as a basis for vehicle emission forecasting. The 2013 Clean Air Plan used SBCAG's Regional Growth Forecast 2010–2040, adopted December 2012, to project population growth and associated air pollutant emissions for all of the Santa Barbara County incorporated and unincorporated areas.

The Reactivation Project involves reactivation and operation of an existing desalination plant. The Reactivation Project would not conflict with or propose to change existing land uses or applicable land use policies as designated in the City of Santa Barbara General Plan; therefore, the project was included in the SBCAG Regional Growth Forecast. As such, the project would not conflict with the applicable air quality plan, which currently is the 2013 Clean Air Plan, and the Reactivation Project would result in a less-than-significant impact.

3.2.6 Cumulative Impacts

Cumulative air quality impacts are the effect of long-term emissions of the Reactivation Project plus any existing emissions at the same location, as well as the effect of long-term emissions of reasonably foreseeable similar projects, on the projected regional air quality or localized air pollution in the County. As discussed in the SBCAPCD's *Scope and Content of Air Quality*

Sections in Environmental Documents, the cumulative contribution of project emissions to regional levels should be compared with existing programs and plans, including the most recent Clean Air Plan (SBCAPCD 2015a).

Due to the County's nonattainment status for the state 8-hour O_3 standard and its regional nature, if a project's emissions from traffic sources of either of the O_3 precursors, ROC or NO_x, exceed the long-term emission thresholds, then the project's cumulative impacts will be considered significant. For projects that do not have significant O_3 precursor emissions or localized pollutant impacts, if emissions have been taken into account in the most recent Clean Air Plan growth projections, regional cumulative impacts may be considered less than significant. When a project's emissions exceed the thresholds and are clearly not accounted for in the most recent Clean Air Plan growth projections, then the project is considered to have significant cumulative impacts that must be mitigated to a level of less than significant.

In analyzing cumulative impacts from the Reactivation Project, the assessment must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the County is designated as nonattainment for the NAAQS or CAAQS. The County is currently in attainment of NAAQS and is in attainment for all CAAQS with the exception of the state 8-hour O_3 standard and the state standards for PM_{10}. Construction and operation of the Reactivation Project would generate emissions of ROC and NO_x (O_3 precursors) and PM_{10} emissions; however, the Reactivation Project would not exceed SBCAPCD guidance for annual construction emissions or SBCAPCD thresholds for daily operational emissions. Since implementation of the Reactivation Project would result in less-than-significant short-term impacts to air quality associated with construction and less-than-significant long-term impacts associated with operation of the project, the Reactivation Project's contribution to the County's nonattainment status for state 8-hour O_3 and PM_{10} standards would be less than cumulatively considerable. As the project would not result in significant O_3 precursor emissions or PM_{10} emissions, and project-generated emissions have been taken into account in the SBCAPCD 2013 Clean Air Plan growth projections, cumulative impacts would be less than significant.

4.0 GREENHOUSE GAS ASSESSMENT

4.1 Thresholds of Significance

OPR Guidance

OPR's Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* states that "public agencies are

encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008).

Cumulative Nature of Climate Change

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008). This approach is consistent with that recommended by the California Natural Resource Agency, which noted in its Public Notice for the proposed CEQA amendments that the evidence before it indicates that in most cases, the impact of GHG emissions should be considered in the context of a cumulative impact, rather than a project-level impact (CNRA 2009a). Similarly, the Final Statement of Reasons for Regulatory Action on the CEQA Amendments confirm that an EIR or other environmental document must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009b).

CEQA Amendments

The California Natural Resources Agency adopted amendments to the CEQA Guidelines on December 30, 2009, that became effective on March 18, 2010. The CEQA Guidelines with respect to GHG emissions state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. Section 15064.4(a) further notes that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards." Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

City of Santa Barbara

The City of Santa Barbara adopted a Climate Action Plan with the purpose of reducing the rate of carbon emissions generated within the Santa Barbara community and planning for adaptation of Santa Barbara to climate changes. The City Council adopted both the Climate Action Plan and an EIR for the Climate Action Plan on September 19, 2012, which together meet the requirements of CEQA Guidelines Section 15183.5(b) for use as a GHG streamlining tool. The Climate Action Plan includes an emissions inventory of the City of Santa Barbara's government operations and a citywide GHG emissions estimate for the community of Santa Barbara. These GHG emission inventories were conducted for historical years, including 1990, as well as future estimates for 2020 and 2030 to demonstrate compliance with the goal of reducing communitywide GHG emissions to 1990 levels by 2020. Appendix C of the Climate Action Plan, Initial Guidelines for Individual Project Design and Permitting, provides initial general guidance for including GHG reduction and climate adaptation measures as presented in a chart form.

Santa Barbara County Air Pollution Control District

The SBAPCD provides suggested guidance for criteria air pollutant quantitative thresholds for purposes of conducting air quality assessments. That guidance is contained in the SBAPCD "Scope and Content for Air Quality Sections of Environmental Documents", but does not include quantitative thresholds for GHG impacts. For many years, the City had a practice of using the SBAPCD recommended thresholds for criteria air pollutants, and those thresholds are included in the City's CEQA Initial Study Guidelines. In 1979, as part of the City's Master Environmental Assessment, the City adopted the air quality thresholds of the predecessor agency of the

SBCAPCD for purposes of air quality analysis and attainment. (City MEA, Appendix O, Policy D.) Since that time, the City has utilized the SBCAPCD air quality thresholds when the City has not adopted its own thresholds.

Recently, the SBCAPCD adopted a quantitative CEQA threshold of significance for GHG emissions from stationary source projects. The guidance states that a proposed stationary source project would not have a significant GHG impact, if operation of the project would:

- Emit less than the screening significance level of 10,000 MT per year CO_2E, or
- Show compliance with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions (sources subject to the AB 32 Cap-and-Trade requirements pursuant to Title 17, Article 5 (California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms) would meet the criteria), or
- Show consistency with the AB 32 Scoping Plan GHG emission reduction goals by reducing project emissions 15.3% below Business As Usual (BAU).

The SBCAPCD defines stationary source projects as "equipment, processes and operations that require an SBCAPCD permit to operate" (SBCAPCD 2015b). The proposed project is not a stationary source and does not require a permit from the SBCAPCD. In addition, SBAPCD has not yet included the 10,000 MT per year CO_2E MT threshold in their Scope and Content Guidelines suggested for other agencies. Nevertheless, the SBCAPCD threshold does provide some guidance when considering whether the Reactivation Project's contribution to GHG emissions should be considered cumulatively considerable. Consistent with adopted City policy, the City utilized the SBCAPCD 10,000 MT per year CO_2E MT threshold in the course of its updated analysis of GHG emissions.

County of Santa Barbara

On May 19, 2015, the County of Santa Barbara amended the Santa Barbara County Environmental Thresholds and Guidelines Manual to specifically add a CEQA threshold to determine the significance of greenhouse gas (GHG) emissions from proposed industrial stationary sources subject to environmental review. The threshold applies to industrial stationary sources subject to discretionary approvals by the County, where the County is the CEQA lead agency. Under the new threshold, projects with GHG emissions higher than 1,000 MT per year CO_2E would be obligated to reduce emissions to below 1,000 MT per year CO_2E through onsite measures, offsite offsets, or both to be considered a less-than-significant cumulative impact.

The threshold applies to both direct and indirect emissions of greenhouse gases, including emissions associated with providing a project with electricity, including generation and transmission. The amended Thresholds and Guidelines Manual does not define an industrial stationary source, but as noted earlier, it specifically applies to uses that are subject to discretionary approvals by the County. The County does not have land use jurisdiction or any other discretionary authority over the Reactivation Project. Since the County's threshold does not legally apply to the Reactivation Project and the City does not have a practice of using County thresholds for air quality impacts, the City did not look to the County threshold when updating the analysis of GHG emissions.

Threshold of Significance Criteria

The following criteria are used in this analysis to determine the significance of a GHG and/or climate change impact. Potential impacts related to GHGs and global climate change would be significant if the Reactivation Project would:

- Generate greenhouse gas emissions above the screening significance level of 10,000 MT per year CO_2E.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.2 Impact Analysis

4.2.1 Generation of GHG Emissions

Construction Emissions

Construction of the Reactivation Project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. GHG emissions associated with temporary construction activity were quantified using CalEEMod. A detailed depiction of the construction schedule including information regarding phasing, equipment utilized during each phase, haul trucks, vendor trucks, and worker vehicles is included in Section 2.1, Project Construction Assumptions. On-site sources of GHG emissions include off-road equipment, and off-site sources include hauling and vendor trucks, worker vehicles, and marine vessels used for the desalination plant intake. Emissions from on-site and off-site sources are combined for the purposes of this analysis; a breakdown of emissions by source is provided in Attachment A.

Table 6, Estimated Annual Construction Greenhouse Gas Emissions, presents construction emissions for the Reactivation Project in 2015 and 2016 from on-site and off-site emission sources. Additionally, the construction GHG emissions are shown annualized over 25 years, which is assumed to be the life of the project per the San Luis Obispo Air Pollution Control District (SLOCAPCD) *CEQA Air Quality Handbook* (SLOCAPCD 2012).

Table 6
Estimated Annual Construction Greenhouse Gas Emissions

Year	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Desalination Plant	196.69	0.04	0.00	197.61
Intake	–	–	–	203.56
Total				**401.17**
Annualized Construction Emissions[1]	–	–	–	***16.04***

Notes: See Attachment A for detailed results.
MT CO_2 – metric tons carbon dioxide, MT CH_4 – metric tons methane, MT N_2O – metric tons nitrous oxide, MT CO_2E – metric tons carbon dioxide equivalent
[1] Construction emissions were annualized over 25 years per SLOCAPCD guidance for commercial (non-residential) projects.

As shown in Table 6, the estimated GHG emissions generated during project construction would be approximately 401.17 MT CO_2E total. Estimated project-generated construction emissions annualized over 25 years would be approximately 16.04 MT CO_2E per year. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis below.

Operational Emissions

Operation of the Revitalization Project would result in GHG emissions from electricity used for the desalination of 7,500 AFY of water, employee trips, energy use (natural gas and generation of electricity associated with worker facilities), solid waste generation, and generation of electricity associated with water supply and wastewater treatment. The estimated operational GHG emissions from these sources in 2016 (i.e., first full year of project operation) are shown in Table 7, Estimated Annual Operational Greenhouse Gas Emissions (2016).

Table 7
Estimated Annual Operational Greenhouse Gas Emissions (2016)

Emission Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Area	0.01	0.00	0.00	0.01
Energy	65.57	0.01	0.00	65.85
Mobile	16.56	0.01	0.00	16.58
Waste	8.31	0.49	0.00	18.63
Water	1.53	0.01	0.00	1.75
Electricity Use for Desalination	–	–	–	8,860.09
Total	–	–	–	***8,962.91***
Annualized Construction Emissions[1]	–	–	–	16.04
Operational and Annualized Construction Emissions	–	–	–	**8,978.95**

Notes: See Attachment A for detailed results. MT CO_2 – metric tons carbon dioxide, MT CH_4 – metric tons methane, MT N_2O – metric tons nitrous oxide, MT CO_2E – metric tons carbon dioxide equivalent
1 Construction emissions were annualized over 25 years per SLOAPCD guidance.

The estimated annual project-generated GHG emissions during operation would be approximately 8,978.95 MT CO_2E per year as a result of project operations. As previously described in Section 2.2, Project Operation Assumptions, SCE would provide electricity to the site. This analysis assumes that SCE has only procured 22% of renewable energy, which was the level of renewable energy procurement by SCE in 2013 and does not account for future procurement of renewable energy by SCE to meet the required 33% California Renewable Portfolio Standard.

The 1991 Final Environmental Impact Report (EIR) for the City of Santa Barbara's and Ionics, Incorporated's Temporary Emergency Desalination Project evaluated the potential impacts of the project's energy use, including addressing the potential GHG emissions that could be produced by the project's energy demand (City of Santa Barbara 1991). In this analysis the potential GHG emissions resulting from the project's energy use were addressed based on the SCE energy mix in 1990. Although it did not evaluate the significance of GHG emissions on the environment, the 1991 EIR indicated that a 10,000 AFY desalination plant requiring 8 megawatts (MW) of power could result in approximately 38,000 tons of CO_2 per year (approximately 34,473 MT CO_2 per year). As shown in Table 7, the estimated GHG emissions associated with operation of the Desalination Facility after reactivation would be substantially less than that previously considered in the 1991 EIR.

As discussed in Section 4.1, Thresholds of Significance, the SBCAPCD GHG emissions thresholds for stationary source projects would not apply to the Reactivation Project. However, for the purposes of discussion, the SBCAPCD stationary source threshold states that a project

would not have a cumulatively considerable contribution to climate change if it would show compliance with an approved GHG emission reduction plan or GHG mitigation program. Although the City has not adopted a quantitative CEQA significance threshold for GHG emissions, the City adopted a Climate Action Plan that is intended to address the issue of climate change for the City of Santa Barbara in accordance with AB 32, which calls for a reduction in GHG emissions to 1990 levels by 2020. The City Council adopted both the CAP and an EIR for the CAP on September 19, 2012, which together meet the requirements of CEQA Guidelines Section 15183.5(b) for use as a GHG streamlining tool.

As part of the City's Climate Action Plan, a GHG emissions inventory was conducted to determine what the citywide level of GHG emissions was in 1990 and to estimate what the citywide GHG emissions would be in 2020 with implementation of the Climate Action Plan and other statewide measures. The City's Climate Action Plan states that the citywide GHG emission levels in 1990 were an estimated 724,389 MT CO_2 per year and that the estimated citywide GHG emissions in 2020 with implementation of the Climate Action Plan and other statewide measures would be an estimated 543,185 MT CO_2 per year. With the addition of the Reactivation Project's estimated annual GHG emissions (8,978.95 MT CO_2E per year), the estimated citywide GHG emissions in 2020 (with implementation of the Climate Action Plan and other statewide measures) would be approximately 552,164.4 MT CO_2 per year. Annual citywide emissions of 552,164.4 MT CO_2 per year would still be substantially less than the goal of AB 32 to reduce the citywide GHG emission levels in 2020 to 1990 levels, which were approximately 724,389 MT CO_2 per year. Accordingly, the Reactivation Project would not conflict with the target GHG emission levels in the Climate Action Plan that are required to meet the goal of AB 32. In addition, when compared against the SBCAPCD 10,000 MT per year CO_2E MT screening threshold for industrial stationary sources, the GHG emissions anticipated from the Reactivation Project are below the threshold. Based on these considerations, impacts associated with the potential for the project to generate GHG emissions, either directly or indirectly, would be less than significant.

4.2.2 Conflict with an Applicable Plan, Policy, or Regulation Adopted to Reduce GHG Emissions

As previously described in Section 4.2.1, the Reactivation Project would not obstruct the target established in the City's Climate Action Plan of achieving 1990 citywide GHG emission levels by 2020 (approximately 724,389 MT CO_2 per year). In addition to the quantitative emissions inventory in the City's Climate Action Plan, the CAP provides initial general guidance for including GHG reduction and climate adaptation measures. The list, included as Appendix C, Initial Guidelines for Individual Project Design and Permitting, includes measures for carbon

reduction and climate adaptation meant for a variety of development projects that are either required or encouraged. The Reactivation Project would comply with all required and applicable Climate Action Plan measures. As such, the Reactivation Project would not conflict with the City's Climate Action Plan and impacts would be less than significant.

5.0 CONCLUSION

Emissions generated during construction of the Reactivation Project would not exceed the SBCAPCD's general rule of 25 tons per year of ROC or NO_x used for determining significance of construction exhaust emissions. Operation of the Reactivation Project would also not result in criteria air pollutant emissions (ROC, NO_x, or PM_{10}) that would exceed SBCAPCD thresholds. Potential impacts related to TACs, siting health risk, odors, and consistency with the Clean Air Plan would be less than significant. Potential cumulative air quality impacts would also be less than cumulatively considerable.

Estimated total GHG emissions generated during construction would be 401.17 MT CO_2E or 16.04 MT CO_2E annualized over 25 years. Operational GHG emissions from the Reactivation Project including electricity for desalination, worker vehicle trips, area source, energy sources, waste generation, and water use associated with worker facilities would result in approximately 8,962.91 MT CO_2E per year. The operational GHG emissions in addition to the annualized construction emissions would result in approximately 8,979.4 MT CO_2E per year, which when added to the estimated citywide GHG emissions in 2020 with implementation of the Climate Action Plan and other statewide measures would be well below the Climate Action Plan target of reducing citywide GHG emissions to 1990 levels (724,389 MT CO_2 per year) consistent with the goal of AB 32. Furthermore, the Reactivation Project would not conflict with any applicable required climate reduction or adaptation measures established in Appendix C, Initial Guidelines for Individual Project Design and Permitting, of the City's Climate Action Plan. In addition, when compared against the SBCAPCD 10,000 MT per year CO_2E MT screening threshold for industrial stationary sources, the GHG emissions anticipated from the Reactivation Project are below the threshold. Therefore, the Reactivation Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, including the Climate Action Plan. Accordingly, potential cumulative GHG impacts would be less than significant.

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ATTACHMENT A

Air Quality and Greenhouse Gas Calculations

Santa Barbara Desalination Revitalization Project Air Quality and GHG Emission Summary

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2E
Construction (lbs/day)							
Desalination Plant	3.70	35.05	26.84	0.04	2.81	2.1	3,835.97
Intake	15.95	185.46	50.71	0.08	6.66	6.52	163.28
Marine Vessels	15.86	185.25	49.76	0.08	6.65	6.52	7.38
Land Work	0.09	0.20	0.95	0.00	0.00	0.00	155.90
Total	**19.65**	**220.51**	**77.55**	**0.12**	**9.47**	**8.62**	**3999.25**
Operation (lbs/day)							
Area	1.21	0	0.01	0	0	0	0.01
Mobile	0.07	0.16	0.77	0.01	0.09	0.03	100.39
Energy	0.01	0.05	0.04	0	0	0	58.34
Electricity	-	-	-	-	-	-	-
Total	**1.29**	**0.21**	**0.82**	**0.01**	**0.09**	**0.03**	**158.74**

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	MT/year CO_2E
Construction (tons/year)							
Desalination Plant	0.16	1.5	1.19	0	0.13	0.09	197.61
Intake	0.19	2.18	0.60	0.00	0.09	0.09	203.56
Marine Vessels	0.19	2.17	0.58	0.00	0.09	0.09	201.22
Land Work	0.00	0.00	0.01	0.00	0.00	0.00	2.34
Total	**0.35**	**3.68**	**1.79**	**0.00**	**0.22**	**0.18**	**401.17**
Operation (tons/year)							
Area	0.22	0	0	0	0	0	0
Mobile	0.01	0.03	0.13	0.01	0.02	0.01	16.58
Energy	0	0.01	0.01	0	0	0	65.85
Waste	0	0	0	0	0	0	18.63
Water	0	0	0	0	0	0	1.75
Electricity							8860.09
Total	**0.23**	**0.04**	**0.14**	**0.01**	**0.02**	**0.01**	**8962.90**

Santa Barbara Desalination Project - Construction

Santa Barbara-South of Santa Ynez Range County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	15.00	1000sqft	2.50	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.7026	35.0459	26.8395	0.0379	0.7278	2.0772	2.8050	0.1902	1.9125	2.0965	0.0000	3,816.1273	3,816.1273	0.9447	0.0000	3,835.9659
2016	1.1762	11.1683	7.4948	0.0121	0.4044	0.5583	0.9627	0.1075	0.5136	0.6211	0.0000	1,168.2109	1,168.2109	0.2466	0.0000	1,173.3901
Total	**4.8788**	**46.2142**	**34.3343**	**0.0500**	**1.1322**	**2.6355**	**3.7677**	**0.2977**	**2.4261**	**2.7176**	**0.0000**	**4,984.3381**	**4,984.3381**	**1.1913**	**0.0000**	**5,009.3560**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.7026	35.0459	26.8395	0.0379	0.7161	2.0772	2.7607	0.1893	1.9125	2.0901	0.0000	3,816.1273	3,816.1273	0.9447	0.0000	3,835.9659
2016	1.1762	11.1683	7.4948	0.0121	0.4044	0.5583	0.9627	0.1075	0.5136	0.6211	0.0000	1,168.2109	1,168.2109	0.2466	0.0000	1,173.3901
Total	**4.8788**	**46.2142**	**34.3343**	**0.0500**	**1.1206**	**2.6355**	**3.7234**	**0.2968**	**2.4261**	**2.7112**	**0.0000**	**4,984.3381**	**4,984.3381**	**1.1913**	**0.0000**	**5,009.3560**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**1.03**	**0.00**	**1.18**	**0.30**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	9/30/2015	5	66	
2	Site Civil Work	Grading	8/1/2015	12/31/2015	5	109	
3	Process Mech/Elec Offsite Crane	Building Construction	12/1/2015	12/1/2015	5	1	1 day of crane ops
4	Process Mechanical/Electrical Offsite	Building Construction	12/2/2015	1/31/2016	5	43	modular equip construction
5	Process Mechanical/Electrical Onsite	Building Construction	2/1/2016	3/31/2016	5	44	equip delivery and install
6	Commissioning	Building Construction	4/1/2016	8/31/2016	5	109	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	8.00	226	0.29
Demolition	Forklifts	1	8.00	89	0.20
Demolition	Plate Compactors	2	8.00	8	0.43
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Civil Work	Excavators	1	8.00	162	0.38
Site Civil Work	Forklifts	1	8.00	89	0.20
Site Civil Work	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Process Mech/Elec Offsite Crane	Cranes	1	8.00	226	0.29
Process Mechanical/Electrical Offsite	Forklifts	1	8.00	89	0.20
Process Mechanical/Electrical Onsite	Cranes	1	8.00	226	0.29
Process Mechanical/Electrical Onsite	Forklifts	1	8.00	89	0.20
Demolition	Excavators	1	8.00	162	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	32.00	6.00	20.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Civil Work	4	32.00	2.00	63.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mech/Elec Offsite Crane	1	42.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mechanical/Electrical Offsite	1	42.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mechanical/Electrical Onsite	2	42.00	2.00	32.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Commissioning	0	32.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0659	0.0000	0.0659	9.9700e-003	0.0000	9.9700e-003			0.0000			0.0000
Off-Road	1.8428	19.7062	10.6457	0.0166		1.1058	1.1058		1.0189	1.0189		1,707.4994	1,707.4994	0.4963		1,717.9224
Total	**1.8428**	**19.7062**	**10.6457**	**0.0166**	**0.0659**	**1.1058**	**1.1716**	**9.9700e-003**	**1.0189**	**1.0288**		**1,707.4994**	**1,707.4994**	**0.4963**		**1,717.9224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.1100e-003	0.1104	0.1186	2.2000e-004	5.2400e-003	1.6300e-003	6.8700e-003	1.4300e-003	1.4900e-003	2.9300e-003		22.6301	22.6301	1.9000e-004		22.6341
Vendor	0.0874	0.5078	1.1642	9.3000e-004	0.0249	7.7300e-003	0.0327	7.1000e-003	7.1000e-003	0.0142		92.3974	92.3974	9.2000e-004		92.4167
Worker	0.1691	0.2701	2.3654	3.1900e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		274.3705	274.3705	0.0187		274.7623
Total	**0.2656**	**0.8883**	**3.6482**	**4.3400e-003**	**0.3295**	**0.0118**	**0.3413**	**0.0879**	**0.0108**	**0.0988**		**389.3980**	**389.3980**	**0.0198**		**389.8131**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0296	0.0000	0.0296	4.4900e-003	0.0000	4.4900e-003			0.0000			0.0000
Off-Road	1.8428	19.7062	10.6457	0.0166		1.1058	1.1058		1.0189	1.0189	0.0000	1,707.4994	1,707.4994	0.4963		1,717.9223
Total	**1.8428**	**19.7062**	**10.6457**	**0.0166**	**0.0296**	**1.1058**	**1.1354**	**4.4900e-003**	**1.0189**	**1.0234**	**0.0000**	**1,707.4994**	**1,707.4994**	**0.4963**		**1,717.9223**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.1100e-003	0.1104	0.1186	2.2000e-004	5.2400e-003	1.6300e-003	6.8700e-003	1.4300e-003	1.4900e-003	2.9300e-003		22.6301	22.6301	1.9000e-004		22.6341
Vendor	0.0874	0.5078	1.1642	9.3000e-004	0.0249	7.7300e-003	0.0327	7.1000e-003	7.1000e-003	0.0142		92.3974	92.3974	9.2000e-004		92.4167
Worker	0.1691	0.2701	2.3654	3.1900e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		274.3705	274.3705	0.0187		274.7623
Total	**0.2656**	**0.8883**	**3.6482**	**4.3400e-003**	**0.3295**	**0.0118**	**0.3413**	**0.0879**	**0.0108**	**0.0988**		**389.3980**	**389.3980**	**0.0198**		**389.8131**

3.3 Site Civil Work - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0148	0.0000	0.0148	1.6300e-003	0.0000	1.6300e-003			0.0000			0.0000
Off-Road	1.3786	13.8014	9.5661	0.0131		0.9515	0.9515		0.8754	0.8754		1,370.8971	1,370.8971	0.4093		1,379.4918
Total	**1.3786**	**13.8014**	**9.5661**	**0.0131**	**0.0148**	**0.9515**	**0.9663**	**1.6300e-003**	**0.8754**	**0.8770**		**1,370.8971**	**1,370.8971**	**0.4093**		**1,379.4918**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0174	0.2106	0.2261	4.3000e-004	0.0100	3.1000e-003	0.0131	2.7300e-003	2.8500e-003	5.5800e-003		43.1633	43.1633	3.6000e-004		43.1708
Vendor	0.0291	0.1693	0.3881	3.1000e-004	8.3100e-003	2.5800e-003	0.0109	2.3700e-003	2.3700e-003	4.7300e-003		30.7992	30.7992	3.1000e-004		30.8056
Worker	0.1691	0.2701	2.3654	3.1900e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		274.3705	274.3705	0.0187		274.7623
Total	**0.2156**	**0.6500**	**2.9796**	**3.9300e-003**	**0.3177**	**8.1400e-003**	**0.3258**	**0.0845**	**7.4500e-003**	**0.0919**		**348.3329**	**348.3329**	**0.0193**		**348.7387**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6500e-003	0.0000	6.6500e-003	7.3000e-004	0.0000	7.3000e-004			0.0000			0.0000
Off-Road	1.3786	13.8014	9.5661	0.0131		0.9515	0.9515		0.8754	0.8754	0.0000	1,370.8971	1,370.8971	0.4093		1,379.4918
Total	**1.3786**	**13.8014**	**9.5661**	**0.0131**	**6.6500e-003**	**0.9515**	**0.9581**	**7.3000e-004**	**0.8754**	**0.8761**	**0.0000**	**1,370.8971**	**1,370.8971**	**0.4093**		**1,379.4918**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0174	0.2106	0.2261	4.3000e-004	0.0100	3.1000e-003	0.0131	2.7300e-003	2.8500e-003	5.5800e-003		43.1633	43.1633	3.6000e-004		43.1708
Vendor	0.0291	0.1693	0.3881	3.1000e-004	8.3100e-003	2.5800e-003	0.0109	2.3700e-003	2.3700e-003	4.7300e-003		30.7992	30.7992	3.1000e-004		30.8056
Worker	0.1691	0.2701	2.3654	3.1900e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		274.3705	274.3705	0.0187		274.7623
Total	**0.2156**	**0.6500**	**2.9796**	**3.9300e-003**	**0.3177**	**8.1400e-003**	**0.3258**	**0.0845**	**7.4500e-003**	**0.0919**		**348.3329**	**348.3329**	**0.0193**		**348.7387**

3.4 Process Mech/Elec Offsite Crane - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7423	8.8100	3.0671	5.6400e-003		0.4022	0.4022		0.3700	0.3700		592.3534	592.3534	0.1768		596.0671
Total	**0.7423**	**8.8100**	**3.0671**	**5.6400e-003**		**0.4022**	**0.4022**		**0.3700**	**0.3700**		**592.3534**	**592.3534**	**0.1768**		**596.0671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0291	0.1693	0.3881	3.1000e-004	8.3100e-003	2.5800e-003	0.0109	2.3700e-003	2.3700e-003	4.7300e-003		30.7992	30.7992	3.1000e-004		30.8056
Worker	0.2167	0.3461	3.0307	4.0900e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		351.5371	351.5371	0.0239		352.0392
Total	**0.2458**	**0.5154**	**3.4187**	**4.4000e-003**	**0.3918**	**5.7400e-003**	**0.3976**	**0.1041**	**5.2200e-003**	**0.1093**		**382.3363**	**382.3363**	**0.0242**		**382.8448**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7423	8.8100	3.0671	5.6400e-003		0.4022	0.4022		0.3700	0.3700	0.0000	592.3534	592.3534	0.1768		596.0671
Total	**0.7423**	**8.8100**	**3.0671**	**5.6400e-003**		**0.4022**	**0.4022**		**0.3700**	**0.3700**	**0.0000**	**592.3534**	**592.3534**	**0.1768**		**596.0671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0291	0.1693	0.3881	3.1000e-004	8.3100e-003	2.5800e-003	0.0109	2.3700e-003	2.3700e-003	4.7300e-003		30.7992	30.7992	3.1000e-004		30.8056
Worker	0.2167	0.3461	3.0307	4.0900e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		351.5371	351.5371	0.0239		352.0392
Total	**0.2458**	**0.5154**	**3.4187**	**4.4000e-003**	**0.3918**	**5.7400e-003**	**0.3976**	**0.1041**	**5.2200e-003**	**0.1093**		**382.3363**	**382.3363**	**0.0242**		**382.8448**

3.5 Process Mechanical/Electrical Offsite - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2412	2.0723	1.2757	1.5200e-003		0.1741	0.1741		0.1602	0.1602		160.3667	160.3667	0.0479		161.3721
Total	**0.2412**	**2.0723**	**1.2757**	**1.5200e-003**		**0.1741**	**0.1741**		**0.1602**	**0.1602**		**160.3667**	**160.3667**	**0.0479**		**161.3721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0291	0.1693	0.3881	3.1000e-004	8.3100e-003	2.5800e-003	0.0109	2.3700e-003	2.3700e-003	4.7300e-003		30.7992	30.7992	3.1000e-004		30.8056
Worker	0.2167	0.3461	3.0307	4.0900e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		351.5371	351.5371	0.0239		352.0392
Total	**0.2458**	**0.5154**	**3.4187**	**4.4000e-003**	**0.3918**	**5.7400e-003**	**0.3976**	**0.1041**	**5.2200e-003**	**0.1093**		**382.3363**	**382.3363**	**0.0242**		**382.8448**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2412	2.0723	1.2757	1.5200e-003		0.1741	0.1741		0.1602	0.1602	0.0000	160.3667	160.3667	0.0479		161.3721
Total	**0.2412**	**2.0723**	**1.2757**	**1.5200e-003**		**0.1741**	**0.1741**		**0.1602**	**0.1602**	**0.0000**	**160.3667**	**160.3667**	**0.0479**		**161.3721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0291	0.1693	0.3881	3.1000e-004	8.3100e-003	2.5800e-003	0.0109	2.3700e-003	2.3700e-003	4.7300e-003		30.7992	30.7992	3.1000e-004		30.8056
Worker	0.2167	0.3461	3.0307	4.0900e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		351.5371	351.5371	0.0239		352.0392
Total	**0.2458**	**0.5154**	**3.4187**	**4.4000e-003**	**0.3918**	**5.7400e-003**	**0.3976**	**0.1041**	**5.2200e-003**	**0.1093**		**382.3363**	**382.3363**	**0.0242**		**382.8448**

3.5 Process Mechanical/Electrical Offsite - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2269	1.9533	1.2630	1.5300e-003		0.1633	0.1633		0.1503	0.1503		158.7220	158.7220	0.0479		159.7274
Total	**0.2269**	**1.9533**	**1.2630**	**1.5300e-003**		**0.1633**	**0.1633**		**0.1503**	**0.1503**		**158.7220**	**158.7220**	**0.0479**		**159.7274**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0253	0.1494	0.3595	3.1000e-004	8.3100e-003	2.0400e-003	0.0104	2.3700e-003	1.8700e-003	4.2400e-003		30.4673	30.4673	2.7000e-004		30.4729
Worker	0.1854	0.3037	2.6254	4.0800e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		339.0390	339.0390	0.0213		339.4858
Total	**0.2106**	**0.4531**	**2.9849**	**4.3900e-003**	**0.3918**	**4.9500e-003**	**0.3968**	**0.1041**	**4.5100e-003**	**0.1086**		**369.5064**	**369.5064**	**0.0216**		**369.9587**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2269	1.9533	1.2630	1.5300e-003		0.1633	0.1633		0.1503	0.1503	0.0000	158.7220	158.7220	0.0479		159.7274
Total	**0.2269**	**1.9533**	**1.2630**	**1.5300e-003**		**0.1633**	**0.1633**		**0.1503**	**0.1503**	**0.0000**	**158.7220**	**158.7220**	**0.0479**		**159.7274**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0253	0.1494	0.3595	3.1000e-004	8.3100e-003	2.0400e-003	0.0104	2.3700e-003	1.8700e-003	4.2400e-003		30.4673	30.4673	2.7000e-004		30.4729
Worker	0.1854	0.3037	2.6254	4.0800e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		339.0390	339.0390	0.0213		339.4858
Total	**0.2106**	**0.4531**	**2.9849**	**4.3900e-003**	**0.3918**	**4.9500e-003**	**0.3968**	**0.1041**	**4.5100e-003**	**0.1086**		**369.5064**	**369.5064**	**0.0216**		**369.9587**

3.6 Process Mechanical/Electrical Onsite - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9470	10.4848	4.2478	7.1600e-003		0.5505	0.5505		0.5064	0.5064		744.9567	744.9567	0.2247		749.6755
Total	**0.9470**	**10.4848**	**4.2478**	**7.1600e-003**		**0.5505**	**0.5505**		**0.5064**	**0.5064**		**744.9567**	**744.9567**	**0.2247**		**749.6755**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0186	0.2304	0.2621	5.4000e-004	0.0126	2.8700e-003	0.0155	3.4400e-003	2.6400e-003	6.0800e-003		53.7478	53.7478	3.8000e-004		53.7558
Vendor	0.0253	0.1494	0.3595	3.1000e-004	8.3100e-003	2.0400e-003	0.0104	2.3700e-003	1.8700e-003	4.2400e-003		30.4673	30.4673	2.7000e-004		30.4729
Worker	0.1854	0.3037	2.6254	4.0800e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		339.0390	339.0390	0.0213		339.4858
Total	**0.2293**	**0.6835**	**3.2469**	**4.9300e-003**	**0.4044**	**7.8200e-003**	**0.4122**	**0.1075**	**7.1500e-003**	**0.1147**		**423.2542**	**423.2542**	**0.0219**		**423.7146**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9470	10.4848	4.2478	7.1600e-003		0.5505	0.5505		0.5064	0.5064	0.0000	744.9567	744.9567	0.2247		749.6755
Total	**0.9470**	**10.4848**	**4.2478**	**7.1600e-003**		**0.5505**	**0.5505**		**0.5064**	**0.5064**	**0.0000**	**744.9567**	**744.9567**	**0.2247**		**749.6755**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0186	0.2304	0.2621	5.4000e-004	0.0126	2.8700e-003	0.0155	3.4400e-003	2.6400e-003	6.0800e-003		53.7478	53.7478	3.8000e-004		53.7558
Vendor	0.0253	0.1494	0.3595	3.1000e-004	8.3100e-003	2.0400e-003	0.0104	2.3700e-003	1.8700e-003	4.2400e-003		30.4673	30.4673	2.7000e-004		30.4729
Worker	0.1854	0.3037	2.6254	4.0800e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		339.0390	339.0390	0.0213		339.4858
Total	**0.2293**	**0.6835**	**3.2469**	**4.9300e-003**	**0.4044**	**7.8200e-003**	**0.4122**	**0.1075**	**7.1500e-003**	**0.1147**		**423.2542**	**423.2542**	**0.0219**		**423.7146**

3.7 Commissioning - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0253	0.1494	0.3595	3.1000e-004	8.3100e-003	2.0400e-003	0.0104	2.3700e-003	1.8700e-003	4.2400e-003		30.4673	30.4673	2.7000e-004		30.4729
Worker	0.1447	0.2371	2.0491	3.1800e-003	0.2993	2.2700e-003	0.3016	0.0794	2.0600e-003	0.0815		264.6158	264.6158	0.0166		264.9645
Total	**0.1699**	**0.3864**	**2.4086**	**3.4900e-003**	**0.3077**	**4.3100e-003**	**0.3120**	**0.0818**	**3.9300e-003**	**0.0857**		**295.0832**	**295.0832**	**0.0169**		**295.4375**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0253	0.1494	0.3595	3.1000e-004	8.3100e-003	2.0400e-003	0.0104	2.3700e-003	1.8700e-003	4.2400e-003		30.4673	30.4673	2.7000e-004		30.4729
Worker	0.1447	0.2371	2.0491	3.1800e-003	0.2993	2.2700e-003	0.3016	0.0794	2.0600e-003	0.0815		264.6158	264.6158	0.0166		264.9645
Total	**0.1699**	**0.3864**	**2.4086**	**3.4900e-003**	**0.3077**	**4.3100e-003**	**0.3120**	**0.0818**	**3.9300e-003**	**0.0857**		**295.0832**	**295.0832**	**0.0169**		**295.4375**

Santa Barbara Desalination Project - Construction

Santa Barbara-South of Santa Ynez Range County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	15.00	1000sqft	2.50	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.6446	34.9611	26.0498	0.0380	0.7278	2.0770	2.8048	0.1902	1.9123	2.0963	0.0000	3,830.6704	3,830.6704	0.9447	0.0000	3,850.5081
2016	1.1524	11.1228	7.1930	0.0122	0.4044	0.5582	0.9627	0.1075	0.5135	0.6211	0.0000	1,176.7088	1,176.7088	0.2466	0.0000	1,181.8878
Total	**4.7970**	**46.0839**	**33.2429**	**0.0502**	**1.1322**	**2.6352**	**3.7674**	**0.2977**	**2.4258**	**2.7174**	**0.0000**	**5,007.3793**	**5,007.3793**	**1.1913**	**0.0000**	**5,032.3958**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.6446	34.9611	26.0498	0.0380	0.7161	2.0770	2.7604	0.1893	1.9123	2.0899	0.0000	3,830.6704	3,830.6704	0.9447	0.0000	3,850.5081
2016	1.1524	11.1228	7.1930	0.0122	0.4044	0.5582	0.9627	0.1075	0.5135	0.6211	0.0000	1,176.7088	1,176.7088	0.2466	0.0000	1,181.8878
Total	**4.7970**	**46.0839**	**33.2429**	**0.0502**	**1.1206**	**2.6352**	**3.7231**	**0.2968**	**2.4258**	**2.7110**	**0.0000**	**5,007.3793**	**5,007.3793**	**1.1913**	**0.0000**	**5,032.3958**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**1.03**	**0.00**	**1.18**	**0.30**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	9/30/2015	5	66	
2	Site Civil Work	Grading	8/1/2015	12/31/2015	5	109	
3	Process Mech/Elec Offsite Crane	Building Construction	12/1/2015	12/1/2015	5	1	1 day of crane ops
4	Process Mechanical/Electrical Offsite	Building Construction	12/2/2015	1/31/2016	5	43	modular equip construction
5	Process Mechanical/Electrical Onsite	Building Construction	2/1/2016	3/31/2016	5	44	equip delivery and install
6	Commissioning	Building Construction	4/1/2016	8/31/2016	5	109	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	8.00	226	0.29
Demolition	Forklifts	1	8.00	89	0.20
Demolition	Plate Compactors	2	8.00	8	0.43
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Civil Work	Excavators	1	8.00	162	0.38
Site Civil Work	Forklifts	1	8.00	89	0.20
Site Civil Work	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Process Mech/Elec Offsite Crane	Cranes	1	8.00	226	0.29
Process Mechanical/Electrical Offsite	Forklifts	1	8.00	89	0.20
Process Mechanical/Electrical Onsite	Cranes	1	8.00	226	0.29
Process Mechanical/Electrical Onsite	Forklifts	1	8.00	89	0.20
Demolition	Excavators	1	8.00	162	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	32.00	6.00	20.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Civil Work	4	32.00	2.00	63.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mech/Elec Offsite Crane	1	42.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mechanical/Electrical Offsite	1	42.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mechanical/Electrical Onsite	2	42.00	2.00	32.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Commissioning	0	32.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0659	0.0000	0.0659	9.9700e-003	0.0000	9.9700e-003			0.0000			0.0000
Off-Road	1.8428	19.7062	10.6457	0.0166		1.1058	1.1058		1.0189	1.0189		1,707.4994	1,707.4994	0.4963		1,717.9224
Total	**1.8428**	**19.7062**	**10.6457**	**0.0166**	**0.0659**	**1.1058**	**1.1716**	**9.9700e-003**	**1.0189**	**1.0288**		**1,707.4994**	**1,707.4994**	**0.4963**		**1,717.9224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.8400e-003	0.1077	0.0941	2.2000e-004	5.2400e-003	1.6200e-003	6.8600e-003	1.4300e-003	1.4900e-003	2.9200e-003		22.6840	22.6840	1.9000e-004		22.6879
Vendor	0.0700	0.5001	0.8374	9.3000e-004	0.0249	7.5600e-003	0.0325	7.1000e-003	6.9500e-003	0.0141		93.4973	93.4973	8.9000e-004		93.5160
Worker	0.1536	0.2368	2.2240	3.2600e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		280.8304	280.8304	0.0187		281.2223
Total	**0.2314**	**0.8446**	**3.1555**	**4.4100e-003**	**0.3295**	**0.0116**	**0.3412**	**0.0879**	**0.0107**	**0.0986**		**397.0117**	**397.0117**	**0.0197**		**397.4262**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0296	0.0000	0.0296	4.4900e-003	0.0000	4.4900e-003			0.0000			0.0000
Off-Road	1.8428	19.7062	10.6457	0.0166		1.1058	1.1058		1.0189	1.0189	0.0000	1,707.4994	1,707.4994	0.4963		1,717.9223
Total	**1.8428**	**19.7062**	**10.6457**	**0.0166**	**0.0296**	**1.1058**	**1.1354**	**4.4900e-003**	**1.0189**	**1.0234**	**0.0000**	**1,707.4994**	**1,707.4994**	**0.4963**		**1,717.9223**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.8400e-003	0.1077	0.0941	2.2000e-004	5.2400e-003	1.6200e-003	6.8600e-003	1.4300e-003	1.4900e-003	2.9200e-003		22.6840	22.6840	1.9000e-004		22.6879
Vendor	0.0700	0.5001	0.8374	9.3000e-004	0.0249	7.5600e-003	0.0325	7.1000e-003	6.9500e-003	0.0141		93.4973	93.4973	8.9000e-004		93.5160
Worker	0.1536	0.2368	2.2240	3.2600e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		280.8304	280.8304	0.0187		281.2223
Total	**0.2314**	**0.8446**	**3.1555**	**4.4100e-003**	**0.3295**	**0.0116**	**0.3412**	**0.0879**	**0.0107**	**0.0986**		**397.0117**	**397.0117**	**0.0197**		**397.4262**

3.3 Site Civil Work - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0148	0.0000	0.0148	1.6300e-003	0.0000	1.6300e-003			0.0000			0.0000
Off-Road	1.3786	13.8014	9.5661	0.0131		0.9515	0.9515		0.8754	0.8754		1,370.8971	1,370.8971	0.4093		1,379.4918
Total	**1.3786**	**13.8014**	**9.5661**	**0.0131**	**0.0148**	**0.9515**	**0.9663**	**1.6300e-003**	**0.8754**	**0.8770**		**1,370.8971**	**1,370.8971**	**0.4093**		**1,379.4918**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0150	0.2055	0.1795	4.3000e-004	0.0100	3.0800e-003	0.0131	2.7300e-003	2.8400e-003	5.5700e-003		43.2660	43.2660	3.6000e-004		43.2735
Vendor	0.0233	0.1667	0.2791	3.1000e-004	8.3100e-003	2.5200e-003	0.0108	2.3700e-003	2.3200e-003	4.6800e-003		31.1658	31.1658	3.0000e-004		31.1720
Worker	0.1536	0.2368	2.2240	3.2600e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		280.8304	280.8304	0.0187		281.2223
Total	**0.1919**	**0.6089**	**2.6826**	**4.0000e-003**	**0.3177**	**8.0600e-003**	**0.3257**	**0.0845**	**7.3900e-003**	**0.0919**		**355.2622**	**355.2622**	**0.0193**		**355.6678**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6500e-003	0.0000	6.6500e-003	7.3000e-004	0.0000	7.3000e-004			0.0000			0.0000
Off-Road	1.3786	13.8014	9.5661	0.0131		0.9515	0.9515		0.8754	0.8754	0.0000	1,370.8971	1,370.8971	0.4093		1,379.4918
Total	**1.3786**	**13.8014**	**9.5661**	**0.0131**	**6.6500e-003**	**0.9515**	**0.9581**	**7.3000e-004**	**0.8754**	**0.8761**	**0.0000**	**1,370.8971**	**1,370.8971**	**0.4093**		**1,379.4918**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0150	0.2055	0.1795	4.3000e-004	0.0100	3.0800e-003	0.0131	2.7300e-003	2.8400e-003	5.5700e-003		43.2660	43.2660	3.6000e-004		43.2735
Vendor	0.0233	0.1667	0.2791	3.1000e-004	8.3100e-003	2.5200e-003	0.0108	2.3700e-003	2.3200e-003	4.6800e-003		31.1658	31.1658	3.0000e-004		31.1720
Worker	0.1536	0.2368	2.2240	3.2600e-003	0.2993	2.4600e-003	0.3018	0.0794	2.2300e-003	0.0816		280.8304	280.8304	0.0187		281.2223
Total	**0.1919**	**0.6089**	**2.6826**	**4.0000e-003**	**0.3177**	**8.0600e-003**	**0.3257**	**0.0845**	**7.3900e-003**	**0.0919**		**355.2622**	**355.2622**	**0.0193**		**355.6678**

3.4 Process Mech/Elec Offsite Crane - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7423	8.8100	3.0671	5.6400e-003		0.4022	0.4022		0.3700	0.3700		592.3534	592.3534	0.1768		596.0671
Total	**0.7423**	**8.8100**	**3.0671**	**5.6400e-003**		**0.4022**	**0.4022**		**0.3700**	**0.3700**		**592.3534**	**592.3534**	**0.1768**		**596.0671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0233	0.1667	0.2791	3.1000e-004	8.3100e-003	2.5200e-003	0.0108	2.3700e-003	2.3200e-003	4.6800e-003		31.1658	31.1658	3.0000e-004		31.1720
Worker	0.1968	0.3034	2.8495	4.1800e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		359.8140	359.8140	0.0239		360.3161
Total	**0.2201**	**0.4700**	**3.1286**	**4.4900e-003**	**0.3918**	**5.6800e-003**	**0.3975**	**0.1041**	**5.1700e-003**	**0.1093**		**390.9798**	**390.9798**	**0.0242**		**391.4881**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7423	8.8100	3.0671	5.6400e-003		0.4022	0.4022		0.3700	0.3700	0.0000	592.3534	592.3534	0.1768		596.0671
Total	**0.7423**	**8.8100**	**3.0671**	**5.6400e-003**		**0.4022**	**0.4022**		**0.3700**	**0.3700**	**0.0000**	**592.3534**	**592.3534**	**0.1768**		**596.0671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0233	0.1667	0.2791	3.1000e-004	8.3100e-003	2.5200e-003	0.0108	2.3700e-003	2.3200e-003	4.6800e-003		31.1658	31.1658	3.0000e-004		31.1720
Worker	0.1968	0.3034	2.8495	4.1800e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		359.8140	359.8140	0.0239		360.3161
Total	**0.2201**	**0.4700**	**3.1286**	**4.4900e-003**	**0.3918**	**5.6800e-003**	**0.3975**	**0.1041**	**5.1700e-003**	**0.1093**		**390.9798**	**390.9798**	**0.0242**		**391.4881**

3.5 Process Mechanical/Electrical Offsite - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2412	2.0723	1.2757	1.5200e-003		0.1741	0.1741		0.1602	0.1602		160.3667	160.3667	0.0479		161.3721
Total	**0.2412**	**2.0723**	**1.2757**	**1.5200e-003**		**0.1741**	**0.1741**		**0.1602**	**0.1602**		**160.3667**	**160.3667**	**0.0479**		**161.3721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0233	0.1667	0.2791	3.1000e-004	8.3100e-003	2.5200e-003	0.0108	2.3700e-003	2.3200e-003	4.6800e-003		31.1658	31.1658	3.0000e-004		31.1720
Worker	0.1968	0.3034	2.8495	4.1800e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		359.8140	359.8140	0.0239		360.3161
Total	**0.2201**	**0.4700**	**3.1286**	**4.4900e-003**	**0.3918**	**5.6800e-003**	**0.3975**	**0.1041**	**5.1700e-003**	**0.1093**		**390.9798**	**390.9798**	**0.0242**		**391.4881**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2412	2.0723	1.2757	1.5200e-003		0.1741	0.1741		0.1602	0.1602	0.0000	160.3667	160.3667	0.0479		161.3721
Total	**0.2412**	**2.0723**	**1.2757**	**1.5200e-003**		**0.1741**	**0.1741**		**0.1602**	**0.1602**	**0.0000**	**160.3667**	**160.3667**	**0.0479**		**161.3721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0233	0.1667	0.2791	3.1000e-004	8.3100e-003	2.5200e-003	0.0108	2.3700e-003	2.3200e-003	4.6800e-003		31.1658	31.1658	3.0000e-004		31.1720
Worker	0.1968	0.3034	2.8495	4.1800e-003	0.3835	3.1600e-003	0.3867	0.1017	2.8500e-003	0.1046		359.8140	359.8140	0.0239		360.3161
Total	**0.2201**	**0.4700**	**3.1286**	**4.4900e-003**	**0.3918**	**5.6800e-003**	**0.3975**	**0.1041**	**5.1700e-003**	**0.1093**		**390.9798**	**390.9798**	**0.0242**		**391.4881**

3.5 Process Mechanical/Electrical Offsite - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2269	1.9533	1.2630	1.5300e-003		0.1633	0.1633		0.1503	0.1503		158.7220	158.7220	0.0479		159.7274
Total	**0.2269**	**1.9533**	**1.2630**	**1.5300e-003**		**0.1633**	**0.1633**		**0.1503**	**0.1503**		**158.7220**	**158.7220**	**0.0479**		**159.7274**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0203	0.1472	0.2544	3.1000e-004	8.3100e-003	2.0000e-003	0.0103	2.3700e-003	1.8300e-003	4.2000e-003		30.8320	30.8320	2.6000e-004		30.8374
Worker	0.1691	0.2661	2.4857	4.1700e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		347.0440	347.0440	0.0213		347.4908
Total	**0.1894**	**0.4132**	**2.7401**	**4.4800e-003**	**0.3918**	**4.9100e-003**	**0.3967**	**0.1041**	**4.4700e-003**	**0.1086**		**377.8760**	**377.8760**	**0.0215**		**378.3282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2269	1.9533	1.2630	1.5300e-003		0.1633	0.1633		0.1503	0.1503	0.0000	158.7220	158.7220	0.0479		159.7274
Total	**0.2269**	**1.9533**	**1.2630**	**1.5300e-003**		**0.1633**	**0.1633**		**0.1503**	**0.1503**	**0.0000**	**158.7220**	**158.7220**	**0.0479**		**159.7274**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0203	0.1472	0.2544	3.1000e-004	8.3100e-003	2.0000e-003	0.0103	2.3700e-003	1.8300e-003	4.2000e-003		30.8320	30.8320	2.6000e-004		30.8374
Worker	0.1691	0.2661	2.4857	4.1700e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		347.0440	347.0440	0.0213		347.4908
Total	**0.1894**	**0.4132**	**2.7401**	**4.4800e-003**	**0.3918**	**4.9100e-003**	**0.3967**	**0.1041**	**4.4700e-003**	**0.1086**		**377.8760**	**377.8760**	**0.0215**		**378.3282**

3.6 Process Mechanical/Electrical Onsite - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9470	10.4848	4.2478	7.1600e-003		0.5505	0.5505		0.5064	0.5064		744.9567	744.9567	0.2247		749.6755
Total	**0.9470**	**10.4848**	**4.2478**	**7.1600e-003**		**0.5505**	**0.5505**		**0.5064**	**0.5064**		**744.9567**	**744.9567**	**0.2247**		**749.6755**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0160	0.2248	0.2051	5.4000e-004	0.0126	2.8600e-003	0.0154	3.4400e-003	2.6300e-003	6.0700e-003		53.8762	53.8762	3.8000e-004		53.8841
Vendor	0.0203	0.1472	0.2544	3.1000e-004	8.3100e-003	2.0000e-003	0.0103	2.3700e-003	1.8300e-003	4.2000e-003		30.8320	30.8320	2.6000e-004		30.8374
Worker	0.1691	0.2661	2.4857	4.1700e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		347.0440	347.0440	0.0213		347.4908
Total	**0.2055**	**0.6380**	**2.9452**	**5.0200e-003**	**0.4044**	**7.7700e-003**	**0.4122**	**0.1075**	**7.1000e-003**	**0.1146**		**431.7521**	**431.7521**	**0.0219**		**432.2123**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9470	10.4848	4.2478	7.1600e-003		0.5505	0.5505		0.5064	0.5064	0.0000	744.9567	744.9567	0.2247		749.6755
Total	**0.9470**	**10.4848**	**4.2478**	**7.1600e-003**		**0.5505**	**0.5505**		**0.5064**	**0.5064**	**0.0000**	**744.9567**	**744.9567**	**0.2247**		**749.6755**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0160	0.2248	0.2051	5.4000e-004	0.0126	2.8600e-003	0.0154	3.4400e-003	2.6300e-003	6.0700e-003		53.8762	53.8762	3.8000e-004		53.8841
Vendor	0.0203	0.1472	0.2544	3.1000e-004	8.3100e-003	2.0000e-003	0.0103	2.3700e-003	1.8300e-003	4.2000e-003		30.8320	30.8320	2.6000e-004		30.8374
Worker	0.1691	0.2661	2.4857	4.1700e-003	0.3835	2.9100e-003	0.3864	0.1017	2.6400e-003	0.1044		347.0440	347.0440	0.0213		347.4908
Total	**0.2055**	**0.6380**	**2.9452**	**5.0200e-003**	**0.4044**	**7.7700e-003**	**0.4122**	**0.1075**	**7.1000e-003**	**0.1146**		**431.7521**	**431.7521**	**0.0219**		**432.2123**

3.7 Commissioning - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0203	0.1472	0.2544	3.1000e-004	8.3100e-003	2.0000e-003	0.0103	2.3700e-003	1.8300e-003	4.2000e-003		30.8320	30.8320	2.6000e-004		30.8374
Worker	0.1320	0.2077	1.9400	3.2600e-003	0.2993	2.2700e-003	0.3016	0.0794	2.0600e-003	0.0815		270.8636	270.8636	0.0166		271.2123
Total	**0.1523**	**0.3548**	**2.1944**	**3.5700e-003**	**0.3077**	**4.2700e-003**	**0.3119**	**0.0818**	**3.8900e-003**	**0.0857**		**301.6956**	**301.6956**	**0.0169**		**302.0497**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0203	0.1472	0.2544	3.1000e-004	8.3100e-003	2.0000e-003	0.0103	2.3700e-003	1.8300e-003	4.2000e-003		30.8320	30.8320	2.6000e-004		30.8374
Worker	0.1320	0.2077	1.9400	3.2600e-003	0.2993	2.2700e-003	0.3016	0.0794	2.0600e-003	0.0815		270.8636	270.8636	0.0166		271.2123
Total	**0.1523**	**0.3548**	**2.1944**	**3.5700e-003**	**0.3077**	**4.2700e-003**	**0.3119**	**0.0818**	**3.8900e-003**	**0.0857**		**301.6956**	**301.6956**	**0.0169**		**302.0497**

Santa Barbara Desalination Project - Construction

Santa Barbara-South of Santa Ynez Range County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	15.00	1000sqft	2.50	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1607	1.5005	1.1937	1.6900e-003	0.0350	0.0914	0.1263	8.9500e-003	0.0841	0.0930	0.0000	153.7048	153.7048	0.0375	0.0000	154.4913
2016	0.0387	0.2919	0.3305	5.2000e-004	0.0291	0.0143	0.0434	7.7500e-003	0.0131	0.0209	0.0000	42.9861	42.9861	6.4200e-003	0.0000	43.1209
Total	**0.1994**	**1.7924**	**1.5241**	**2.2100e-003**	**0.0641**	**0.1056**	**0.1697**	**0.0167**	**0.0972**	**0.1139**	**0.0000**	**196.6909**	**196.6909**	**0.0439**	**0.0000**	**197.6121**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1607	1.5005	1.1937	1.6900e-003	0.0333	0.0914	0.1247	8.7200e-003	0.0841	0.0928	0.0000	153.7046	153.7046	0.0375	0.0000	154.4911
2016	0.0387	0.2919	0.3305	5.2000e-004	0.0291	0.0143	0.0434	7.7500e-003	0.0131	0.0209	0.0000	42.9861	42.9861	6.4200e-003	0.0000	43.1208
Total	**0.1994**	**1.7924**	**1.5241**	**2.2100e-003**	**0.0625**	**0.1056**	**0.1681**	**0.0165**	**0.0972**	**0.1137**	**0.0000**	**196.6907**	**196.6907**	**0.0439**	**0.0000**	**197.6119**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**2.56**	**0.00**	**0.97**	**1.38**	**0.00**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	9/30/2015	5	66	
2	Site Civil Work	Grading	8/1/2015	12/31/2015	5	109	
3	Process Mech/Elec Offsite Crane	Building Construction	12/1/2015	12/1/2015	5	1	1 day of crane ops
4	Process Mechanical/Electrical Offsite	Building Construction	12/2/2015	1/31/2016	5	43	modular equip construction
5	Process Mechanical/Electrical Onsite	Building Construction	2/1/2016	3/31/2016	5	44	equip delivery and install
6	Commissioning	Building Construction	4/1/2016	8/31/2016	5	109	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	8.00	226	0.29
Demolition	Forklifts	1	8.00	89	0.20
Demolition	Plate Compactors	2	8.00	8	0.43
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Civil Work	Excavators	1	8.00	162	0.38
Site Civil Work	Forklifts	1	8.00	89	0.20
Site Civil Work	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Process Mech/Elec Offsite Crane	Cranes	1	8.00	226	0.29
Process Mechanical/Electrical Offsite	Forklifts	1	8.00	89	0.20
Process Mechanical/Electrical Onsite	Cranes	1	8.00	226	0.29
Process Mechanical/Electrical Onsite	Forklifts	1	8.00	89	0.20
Demolition	Excavators	1	8.00	162	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	32.00	6.00	20.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Civil Work	4	32.00	2.00	63.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mech/Elec Offsite Crane	1	42.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mechanical/Electrical Offsite	1	42.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Process Mechanical/Electrical Onsite	2	42.00	2.00	32.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Commissioning	0	32.00	2.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1700e-003	0.0000	2.1700e-003	3.3000e-004	0.0000	3.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0608	0.6503	0.3513	5.5000e-004		0.0365	0.0365		0.0336	0.0336	0.0000	51.1176	51.1176	0.0149	0.0000	51.4296
Total	**0.0608**	**0.6503**	**0.3513**	**5.5000e-004**	**2.1700e-003**	**0.0365**	**0.0387**	**3.3000e-004**	**0.0336**	**0.0340**	**0.0000**	**51.1176**	**51.1176**	**0.0149**	**0.0000**	**51.4296**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	3.6900e-003	3.5800e-003	1.0000e-005	1.7000e-004	5.0000e-005	2.2000e-004	5.0000e-005	5.0000e-005	1.0000e-004	0.0000	0.6784	0.6784	1.0000e-005	0.0000	0.6785
Vendor	2.6300e-003	0.0170	0.0340	3.0000e-005	8.1000e-004	2.5000e-004	1.0600e-003	2.3000e-004	2.3000e-004	4.6000e-004	0.0000	2.7852	2.7852	3.0000e-005	0.0000	2.7858
Worker	5.2400e-003	8.7700e-003	0.0755	1.1000e-004	9.6600e-003	8.0000e-005	9.7400e-003	2.5700e-003	7.0000e-005	2.6400e-003	0.0000	8.2251	8.2251	5.6000e-004	0.0000	8.2368
Total	**8.1500e-003**	**0.0295**	**0.1131**	**1.5000e-004**	**0.0106**	**3.8000e-004**	**0.0110**	**2.8500e-003**	**3.5000e-004**	**3.2000e-003**	**0.0000**	**11.6887**	**11.6887**	**6.0000e-004**	**0.0000**	**11.7011**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8000e-004	0.0000	9.8000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0608	0.6503	0.3513	5.5000e-004		0.0365	0.0365		0.0336	0.0336	0.0000	51.1175	51.1175	0.0149	0.0000	51.4296
Total	**0.0608**	**0.6503**	**0.3513**	**5.5000e-004**	**9.8000e-004**	**0.0365**	**0.0375**	**1.5000e-004**	**0.0336**	**0.0338**	**0.0000**	**51.1175**	**51.1175**	**0.0149**	**0.0000**	**51.4296**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	3.6900e-003	3.5800e-003	1.0000e-005	1.7000e-004	5.0000e-005	2.2000e-004	5.0000e-005	5.0000e-005	1.0000e-004	0.0000	0.6784	0.6784	1.0000e-005	0.0000	0.6785
Vendor	2.6300e-003	0.0170	0.0340	3.0000e-005	8.1000e-004	2.5000e-004	1.0600e-003	2.3000e-004	2.3000e-004	4.6000e-004	0.0000	2.7852	2.7852	3.0000e-005	0.0000	2.7858
Worker	5.2400e-003	8.7700e-003	0.0755	1.1000e-004	9.6600e-003	8.0000e-005	9.7400e-003	2.5700e-003	7.0000e-005	2.6400e-003	0.0000	8.2251	8.2251	5.6000e-004	0.0000	8.2368
Total	**8.1500e-003**	**0.0295**	**0.1131**	**1.5000e-004**	**0.0106**	**3.8000e-004**	**0.0110**	**2.8500e-003**	**3.5000e-004**	**3.2000e-003**	**0.0000**	**11.6887**	**11.6887**	**6.0000e-004**	**0.0000**	**11.7011**

3.3 Site Civil Work - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.1000e-004	0.0000	8.1000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0751	0.7522	0.5214	7.1000e-004		0.0519	0.0519		0.0477	0.0477	0.0000	67.7793	67.7793	0.0202	0.0000	68.2042
Total	**0.0751**	**0.7522**	**0.5214**	**7.1000e-004**	**8.1000e-004**	**0.0519**	**0.0527**	**9.0000e-005**	**0.0477**	**0.0478**	**0.0000**	**67.7793**	**67.7793**	**0.0202**	**0.0000**	**68.2042**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.9000e-004	0.0116	0.0113	2.0000e-005	5.3000e-004	1.7000e-004	7.0000e-004	1.5000e-004	1.5000e-004	3.0000e-004	0.0000	2.1370	2.1370	2.0000e-005	0.0000	2.1374
Vendor	1.4500e-003	9.3600e-003	0.0187	2.0000e-005	4.4000e-004	1.4000e-004	5.8000e-004	1.3000e-004	1.3000e-004	2.5000e-004	0.0000	1.5333	1.5333	1.0000e-005	0.0000	1.5336
Worker	8.6500e-003	0.0145	0.1247	1.7000e-004	0.0160	1.3000e-004	0.0161	4.2400e-003	1.2000e-004	4.3600e-003	0.0000	13.5839	13.5839	9.2000e-004	0.0000	13.6033
Total	**0.0110**	**0.0355**	**0.1547**	**2.1000e-004**	**0.0169**	**4.4000e-004**	**0.0174**	**4.5200e-003**	**4.0000e-004**	**4.9100e-003**	**0.0000**	**17.2542**	**17.2542**	**9.5000e-004**	**0.0000**	**17.2742**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6000e-004	0.0000	3.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0751	0.7522	0.5214	7.1000e-004		0.0519	0.0519		0.0477	0.0477	0.0000	67.7792	67.7792	0.0202	0.0000	68.2042
Total	**0.0751**	**0.7522**	**0.5214**	**7.1000e-004**	**3.6000e-004**	**0.0519**	**0.0522**	**4.0000e-005**	**0.0477**	**0.0478**	**0.0000**	**67.7792**	**67.7792**	**0.0202**	**0.0000**	**68.2042**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.9000e-004	0.0116	0.0113	2.0000e-005	5.3000e-004	1.7000e-004	7.0000e-004	1.5000e-004	1.5000e-004	3.0000e-004	0.0000	2.1370	2.1370	2.0000e-005	0.0000	2.1374
Vendor	1.4500e-003	9.3600e-003	0.0187	2.0000e-005	4.4000e-004	1.4000e-004	5.8000e-004	1.3000e-004	1.3000e-004	2.5000e-004	0.0000	1.5333	1.5333	1.0000e-005	0.0000	1.5336
Worker	8.6500e-003	0.0145	0.1247	1.7000e-004	0.0160	1.3000e-004	0.0161	4.2400e-003	1.2000e-004	4.3600e-003	0.0000	13.5839	13.5839	9.2000e-004	0.0000	13.6033
Total	**0.0110**	**0.0355**	**0.1547**	**2.1000e-004**	**0.0169**	**4.4000e-004**	**0.0174**	**4.5200e-003**	**4.0000e-004**	**4.9100e-003**	**0.0000**	**17.2542**	**17.2542**	**9.5000e-004**	**0.0000**	**17.2742**

3.4 Process Mech/Elec Offsite Crane - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7000e-004	4.4000e-003	1.5300e-003	0.0000		2.0000e-004	2.0000e-004		1.9000e-004	1.9000e-004	0.0000	0.2687	0.2687	8.0000e-005	0.0000	0.2704
Total	**3.7000e-004**	**4.4000e-003**	**1.5300e-003**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.2687**	**0.2687**	**8.0000e-005**	**0.0000**	**0.2704**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	9.0000e-005	1.7000e-004	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0141	0.0141	0.0000	0.0000	0.0141
Worker	1.0000e-004	1.7000e-004	1.4700e-003	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1597	0.1597	1.0000e-005	0.0000	0.1599
Total	**1.1000e-004**	**2.6000e-004**	**1.6400e-003**	**0.0000**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1737**	**0.1737**	**1.0000e-005**	**0.0000**	**0.1740**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7000e-004	4.4000e-003	1.5300e-003	0.0000		2.0000e-004	2.0000e-004		1.9000e-004	1.9000e-004	0.0000	0.2687	0.2687	8.0000e-005	0.0000	0.2704
Total	**3.7000e-004**	**4.4000e-003**	**1.5300e-003**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.2687**	**0.2687**	**8.0000e-005**	**0.0000**	**0.2704**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	9.0000e-005	1.7000e-004	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0141	0.0141	0.0000	0.0000	0.0141
Worker	1.0000e-004	1.7000e-004	1.4700e-003	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1597	0.1597	1.0000e-005	0.0000	0.1599
Total	**1.1000e-004**	**2.6000e-004**	**1.6400e-003**	**0.0000**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1737**	**0.1737**	**1.0000e-005**	**0.0000**	**0.1740**

3.5 Process Mechanical/Electrical Offsite - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6500e-003	0.0228	0.0140	2.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	1.6003	1.6003	4.8000e-004	0.0000	1.6103
Total	**2.6500e-003**	**0.0228**	**0.0140**	**2.0000e-005**		**1.9100e-003**	**1.9100e-003**		**1.7600e-003**	**1.7600e-003**	**0.0000**	**1.6003**	**1.6003**	**4.8000e-004**	**0.0000**	**1.6103**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	1.8900e-003	3.7800e-003	0.0000	9.0000e-005	3.0000e-005	1.2000e-004	3.0000e-005	3.0000e-005	5.0000e-005	0.0000	0.3095	0.3095	0.0000	0.0000	0.3095
Worker	2.2400e-003	3.7400e-003	0.0323	4.0000e-005	4.1300e-003	3.0000e-005	4.1600e-003	1.1000e-003	3.0000e-005	1.1300e-003	0.0000	3.5128	3.5128	2.4000e-004	0.0000	3.5178
Total	**2.5300e-003**	**5.6300e-003**	**0.0360**	**4.0000e-005**	**4.2200e-003**	**6.0000e-005**	**4.2800e-003**	**1.1300e-003**	**6.0000e-005**	**1.1800e-003**	**0.0000**	**3.8223**	**3.8223**	**2.4000e-004**	**0.0000**	**3.8274**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6500e-003	0.0228	0.0140	2.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	1.6003	1.6003	4.8000e-004	0.0000	1.6103
Total	**2.6500e-003**	**0.0228**	**0.0140**	**2.0000e-005**		**1.9100e-003**	**1.9100e-003**		**1.7600e-003**	**1.7600e-003**	**0.0000**	**1.6003**	**1.6003**	**4.8000e-004**	**0.0000**	**1.6103**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	1.8900e-003	3.7800e-003	0.0000	9.0000e-005	3.0000e-005	1.2000e-004	3.0000e-005	3.0000e-005	5.0000e-005	0.0000	0.3095	0.3095	0.0000	0.0000	0.3095
Worker	2.2400e-003	3.7400e-003	0.0323	4.0000e-005	4.1300e-003	3.0000e-005	4.1600e-003	1.1000e-003	3.0000e-005	1.1300e-003	0.0000	3.5128	3.5128	2.4000e-004	0.0000	3.5178
Total	**2.5300e-003**	**5.6300e-003**	**0.0360**	**4.0000e-005**	**4.2200e-003**	**6.0000e-005**	**4.2800e-003**	**1.1300e-003**	**6.0000e-005**	**1.1800e-003**	**0.0000**	**3.8223**	**3.8223**	**2.4000e-004**	**0.0000**	**3.8274**

3.5 Process Mechanical/Electrical Offsite - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3800e-003	0.0205	0.0133	2.0000e-005		1.7100e-003	1.7100e-003		1.5800e-003	1.5800e-003	0.0000	1.5119	1.5119	4.6000e-004	0.0000	1.5215
Total	**2.3800e-003**	**0.0205**	**0.0133**	**2.0000e-005**		**1.7100e-003**	**1.7100e-003**		**1.5800e-003**	**1.5800e-003**	**0.0000**	**1.5119**	**1.5119**	**4.6000e-004**	**0.0000**	**1.5215**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	1.5900e-003	3.3200e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.2922	0.2922	0.0000	0.0000	0.2923
Worker	1.8300e-003	3.1400e-003	0.0267	4.0000e-005	3.9400e-003	3.0000e-005	3.9700e-003	1.0500e-003	3.0000e-005	1.0700e-003	0.0000	3.2339	3.2339	2.0000e-004	0.0000	3.2382
Total	**2.0700e-003**	**4.7300e-003**	**0.0300**	**4.0000e-005**	**4.0300e-003**	**5.0000e-005**	**4.0800e-003**	**1.0700e-003**	**5.0000e-005**	**1.1100e-003**	**0.0000**	**3.5262**	**3.5262**	**2.0000e-004**	**0.0000**	**3.5305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3800e-003	0.0205	0.0133	2.0000e-005		1.7100e-003	1.7100e-003		1.5800e-003	1.5800e-003	0.0000	1.5119	1.5119	4.6000e-004	0.0000	1.5215
Total	**2.3800e-003**	**0.0205**	**0.0133**	**2.0000e-005**		**1.7100e-003**	**1.7100e-003**		**1.5800e-003**	**1.5800e-003**	**0.0000**	**1.5119**	**1.5119**	**4.6000e-004**	**0.0000**	**1.5215**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	1.5900e-003	3.3200e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.2922	0.2922	0.0000	0.0000	0.2923
Worker	1.8300e-003	3.1400e-003	0.0267	4.0000e-005	3.9400e-003	3.0000e-005	3.9700e-003	1.0500e-003	3.0000e-005	1.0700e-003	0.0000	3.2339	3.2339	2.0000e-004	0.0000	3.2382
Total	**2.0700e-003**	**4.7300e-003**	**0.0300**	**4.0000e-005**	**4.0300e-003**	**5.0000e-005**	**4.0800e-003**	**1.0700e-003**	**5.0000e-005**	**1.1100e-003**	**0.0000**	**3.5262**	**3.5262**	**2.0000e-004**	**0.0000**	**3.5305**

3.6 Process Mechanical/Electrical Onsite - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.2307	0.0935	1.6000e-004		0.0121	0.0121		0.0111	0.0111	0.0000	14.8679	14.8679	4.4800e-003	0.0000	14.9621
Total	**0.0208**	**0.2307**	**0.0935**	**1.6000e-004**		**0.0121**	**0.0121**		**0.0111**	**0.0111**	**0.0000**	**14.8679**	**14.8679**	**4.4800e-003**	**0.0000**	**14.9621**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8000e-004	5.1300e-003	5.2500e-003	1.0000e-005	2.7000e-004	6.0000e-005	3.3000e-004	7.0000e-005	6.0000e-005	1.3000e-004	0.0000	1.0742	1.0742	1.0000e-005	0.0000	1.0744
Vendor	5.1000e-004	3.3300e-003	6.9600e-003	1.0000e-005	1.8000e-004	4.0000e-005	2.2000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6123	0.6123	1.0000e-005	0.0000	0.6124
Worker	3.8300e-003	6.5700e-003	0.0560	9.0000e-005	8.2500e-003	6.0000e-005	8.3200e-003	2.1900e-003	6.0000e-005	2.2500e-003	0.0000	6.7759	6.7759	4.2000e-004	0.0000	6.7848
Total	**4.7200e-003**	**0.0150**	**0.0682**	**1.1000e-004**	**8.7000e-003**	**1.6000e-004**	**8.8700e-003**	**2.3100e-003**	**1.6000e-004**	**2.4700e-003**	**0.0000**	**8.4623**	**8.4623**	**4.4000e-004**	**0.0000**	**8.4715**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.2307	0.0935	1.6000e-004		0.0121	0.0121		0.0111	0.0111	0.0000	14.8679	14.8679	4.4800e-003	0.0000	14.9621
Total	**0.0208**	**0.2307**	**0.0935**	**1.6000e-004**		**0.0121**	**0.0121**		**0.0111**	**0.0111**	**0.0000**	**14.8679**	**14.8679**	**4.4800e-003**	**0.0000**	**14.9621**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8000e-004	5.1300e-003	5.2500e-003	1.0000e-005	2.7000e-004	6.0000e-005	3.3000e-004	7.0000e-005	6.0000e-005	1.3000e-004	0.0000	1.0742	1.0742	1.0000e-005	0.0000	1.0744
Vendor	5.1000e-004	3.3300e-003	6.9600e-003	1.0000e-005	1.8000e-004	4.0000e-005	2.2000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6123	0.6123	1.0000e-005	0.0000	0.6124
Worker	3.8300e-003	6.5700e-003	0.0560	9.0000e-005	8.2500e-003	6.0000e-005	8.3200e-003	2.1900e-003	6.0000e-005	2.2500e-003	0.0000	6.7759	6.7759	4.2000e-004	0.0000	6.7848
Total	**4.7200e-003**	**0.0150**	**0.0682**	**1.1000e-004**	**8.7000e-003**	**1.6000e-004**	**8.8700e-003**	**2.3100e-003**	**1.6000e-004**	**2.4700e-003**	**0.0000**	**8.4623**	**8.4623**	**4.4000e-004**	**0.0000**	**8.4715**

3.7 Commissioning - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	8.2600e-003	0.0173	2.0000e-005	4.4000e-004	1.1000e-004	5.5000e-004	1.3000e-004	1.0000e-004	2.3000e-004	0.0000	1.5168	1.5168	1.0000e-005	0.0000	1.5171
Worker	7.4000e-003	0.0127	0.1083	1.7000e-004	0.0160	1.2000e-004	0.0161	4.2400e-003	1.1000e-004	4.3500e-003	0.0000	13.1010	13.1010	8.2000e-004	0.0000	13.1182
Total	**8.6600e-003**	**0.0210**	**0.1255**	**1.9000e-004**	**0.0164**	**2.3000e-004**	**0.0166**	**4.3700e-003**	**2.1000e-004**	**4.5800e-003**	**0.0000**	**14.6178**	**14.6178**	**8.3000e-004**	**0.0000**	**14.6353**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	8.2600e-003	0.0173	2.0000e-005	4.4000e-004	1.1000e-004	5.5000e-004	1.3000e-004	1.0000e-004	2.3000e-004	0.0000	1.5168	1.5168	1.0000e-005	0.0000	1.5171
Worker	7.4000e-003	0.0127	0.1083	1.7000e-004	0.0160	1.2000e-004	0.0161	4.2400e-003	1.1000e-004	4.3500e-003	0.0000	13.1010	13.1010	8.2000e-004	0.0000	13.1182
Total	**8.6600e-003**	**0.0210**	**0.1255**	**1.9000e-004**	**0.0164**	**2.3000e-004**	**0.0166**	**4.3700e-003**	**2.1000e-004**	**4.5800e-003**	**0.0000**	**14.6178**	**14.6178**	**8.3000e-004**	**0.0000**	**14.6353**

Marine Vessel Emissions

Maximum Daily Emissions From Construction Activities

		pounds/day						MT/day
Vessel	**Engines**	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Tug Boat	Main	7.16	86.45	22.12	0.04	3.56	3.49	3.93
	Auxiliary	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total		7.16	86.45	22.12	0.04	3.56	3.49	3.93
Work Boat	Main	3.84	44.99	11.58	0.02	1.95	1.91	2.20
	Auxiliary	1.16	10.61	4.45	0.01	0.42	0.42	0.45
Sub Total		5.00	55.60	16.04	0.03	2.37	2.32	2.65
Total		12.16	142.05	38.16	0.07	5.93	5.81	6.57

Maximum Annual Emissions From Construction Activities

		tons/year						MT/year
Vessel	**Engines**	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Tug Boat	Main	0.11	1.30	0.33	0.00	0.05	0.05	117.85
	Auxiliary	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total		0.11	1.30	0.33	0.00	0.05	0.05	117.85
Work Boat	Main	0.06	0.67	0.17	0.00	0.03	0.03	65.86
	Auxiliary	0.02	0.16	0.07	0.00	0.01	0.01	13.51
Sub Total		0.08	0.83	0.24	0.00	0.04	0.03	79.37
Total		0.18	2.13	0.57	0.00	0.09	0.09	197.22

Maximum Daily Emissions From Daily Travel To/From Port

		pounds/day						MT/day
Vessel	**Engines**	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Tug Boat	Main	2.18	26.29	6.73	0.01	1.08	1.06	1.19
	Auxiliary	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total		2.18	26.29	6.73	0.01	1.08	1.06	1.19
Work Boat	Main	1.17	13.68	3.52	0.01	0.59	0.58	0.67
	Auxiliary	0.35	3.23	1.36	0.00	0.13	0.13	0.14
Sub Total		1.52	16.91	4.88	0.01	0.72	0.71	0.80
Total		3.70	43.21	11.61	0.02	1.80	1.77	2.00

Maximum Annual Emissions From Daily Travel To/From Port

		tons/year						MT/year
Vessel	**Engines**	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Tug Boat	Main	0.00	0.03	0.01	0.00	0.00	0.00	2.39
	Auxiliary	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total		0.00	0.03	0.01	0.00	0.00	0.00	2.39
Work Boat	Main	0.00	0.01	0.00	0.00	0.00	0.00	1.34
	Auxiliary	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Sub Total		0.00	0.02	0.00	0.00	0.00	0.00	1.61
Total		0.00	0.04	0.01	0.00	0.00	0.00	4.00

Total Annual Emissions From Construction and Travel

	tons/year						MT/year
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Total	0.19	2.17	0.58	0.00	0.09	0.09	201.22

Vessel 1	
Name	Tug Boat
Vessel Type	Tug Boats
Main Engine Power (hp)	900
Engine Power Range (Low)	751
Engine Power Range (High)	1900
Main Engine Power (kW)	671.13
Number of Main Engines	1
Auxiliary Engine Power (hp)	0
Auxiliary Engine Power (kW)	0
Number of Auxiliary Engines	0
Main Engine Load Factor	0.5
Auxiliary Engine Load Factor	0.31
Main Engine Model Year	1994
Model Year Range (Low)	1987
Model Year Range (High)	1994
Main Engine Age	21
Main Engine Useful Life	21
Auxiliary Engine Model Year	0
Auxiliary Engine Age	0
Auxiliary Engine Useful Life	23
Brake Specific Fuel Consumption (g/hp-h)	184
Operational Time (hours/day)	8
Work Days (days)	30
Operational Year	2015

Vessel 2	
Name	Work Boat
Vessel Type	Work Boats
Main Engine Power (hp)	500
Engine Power Range (Low)	251
Engine Power Range (High)	500
Main Engine Power (kW)	372.85
Number of Main Engines	1
Auxiliary Engine Power (hp)	80.4614
Auxiliary Engine Power (kW)	60.00006598
Number of Auxiliary Engines	2
Main Engine Load Factor	0.45
Auxiliary Engine Load Factor	0.43
Main Engine Model Year	1994
Model Year Range (Low)	1987
Model Year Range (High)	1994
Main Engine Age	21
Main Engine Useful Life	17
Auxiliary Engine Model Year	1992
Auxiliary Engine Age	23
Auxiliary Engine Useful Life	23
Brake Specific Fuel Consumption (g/hp-h)	184
Operational Time (hours/day)	8
Work Days (days)	2
Operational Year	2015

Emissions Factors

Vessel	Engines	ROG (g/kW-h)	NO_x (g/kW-h)	CO (g/kW-h)	SO_x (g/hp-h)	PM_{10} (g/kW-h)	$PM_{2.5}$ (g/kW-h)	CO_2 (g/hp-h)
Tug Boat	Main	0.84	12.98	2.99	0.00276	0.5	0.49	545.6
	Auxiliary	1	11	4.22	0.00276	0.45	0.441	545.6
Work Boat	Main	0.84	12.98	2.99	0.00276	0.5	0.49	545.6
	Auxiliary	1	11	4.22	0.00276	0.45	0.441	545.6

Engine Load Factor

	Tug Boat	Work Boat
Main	0.50	0.45
Auxiliary	0.31	0.43

Engine Useful Life

	Tug Boat	Work Boat
Main	21	17
Auxiliary	23	23

Engine Fuel Correction Factor

Vessel	Engines	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Tug Boat	Main	1	0.93	1	1	0.72	0.72	1
	Auxiliary	1	0	1	1	0	0	1
Work Boat	Main	1	0.93	1	1	0.72	0.72	1
	Auxiliary	1	0.93	1	1	0.72	0.72	1

Engine Deterioration Factor

Vessel	Engines	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Tug Boat	Main	0.44	0.21	0.25	1	0.67	0.67	1
	Auxiliary	0.51	0.06	0.41	1	0.31	0.31	1
Work Boat	Main	0.44	0.21	0.25	1	0.67	0.67	1
	Auxiliary	0.28	0.14	0.16	1	0.44	0.44	1

Time to and from Port Hueneme

Distance (nautical miles) [a]	29.2	
Speed (knots) [b]	12	
Time (hours)	2.43	
Max. Daily Number of	1	1
Total Number of Trips to	2	4

a. Distance based on route from Port Hueneme to 0.5 miles offshore of desalination plant.

b. Conservatively assumed that the Santa Barbara Channel Vessel Speed Speed Reduction Trial would apply as slowest speed.

Intake Construction Worker Vehicle Trips

Worker Vehicles		Trucks	Miles Traveled per day (miles/day) [1]	Work Days (day/yr)
		15	12.30	30

		ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Emission Factor	*g/mile/truck*	0.21	0.25	2.31	0.00	0.00	0.00	318.18
Daily Emissions	*lb/day*	0.09	0.10	0.94	0.00	0.00	0.00	129.42
Annual Emissions	*ton/yr*	0.00	0.00	0.01	0.00	0.00	0.00	1.94
Annual Emissions	*MT/yr*	0.00	0.00	0.01	0.00	0.00	0.00	1.76

1. Rural trip length for home to work trips from CalEEMod 2012.2.2 used to estimate distance.

On-site Utility Truck		Trucks	Miles Traveled per day (miles/day)	Work Days (day/yr)
		1	10.00	30

		ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Emission Factor	*g/mile/truck*	0.08	4.65	0.32	0.01	0.17	0.09	1,201.26
Daily Emissions	*lb/day*	0.00	0.10	0.01	0.00	0.00	0.00	26.48
Annual Emissions	*ton/yr*	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Annual Emissions	*MT/yr*	0.00	0.00	0.00	0.00	0.00	0.00	0.36

Total		ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Daily Emissions	*lb/day*	0.09	0.20	0.95	0.00	0.00	0.00	155.90
Annual Emissions	*ton/yr*	0.00	0.00	0.01	0.00	0.00	0.00	2.34
Annual Emissions	*MT/yr*	0.00	0.00	0.01	0.00	0.00	0.00	2.12

Emission Factors: Summary

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2
LDV Composite							
g/mile	0.214	0.251	2.308	0.004	0.003	0.002	318.177
T6 Utility							
g/mile	0.083	4.645	0.325	0.012	0.175	0.089	1201.259

Emission Factors: Calculations

Area	Scenario	Calendar Year	Season	Veh & Tech	EMFAC2007 Category	Vehicle Population	VMT	Trips	Total ROG Emissions	Total CO Emissions	Total NO_x Emissions	Total CO_2 Emissions (Pavley I + LCFS)	Total PM_{10} EX Emissions	Total $PM_{2.5}$ EX Emissions	Total SO_x Emissions	(tons/day)
Santa Barbara County	Worker Vehicles	2015	Summer	LDA - GAS	LDA - GAS	155679	6582756	979471	1.26	13.33	1.23	2,028.50	0.02	0.01	0.02	
Santa Barbara County	Worker Vehicles	2015	Summer	LDA - DSL	LDA - DSL	935	37328	5590	0.00	0.01	0.02	12.07	0.00	0.00	0.00	
Santa Barbara County	Worker Vehicles	2015	Summer	LDT1 - GAS	LDT1 - GAS	11939	489631	73268	0.22	2.44	0.22	184.55	0.00	0.00	0.00	
Santa Barbara County	Worker Vehicles	2015	Summer	LDT1 - DSL	LDT1 - DSL	29	1145	158	0.00	0.00	0.00	0.39	0.00	0.00	0.00	
Santa Barbara County	Worker Vehicles	2015	Summer	LDT2 - GAS	LDT2 - GAS	67738	2868419	423422	0.88	9.61	1.29	1,274.53	0.01	0.01	0.01	
Santa Barbara County	Worker Vehicles	2015	Summer	LDT2 - DSL	LDT2 - DSL	25	1048	147	0.00	0.00	0.00	0.36	0.00	0.00	0.00	
									2,138,500	23,035,487	2,509,199	3,175,511,281	26,468	24,123	37,124	(g/day)
									9,980,327	9,980,327	9,980,327	9,980,327	9,980,327	9,980,327	9,980,327	(miles/day)
						Composite LDV (LDA, LDT1, LDT2)			**0.21**	**2.31**	**0.25**	**318.18**	**0.00**	**0.00**	**0.00**	(g/mile)
Santa Barbara County	Utility Truck	2015	Summer	T6 Utility - Diesel	T6 Utility - DSL	43	850	0	0.00	0.00	0.00	1.13	0.00	0.00	0.00	(tons/day)
									71	276	3,950	1,021,450	149	76	10	(g/day)
									0.08	**0.32**	**4.65**	**1,201.26**	**0.17**	**0.09**	**0.01**	(g/mile)

Santa Barbara Desal Operational Emissions

Santa Barbara-South of Santa Ynez Range County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vehicle Trips - 8 on-site workers; 16 trips per day 7 days per week

Water And Wastewater - water use = 8% of industrial process water (App F - Details of Industrial Water Use)

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Energy	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003		57.9864	57.9864	1.1100e-003	1.0600e-003	58.3393
Mobile	0.0709	0.1627	0.7702	1.1500e-003	0.0874	1.8300e-003	0.0892	0.0234	1.6800e-003	0.0250		100.2808	100.2808	5.0900e-003		100.3877
Total	**1.2855**	**0.2111**	**0.8153**	**1.4400e-003**	**0.0874**	**5.5200e-003**	**0.0929**	**0.0234**	**5.3700e-003**	**0.0287**		**158.2767**	**158.2767**	**6.2300e-003**	**1.0600e-003**	**158.7371**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Energy	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003		57.9864	57.9864	1.1100e-003	1.0600e-003	58.3393
Mobile	0.0709	0.1627	0.7702	1.1500e-003	0.0874	1.8300e-003	0.0892	0.0234	1.6800e-003	0.0250		100.2808	100.2808	5.0900e-003		100.3877
Total	**1.2855**	**0.2111**	**0.8153**	**1.4400e-003**	**0.0874**	**5.5200e-003**	**0.0929**	**0.0234**	**5.3700e-003**	**0.0287**		**158.2767**	**158.2767**	**6.2300e-003**	**1.0600e-003**	**158.7371**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0709	0.1627	0.7702	1.1500e-003	0.0874	1.8300e-003	0.0892	0.0234	1.6800e-003	0.0250		100.2808	100.2808	5.0900e-003		100.3877
Unmitigated	0.0709	0.1627	0.7702	1.1500e-003	0.0874	1.8300e-003	0.0892	0.0234	1.6800e-003	0.0250		100.2808	100.2808	5.0900e-003		100.3877

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	16.00	16.00	16.00	41,221	41,221
Total	16.00	16.00	16.00	41,221	41,221

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	8.80	4.60	4.60	59.00	0.00	41.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488644	0.036147	0.211789	0.155303	0.049980	0.007496	0.019734	0.013964	0.001908	0.002194	0.008100	0.001610	0.003131

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Unmitigated	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Total	**1.2092**	**4.0000e-005**	**4.5600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0101**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Total	**1.2092**	**4.0000e-005**	**4.5600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0101**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Santa Barbara Desal Operational Emissions

Santa Barbara-South of Santa Ynez Range County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vehicle Trips - 8 on-site workers; 16 trips per day 7 days per week

Water And Wastewater - water use = 8% of industrial process water (App F - Details of Industrial Water Use)

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Energy	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003		57.9864	57.9864	1.1100e-003	1.0600e-003	58.3393
Mobile	0.0644	0.1517	0.6863	1.1700e-003	0.0874	1.8200e-003	0.0892	0.0234	1.6700e-003	0.0250		102.1332	102.1332	5.0900e-003		102.2400
Total	**1.2789**	**0.2001**	**0.7315**	**1.4600e-003**	**0.0874**	**5.5100e-003**	**0.0929**	**0.0234**	**5.3600e-003**	**0.0287**		**160.1291**	**160.1291**	**6.2300e-003**	**1.0600e-003**	**160.5894**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Energy	5.3200e-003	0.0483	0.0406	2.9000e-004		3.6700e-003	3.6700e-003		3.6700e-003	3.6700e-003		57.9864	57.9864	1.1100e-003	1.0600e-003	58.3393
Mobile	0.0644	0.1517	0.6863	1.1700e-003	0.0874	1.8200e-003	0.0892	0.0234	1.6700e-003	0.0250		102.1332	102.1332	5.0900e-003		102.2400
Total	**1.2789**	**0.2001**	**0.7315**	**1.4600e-003**	**0.0874**	**5.5100e-003**	**0.0929**	**0.0234**	**5.3600e-003**	**0.0287**		**160.1291**	**160.1291**	**6.2300e-003**	**1.0600e-003**	**160.5894**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0644	0.1517	0.6863	1.1700e-003	0.0874	1.8200e-003	0.0892	0.0234	1.6700e-003	0.0250		102.1332	102.1332	5.0900e-003		102.2400
Unmitigated	0.0644	0.1517	0.6863	1.1700e-003	0.0874	1.8200e-003	0.0892	0.0234	1.6700e-003	0.0250		102.1332	102.1332	5.0900e-003		102.2400

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	16.00	16.00	16.00	41,221	41,221
Total	16.00	16.00	16.00	41,221	41,221

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	8.80	4.60	4.60	59.00	0.00	41.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488644	0.036147	0.211789	0.155303	0.049980	0.007496	0.019734	0.013964	0.001908	0.002194	0.008100	0.001610	0.003131

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Unmitigated	1.2092	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Total	**1.2092**	**4.0000e-005**	**4.5600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0101**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0101
Total	**1.2092**	**4.0000e-005**	**4.5600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0101**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Santa Barbara Desal Operational Emissions

Santa Barbara-South of Santa Ynez Range County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Vehicle Trips - 8 on-site workers; 16 trips per day 7 days per week

Water And Wastewater - water use = 8% of industrial process water (App F - Details of Industrial Water Use)

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2206	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.2000e-004
Energy	9.7000e-004	8.8200e-003	7.4100e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	65.5701	65.5701	2.7600e-003	7.1000e-004	65.8475
Mobile	0.0121	0.0295	0.1331	2.1000e-004	0.0156	3.3000e-004	0.0159	4.1700e-003	3.0000e-004	4.4700e-003	0.0000	16.5646	16.5646	8.4000e-004	0.0000	16.5822
Waste						0.0000	0.0000		0.0000	0.0000	8.3125	0.0000	8.3125	0.4913	0.0000	18.6288
Water						0.0000	0.0000		0.0000	0.0000	0.2851	1.2478	1.5330	1.0400e-003	6.3000e-004	1.7507
Total	**0.2338**	**0.0384**	**0.1409**	**2.6000e-004**	**0.0156**	**1.0000e-003**	**0.0166**	**4.1700e-003**	**9.7000e-004**	**5.1400e-003**	**8.5976**	**83.3833**	**91.9809**	**0.4959**	**1.3400e-003**	**102.8100**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2206	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.2000e-004
Energy	9.7000e-004	8.8200e-003	7.4100e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	65.5701	65.5701	2.7600e-003	7.1000e-004	65.8475
Mobile	0.0121	0.0295	0.1331	2.1000e-004	0.0156	3.3000e-004	0.0159	4.1700e-003	3.0000e-004	4.4700e-003	0.0000	16.5646	16.5646	8.4000e-004	0.0000	16.5822
Waste						0.0000	0.0000		0.0000	0.0000	8.3125	0.0000	8.3125	0.4913	0.0000	18.6288
Water						0.0000	0.0000		0.0000	0.0000	0.2851	1.2478	1.5330	1.0300e-003	6.3000e-004	1.7502
Total	**0.2338**	**0.0384**	**0.1409**	**2.6000e-004**	**0.0156**	**1.0000e-003**	**0.0166**	**4.1700e-003**	**9.7000e-004**	**5.1400e-003**	**8.5976**	**83.3833**	**91.9809**	**0.4959**	**1.3400e-003**	**102.8095**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0121	0.0295	0.1331	2.1000e-004	0.0156	3.3000e-004	0.0159	4.1700e-003	3.0000e-004	4.4700e-003	0.0000	16.5646	16.5646	8.4000e-004	0.0000	16.5822
Unmitigated	0.0121	0.0295	0.1331	2.1000e-004	0.0156	3.3000e-004	0.0159	4.1700e-003	3.0000e-004	4.4700e-003	0.0000	16.5646	16.5646	8.4000e-004	0.0000	16.5822

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	16.00	16.00	16.00	41,221	41,221
Total	16.00	16.00	16.00	41,221	41,221

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	8.80	4.60	4.60	59.00	0.00	41.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488644	0.036147	0.211789	0.155303	0.049980	0.007496	0.019734	0.013964	0.001908	0.002194	0.008100	0.001610	0.003131

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2206	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.2000e-004
Unmitigated	0.2206	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0505					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.2000e-004
Total	**0.2206**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.8000e-004**	**7.8000e-004**	**0.0000**	**0.0000**	**8.2000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0505					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.8000e-004	7.8000e-004	0.0000	0.0000	8.2000e-004
Total	**0.2206**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.8000e-004**	**7.8000e-004**	**0.0000**	**0.0000**	**8.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.5330	1.0300e-003	6.3000e-004	1.7502
Unmitigated	1.5330	1.0400e-003	6.3000e-004	1.7507

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.80586 / 0	1.5330	1.0400e-003	6.3000e-004	1.7507
Total		**1.5330**	**1.0400e-003**	**6.3000e-004**	**1.7507**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.80586 / 0	1.5330	1.0300e-003	6.3000e-004	1.7502
Total		**1.5330**	**1.0300e-003**	**6.3000e-004**	**1.7502**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.3125	0.4913	0.0000	18.6288
Unmitigated	8.3125	0.4913	0.0000	18.6288

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	40.95	8.3125	0.4913	0.0000	18.6288
Total		**8.3125**	**0.4913**	**0.0000**	**18.6288**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	40.95	8.3125	0.4913	0.0000	18.6288
Total		**8.3125**	**0.4913**	**0.0000**	**18.6288**

Southern California Edison
Effect of 22% RPS
Based on 2007 Baseline Data

2007 Emission Factor[1]	630.89	lb CO2/MWh
2007 Renewables[2]	16%	
Without RPS	751.06	lb CO2/MWh
Future Renewables[3]	22%	
With Future RPS	585.83	lb CO2/MWh
Reduction	7.1%	

All renewable energy is assumed to be carbon neutral (i.e., no GHG emissions or from biogenic sources).

1. CalEEMod User's Guide, Appendix D, Table 1.2
2. SCE. 2007 Power Content Label (Actual)
3. SCE. 2013 Power Content Label (Actual)

Santa Barbara Desal Electrical Use and GHG Emissions

Phase	**AFY**	**kWh-yr[(1)]**	**CO_2E**
Phase 1	3,125	13,800,000	3,683
Phase 2	7,500	33,200,000	8,860
Phase 3	10,000	44,300,000	11,822

CO_2 Emission Factor (lb/kWh)	CH4 Emission Factor (lb/kWh)	N20 Emission Factor (lb/kWh)
0.585826	0.000029	0.00000617

Source:
(1): Steve Greer. City of Santa Barbara. Personal Communication.

Attachment 7

Charles E. Meyer Desalination Facility Reactivation Project Mitigation Monitoring and Reporting Program

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
Visual Resources										
1991 EIR Measures										
VIS-1	3.8-1	It is recommended that the City and Ionics coordinate with CalTrans to cooperate in the development of adequate freeway planting to help screen the desalination plant site.	**Plan Review**	**X**			**DBO Contractor**			
VIS-2	APM	The desalination facility has been designed to limit the height of facilities as practicable, and it will be surrounded by an aesthetic wall and/or mature/fast growing landscaping on all sides except the west where an existing wall at the City Corporation Yard already exists. Desalination plant facilities will be painted to match and blend in with the adjacent Rescue Mission.	**Plan Review**	**X**	**X**		**DBO Contractor**			
1994 EIR Measures										
VIS-3	5.10-1(a)	The project proponent shall ensure that all landscaped areas on the project site are properly irrigated and well maintained for the life of the project. Maintenance would include periodic pruning and weed clearance.	**Site Inspection**		**X**	**X**	**DBO Contractor**			
VIS-4	5.10-(b)	After site and freeway landscaping has matured to a point where Its ability to screen the site is evident, additional landscaping should be installed by the project proponent, if necessary, to screen views of the plant's facilities from the freeway to the maximum extent practical. Prior to Installation, landscaping plans shall be subject to City and Caltrans approval.	**Plan Review** **Site Inspection**	**X**	**X**		**DBO Contractor**			
VIS-5	5.10-1(c)	The electrical substation and surrounding chain-link fence shall be screened with landscaping from the	**Plan Review**	**X**	**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
		view of pedestrians and motorists along Yanonali Street. A landscaping plan shall be submitted by the project proponent to the Architectural Board of Review for approval prior to installation.								
Air Quality and Greenhouse Gas Emissions										
1991 EIR Measures										
AQ/GHG-1	APM (Updated)	Implement the recommended dust control measures promoted by the SBAPCD, including: • Use water trucks or sprinkler systems to keep areas of vehicle movement damp to prevent dust from leaving the site. • Minimize amount of disturbed area and reduce on-site vehicle speeds to 15 miles per hour or less. • For fill material, cover, keep moist, or treat soil stock piled for more than two days, and tarp trucks transporting fill material to and from the site. • Install gravel pads at access points to prevent tracking of mud onto public roads. • After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, re-vegetating, or by spreading soil binders until the area is paved or otherwise developed. • Designate a person or persons to monitor the dust control program and to order increased watering, as necessary	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
Biological Resources										
1991 EIR Measures										
BIO-1	3.4-1	If future offshore discharge monitoring results indicate that RWQCB Waste Discharge Requirements are exceeded, corrective action shall be taken to meet the specified requirements.	**Discharge Monitoring**			**X**	**DBO Contractor**			
Reactivation Measures										
BIO-2	General Biological Avoidance Measures 1	Workers Educational Training. Prior to the initiation of any maintenance activities, all personnel associated with the proposed Project should attend a worker education training program (program) conducted by a qualified biologist. In general, it is recommended that the program discuss the western snowy plover and tidewater goby habitat preference(s), occupied habitat in the area, life histories, law and regulations, as well as potential impacts and protection measures, and Action Area limits. Protections and regulations federally-listed species should also be included in the program. It is recommended that a species and habitat fact sheet also be developed prior to the training program and distributed at the training program to all contractors, employers and other personnel involved with maintenance activities at the weir box. Specifically, the program should also include: a. Measures to prevent indirect impacts during maintenance activities should be covered, including delivery, storage, and usage of materials and chemicals as they relate to the	**Pre-construction training**	**X**	**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
		protection of adjacent aquatic habitat. b. Training materials should include laws and regulations that protect federally-listed species and their habitats, the consequences of non-compliance with laws and regulations and a contact person (i.e. maintenance activity manager, biological monitor, and City's Project manager) in the event that protected biological resources are affected. The City should notify the qualified biologist in advance of the kick-off meeting and any subsequent meetings that may take place if additional contractors are employed during additional maintenance activities at the weir box. A sign in sheet will be circulated for signatures to all personal that attend the workers educational training to confirm that program materials were received and that they understand information presented.								
BIO-3	General Biological Avoidance Measures 2	Establish temporary fencing. Temporary fencing will be installed around the perimeter of the weir box on the beach to prevent inadvertent encroachment by crews and equipment to the surrounding beach area.	**Plan Review and Site Inspection**	**X**	**X**		**DBO Contractor**			
BIO-4	General Biological Avoidance Measures 3	Weir box access**.** Access from the public bike trail to the weir box will occur along the least disturbing route feasible. This will include keeping all personnel and equipment directly adjacent to or within the iceplant bordering the northern portion of beach.	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
BIO-5	General Biological Avoidance Measures 4	Personnel restrictions. Maintenance personnel will be prohibited from harming, harassing, or feeding wildlife and/or collecting special-status plant or wildlife species; bringing pets on the Action Area; littering on the Action Area; or exceeding normal daytime operational noise or nighttime lighting.	**Site Inspection**		**X**		**DBO Contractor**			
BIO-6	General Biological Avoidance Measures 5	Night-time Lighting restrictions. Night-time lighting shall be the minimum necessary for personnel safety and execution of maintenance activities shall they expend past standard working hours. Lighting shall directed/shielded downward to minimize lighting along the beach.	**Site Inspection**		**X**		**DBO Contractor**			
BIO-7	Avoidance Measures for Breeding Western Snowy Plover 1	Conduct pre-activity nesting bird surveys. If maintenance work must occur during the western snowy plover nesting season (March through August), the applicant shall have pre-Action nesting surveys conducted by a qualified biologist to determine whether active nests of this species are present in the Action Area or within 300 feet of the Action Area (buffer to be established in coordination with the USFWS). If active nests are found, repair and maintenance activities within 300 feet of the nest shall be postponed or halted, at the discretion of the biologist in consultation with CDFW and USFWS, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In addition, the maintenance worker access route to the weir box will be re-routed to avoid disrupting nesting behaviors.	**Survey Report and Site Inspection**	**X**	**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
		This new access route will be established in coordination with the USFWS. A biological monitor shall be present during those periods when Actions will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFW and USFWS.								
BIO-8	Avoidance Measures for Breeding Western Snowy Plover 2	Conduct biological activity monitoring during Actions. An authorized biological monitor must be present in the Action Area during all repair/maintenance activities. The monitor shall survey the activity site (i.e., weir box) and surrounding area for compliance with all avoidance measures. Weekly biological monitoring reports shall be prepared and submitted to the appropriate permitting and responsible agencies through the duration of the repair/maintenance activities. Monthly biological monitoring reports shall be prepared and submitted through the duration of maintenance activities to document compliance with avoidance measures.	**Survey Report and Site Inspection**	**X**	**X**		**DBO Contractor**			
BIO-9	Avoidance Measures for Wintering Snowy Plover 1	Conduct pre-activity bird surveys**.** Biological surveys for sensitive bird species will be conducted by an authorized biologist prior to weir box maintenance activities. If present, maintenance will be delayed until the sensitive bird species have vacated the work area.	**Survey Report and Site Inspection**	**X**	**X**		**DBO Contractor**			
BIO-10	Minimization of Effects to Snowy Plover Critical Habitat 1	Pre-activity evaluation**.** Prior to conducting maintenance activities, a habitat assessment and evaluation will be assessed and approved by an approved biologist. This measure will ensure that avoidance measures have been provided to ensure the avoidance of western snowy plovers.	**Survey Report and Site Inspection**	**X**	**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
BIO-11	Minimization of Effects to Snowy Plover Critical Habitat 2	Beach sand maintenance or replacement. During the Actions, all efforts will be made to not disturb sand substrates more than is required for access to the weir box and activities within the fenced work areas. During the Actions, beach sand paths uses to access the weir box will be maintained or piled and replaced after activities are completed. After the Actions are completed at the weir box, the disturbed sand (both around the weir box and paths used to access the work area) will be replaced. The replacement of sand will include raking and leveling the sand back to pre-activity condition or replacing any sand that was piled during work activities.	**Site Inspection**		**X**		**DBO Contractor**			
BIO-12	Avoidance of Nesting Birds under the Migratory Bird Treaty Act of 1918, 1	Pre-Action Nesting Bird Survey. A pre-Action survey for nesting birds should be conducted by a qualified biologist to determine if active nests of special-status birds, or common bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code, are present within 300 feet of the maintenance/repair zone. The survey should be conducted within one week prior to initiation of Actions that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March 1 through August 30).	**Survey Report and Site Inspection**	**X**	**X**		**DBO Contractor**			
BIO-13	Avoidance of Nesting Birds under the Migratory	Nesting Bird Buffers and Requirements. If active nests are found, a no activity buffer shall be established at a minimum of 100-foot (this distance may be greater depending on the bird species and activity, as determined by the biologist) around the nest site where it overlaps with	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
	Bird Treaty Act of 1918, 2	work areas. Activities within no-maintenance buffer shall be postponed or halted, at the discretion of the biologist, until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. In addition, all active nests shall be mapped with a GPS unit and nest locations with 100-foot buffers overlain on aerial photographs to provide regular updated maps to inform the Project manager/engineer and maintenance crew of areas to avoid. The City-appointed biologist should also serve as a compliance monitor during the breeding season to ensure that there are no inadvertent impacts to nesting birds.								
BIO-14	Avoidance of Indirect Biological Effects 1	Best Management Practices (BMPs). The Contractor will implement appropriate BMPs to control sediment, coarse particles, concrete, and other materials exposed during demolition and drilling to protect aquatic, wetland, and riparian habitats adjacent to construction site. Erosion control measures will be implemented to prevent runoff of these materials into Laguna Channel and El Estero Swale. Silt fencing, straw bales, and/or sand bags will be used in conjunction with other methods to prevent turbid waters from entering stream channels. During construction activities, washing of concrete, paint, or equipment shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Washing will not be allowed in locations where the tainted water could enter Laguna Channel or El Estero Swale.	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
BIO-15	Avoidance of Indirect Biological Effects 2	Wetland and Riparian Protection. All construction-related activities, including, but not limited to demolition, construction, staging area, and access routes will be located a minimum of 50-feet from riparian habitat associated with Laguna Channel and El Estero Swale, when possible. In locations where the construction activities encroach within this buffer, further protection to riparian vegetation and the wetland and aquatic habitats of Laguna Channel should be implemented. Specifically, these protection measures will include the following: a. The Contractor will establish a temporary barrier between riparian habitat using highly visible construction fencing to ensure that trees and other vegetation are visible during construction. It is recommended that the fencing be placed along the access road, just to the west of the curb. b. The Contractor will install road signs along the western access route that notify drivers of sizeable vehicles/construction equipment (cranes, drilling rigs, water and concrete trucks, etc.) that sensitive riparian trees and vegetation occur adjacent to the road and work site. c. When sizeable construction equipment is working near riparian vegetation, it is highly encouraged that flaggers are utilized to assist in equipment positioning to avoid	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
		riparian impacts during construction activities d. If direct impacts to riparian vegetation cannot be avoided, a CDFW Streambed Alteration Agreement (SAA) pursuant to Section 1600 et seq. of the California Fish and Game Code will be acquired before initiation of construction. This SAA will add additional costs and time, thus it is beneficial to the fast-paced track of this Project to avoid riparian vegetation. The SAA is further discussed in mitigation measure **BIO-5** (Streambed Alteration Agreement).								
BIO-16	Avoidance of Indirect Biological Effects 3	Workers Educational Training. Prior to the initiation of any site disturbance and/or construction activities, all personnel associated with the Projects will attend a worker education training program (program) conducted by a qualified biologist. In general, it is recommended that the program discuss tidewater goby and Western pond turtle habitat preference(s), occupied habitat in the area, life histories, law and regulations, as well as potential construction impacts and protection measures, and project limits. Protections and regulations for the Laguna Channel, the riparian habitat, and nesting birds will also be included in the program. It is recommended that a species and habitat fact sheet also be developed prior to the training program and distributed at the training program to all contractors, employers and other	**Pre-construction Training**	**X**			**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
		personnel involved with the construction of the Projects. Specifically, the program will also include: a. Measures to prevent indirect impacts during construction activities will be covered, including delivery, storage, and usage of construction materials and chemicals as they relate to the protection of adjacent aquatic habitat. b. Training materials will include laws and regulations that protect sensitive biological resources, the consequences of non-compliance with those laws and regulations and a contact person (i.e. construction manager, biological monitor, and City's Project manager) in the event that protected biological resources are affected. The City will notify the qualified biologist in advance of the kick-off meeting and any subsequent meetings that may take place if additional contractors are employed during additional construction projects of the project. A sign in sheet will be circulated for signatures to all personal that attend the workers educational training to confirm that program materials were received and that they understand information presented.								
BIO-17	Avoidance of Indirect Biological Effects 4	Compliance Monitoring. The City will retain a qualified biologist to monitor installation, operations, and compliance of recommended measures **BIO-3** (Best Management Practices [BMPs]) and **BIO-4** (Wetland and Riparian Protection).	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
Mitigation Monitoring and Reporting Program

MMRP Mitigation No.	Original Mitigation Identifier	Mitigation Measures	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
BIO-18	Requirements for any Direct Effects on Jurisdictional Waters 1	Streambed Alteration Agreement. The applicant will consult with the California Department of Fish and Wildlife (CDFW) to obtain a Streambed Alteration Agreement from the CDFW pursuant to Section 1600 et seq. of the California Fish and Game Code for any impacts associated with vegetation removal or bank disturbance (within top of bank) within or adjacent to Laguna Channel. The SAA will ensure reasonable measures are included to protect resources within the area of impact.	**Plan Review**	**X**			**DBO Contractor**			
BIO-19	Offshore Intake Facilities 1	The following measures apply to both initial construction of Reactivation Actions, as well as ongoing maintenance: 1. If possible, only clean the top rim and interior surfaces. This would allow the macrofouling community on the outer surfaces to continue to provide habitat for small fishes and invertebrates. 2. Remove any large slow-moving macroinvertebrates to the hard reef area adjacent to Intake B, where feasible. These would include sea urchins, sea cucumbers, sea stars, giant keyhole limpets, and large snails. 3. Cut and bag any large kelp plants to avoid the creation of large drift that could foul boat props. The bags could be moved to the surface and disposed of further offshore or at a landfill.	**Site Inspection**		**X**	**X**	**DBO Contractor**			

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Mitigation Monitoring and Reporting Program

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		4. Perform the kelp and macroinvertebrate removal activities using divers to allow fish to move out of the area before mechanical or pressure washing commences. 5. If the maintenance activities are conducted in early spring, the algal growth will be at a minimum and any recently settled spores will be removed before they begin growing. This will minimize the disturbance on other organisms that might be attracted to the structures due to the algal growth. 6. Potential anchoring locations should be sited to avoid the intact pipeline and as many as 17 pipe sections scattered on the seafloor, and located in sandy, soft-bottom areas, containing lower biodiversity and habitat value than hard substrate, based on the recommendations of the Santa Barbara Desalination Plant Reactivation Utility Work Boat Anchoring Locations Subtidal Biological Survey Report (Tenera 2014).								
BIO-20	Avoidance Measures for California Grunion Spawning 1	Pre-maintenance California grunion surveys conducted by a City-approved biologist shall be required during the nearest high tide (full or new moon) for three nights prior to the onset of on-shore maintenance during the spawning period for grunion (March through August). The survey area will include the beach directly around the weir box and a survey buffer of 100 feet to the north and south of the weir	**Survey Report and Site Inspection**	**X**			**DBO Contractor**			

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		box. If grunions are observed, maintenance shall not proceed (see BIO-12 and BIO-13, Bird Survey and Monitoring) until the next high tide series and after survey confirms that no spawning grunion are present (during high tide). a. If spawning grunions are observed in April through May, no on-shore maintenance activities shall be permitted in compliance with California Department of Fish and Wildlife regulations. b. If spawning grunion are observed June through August, maintenance may proceed after the next high tide series (approximately 10-14 days), if no additional spawning grunion are observed (see BIO-11, Night-time Lighting Restrictions, for survey requirements).								
BIO-21	Avoidance Measures for Marine Mammals 1	The maximum boat speed limit between Santa Barbara Harbor and the anchor sites shall be 5 mph (4.34 knots) for any boat used for repair and maintenance of the intakes, anchor sites, or any other component of the Charles Myers Desalination Plant. Within 24 hours of the commencement of repair and maintenance activities in the ocean, a City-approved qualified biologist shall monitor the ocean water between the Santa Barbara Harbor and approximately 300 feet south and west of the anchor sites from Stearns Wharf using a spotting scope and/or binoculars for the presence or absence of marine	**Site Inspection**		**X**		**DBO Contractor**			

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				Pre Const.	*During Const.*	*Post Cost.*		*Initials*	*Date*	
		mammal species. A second marine mammal survey shall be conducted within an hour of the boat departing from the harbor to the anchor sites. The biologist will record the location and abundance of all marine mammal species and report the findings to the City within an hour of observation. During all travel, as well as repair and maintenance activities, a City-approved biologist shall monitor all activities from Stearns Wharf to ensure no marine mammals are harassed. The biologist shall remain in radio or cell phone contact with the boat captain informing the captain of any marine mammals within the path of the boat or any marine mammals that may be approaching the boat on the port or starboard side. It is recommended that the boat remains a minimum of 25 feet distance from seals or sea lions in the water or on buoys during travel. NOAA Fisheries recommends a distance of 100 yards (300 feet) between boats and seals and sea lions on land or rocks. Divers shall not attempt interact with any marine mammals during maintenance operations. If a whales, dolphin, or porpoises are observed in the harbor and maintenance activities proceed, a City-approved biologist shall be present on the boat to observe whale location and behaviors, and ensure the boat maintains a 100 yard (300 foot) distance separation. If the whale exhibits any adverse behaviors (evasive or defensive), the biologist will direct the boat to decrease speed and change									

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		direction and increase distance from the whale until the whale has either left the area or until the distance is sufficient to reduce stress displayed by the whale.								
Cultural Resources										
1991 EIR Measures										
CUL-1	3.10-1	Due to the potential to encounter buried cultural resources, all contractors and construction personnel shall be alerted to the sensitivity of this area. If cultural features are exposed or suspected, work shall be promptly halted and a professional archaeologist and the Environmental Analyst will be consulted.	**Site Inspection**		**X**		**DBO Contractor**			
CUL-2	3.10-2	For any excavation to a depth greater than 2 feet below surface, an archaeological monitor shall be retained to identify any track remnants or associated deposits. The archaeological monitor shall be given the right to halt or redirect grading/ excavation for a period that would enable accurate recording of locational information	**Site Inspection**		**X**		**DBO Contractor**			
CUL-3	3.10-3	An archaeological monitor shall be retained during the excavation of the brine discharge line from a point 300 feet east of the intersection of the existing 48-inch sewage outfall line. The archaeological monitor shall be given the right to halt or redirect grading/ excavation for a period that would enable accurate recording of locational information.	**Site Inspection**		**X**		**DBO Contractor**			
CUL-4	3.10-4	Given the potential to encounter unrecorded offshore cultural resources, all contractors and construction personnel for the offshore construction components	**Site Inspection**		**X**		**DBO Contractor**			

Table 1
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		shall be alerted to the sensitivity of this area. If cultural features are exposed or suspected, work shall be promptly halted and a professional archaeologist and the Environmental Analyst will be consulted.								
CUL-5	APM	Project design shall consider locating facilities in areas of previous disturbance, and the use existing pipelines and other equipment to the extent practicable to avoid ground disturbance.	**Plan Review and Site Inspection**	**X**	**X**		**DBO Contractor**			
CUL-6	1	Due to the potential to encounter buried paleontological resources, all contractors and construction personnel shall be alerted to the potential for resources, and if paleontological features are exposed or suspected, work shall be promptly halted and a professional paleontologist and the Environmental Analyst will be consulted.	**Site Inspection**		**X**		**DBO Contractor**			
Reactivation Measures										
CUL-7	1	If human remains are unearthed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to Public Resources Code Section 5097.98.	**Site Inspection**		**X**		**DBO Contractor**			
Geology and Soils										
1991 EIR Measures										
GEO-1	3.2-1	Standard siltation control measures including control of offsite drainage and runoff are required at the sites during construction to minimize impacts related to earthwork.	Site Inspection		X		**DBO Contractor**			

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GEO-2	3.2-2	Particular attention shall be given to avoiding disturbance of the banks of Laguna Channel by stipulating that construction workers and activities stay outside of flagged setback areas adjacent to the eastern side of Laguna Channel to avoid bank erosion and/or sedimentation	Site Inspection		X		**DBO Contractor**			
GEO-3	3.2-3	The proposed project facilities shall be designed in accordance with the recommendations in the Geotechnical Study as well as for Seismic Zone IV recommendations in the UBC.	Plan Review	X			**DBO Contractor**			
GEO-4	APM	Design and construct all onshore and offshore facilities in accordance with applicable building codes (Seismic Zone IV), including consideration of seismic, liquefaction/ settlement, tsunami, and other geologic hazards, as appropriate.	Plan Review	X			**DBO Contractor**			
Hazards and Hazardous Materials										
1991 EIR Measures										
HAZ-1	APM	Design, construct, and operate project facilities in accordance with applicable regulations including Article 80 of the Uniform Fire Code; chemical feed lines will be double contained to reduce accidental release potential; chlorine will only be handled in dilute (0.3%) aqueous solutions to reduce hazard. Chemical storage areas will be constructed with specially treated concrete containment structures.	Plan Review and Site Inspection	X	X		**DBO Contractor**			

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Noise										
1991 EIR Measures										
NOI-1	3.5-1	Measures to further reduce noise levels at the eastern edge of the desalination plant site are required to reduce noise levels to at least the 70 Ldn level. These measures include locating the exhaust fans for each of the RO pump trailers at the western edge (versus eastern) of each trailer. The product pumps, air blowers and vacuum pumps shall be shielded so that noise levels of less than 80 dB (at 3 feet) are generated. These measures are predicted to reduce total Ldn noise levels at the edge of the site adjacent to the Santa Barbara Rescue Mission by 2 dB (from 72 to 70).	Plan Review	X			**DBO Contractor**			
NOI-2	3.5-2	Noise monitoring shall be conducted after start up of the desalination plant to assure that these levels are achieved and, if not, additional noise mitigation shall be implemented.	Site Inspection		X		**DBO Contractor**			
NOI-3	3.5-3	Required construction equipment noise-control measures include the use of mufflers, derating engines, sealing and lubricating tracks on bulldozers, isolating engine vibration, and adhering to a regular maintenance schedule in order to help reduce construction related noise levels.	Site Inspection		X		**DBO Contractor**			
1994 EIR Measures										
NOI-4	5.6-1	The City shall conduct 24-hour noise monitoring within a month after the start of the desalination plant with the second pass option equipment. The monitoring	Site Inspection		X		**DBO Contractor**			

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		shall be conducted along the western perimeter of the Santa Barbara Rescue Mission. If the noise level generated by the second pass equipment is above 70 L_{dn} modification for further mitigation will be required.								
Recreation										
1991 EIR Measures										
REC-1	3.9-1	All construction on the beach shall be required to take place during the off season (October through February), if possible.	Site Inspection		X		**DBO Contractor**			
REC-2	3.9-2	The excavation on the beach shall be enclosed within a fence for public safety reasons.	Site Inspection		X		**DBO Contractor**			
REC-3	3.9-3	When construction vehicles must cross the bikepath, flagmen shall be provided for the safety of pedestrians and bicyclists, and to minimize the disruption in use of the bikepath.	Site Inspection		X		**DBO Contractor**			
REC-4	3.9-4	The subsurface intake structure shall be marked with a standard lighted navigational buoy to alert boaters to the underwater obstruction.	Site Inspection		X		**DBO Contractor**			
Water Quality and Hydrology										
1991 EIR Measures										
WQ-1	3.3-1	The desalination plant and facilities shall be designed to withstand reasonable flood flows in accordance with City criteria.	Plan Review	X			**DBO Contractor**			
WQ-2	3.3-2	Appropriate emergency plans shall be developed to temporarily shut down the desalination plant and associated facilities in the event of a flood or similar emergency.	Plan Review	X			**DBO Contractor**			

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WQ-3	3.3-3	Sediment control measures shall be implemented, as necessary, during site preparation activities if runoff is occurring. Measures to be implemented, as warranted by conditions, include control of offsite drainage and filtering of drainage using hay bales, sediment traps, or other means.	Site Inspection		X		**DBO Contractor**			
WQ-4	3.3-4	Once estimates of dewatering requirements are available, appropriate handling and discharge plans shall be developed (if applicable), including consideration of water quality and quantities.	Site Inspection		X		**DBO Contractor**			
WQ-5	3.3-5	The City, shall, in conjunction with the RWQCB develop an appropriate monitoring program which will protect marine water quality and the environment. A baseline study shall be conducted prior to desalination plant start-up and quarterly marine water quality /biological monitoring shall be conducted in accordance with RWQCB requirements during the operational phase.	Site Inspection		X		**DBO Contractor**			
1994 EIR Measures										
WQ-6	5.5-1	Prior to distribution of desalinated water (other than small amounts which might result from short term operation for testing purposes), the City shall calculate the anticipated SAR and demonstrate that the water will not cause significant impact to vegetation, either on the basis of scientific information available at the time or by keeping the SAR at a level that is not significantly outside the range of SAR for other City water supplies. Testing of the water shall continue	Operational Compliance			X	**DBO Contractor**			

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		during the period of use to monitor the SAR level. Treatment to improve the SAR shall be carried out to the extent feasible and as allowed by regulatory agencies, in particular the State Department of Health Services, Office of Drinking Water. Additionally, the City shall publish/sponsor public education brochures and/or forums which address proper Irrigation practices to mitigate any potential adverse impacts to vegetation.								

ATTACHMENT A

California Coastal Commission
Coastal Development Permit Special Conditions

ATTACHMENT A
California Coastal Commission
Coastal Development Permit Special Conditions

1. **Other Approvals.** PRIOR TO PERMIT ISSUANCE, the Permittee shall provide to the Executive Director a copy of the following permits and approvals or evidence that the permits or approvals are not needed: (i) from the City of Santa Barbara, an approved coastal development permit or Substantial Compliance Determination; and, (b) from the Central Coast Regional Water Quality Control Board, an approved National Pollutant Discharge Elimination System ("NPDES") permit and Section 401 Water Quality Certification.

   In addition, and PRIOR TO STARTING CONSTRUCTION ACTIVITIES, the Permittee shall provide to the Executive Director a copy of the project's General Construction Activity Stormwater Permit as issued by the Regional Water Quality Control Board.

   The Permittee shall inform the Executive Director of any changes to the project required by these permits or approvals. Such changes shall not be incorporated into the project until the Permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

2. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the Permittee acknowledges and agrees:

   a. That the site may be subject to hazards from coastal erosion, storm conditions, wave uprush, and tsunami runup;

   b. To assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development;

   c. To unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and,

   d. To indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

3. **Anchoring Plan – Initial Repair and Maintenance Activities**. PRIOR TO THE START OF INWATER PROJECT ACTIVITIES, the Permittee shall submit, for Executive Director review and approval, a revised Offshore Anchoring Plan that is consistent with the submitted Utility Work Boat Anchoring Locations – Subtidal Biological Survey Report, dated September 30, 2014, but with the following modifications:

a. Clarify that offshore anchoring will be conducted at one location using a four-point anchoring system.

b. Incorporate results of a seafloor survey conducted no more than 60 days prior to Plan submittal.

c. Identify all areas of kelp, seagrasses, and hard substrate found within the survey area, including the bathymetric relief of all identified hard substrate. The Plan shall identify proposed anchor locations that will avoid kelp, seagrasses, and hard substrate and will avoid the possibility of dragging anchor lines or cables across those areas.

d. Identify the owner/operator of the active pipeline located within the anchor survey area and identify measures the Permittee will implement to contact the pipeline owner/operator prior to and during times the Permittee will be conducting offshore work.

If anchoring cannot avoid kelp, seagrasses, or hard substrate, or if the Permittee proposes to change the method of anchoring, it shall seek an amendment to this permit to address the changed conditions or methods. The Permittee shall implement the revised Offshore Anchoring Plan as approved by the Executive Director. Any proposed changes to the approved Plan, including those resulting from a use of different vessels or equipment than originally proposed, shall be reported to the Executive Director. No changes to the approved Plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

4. **Anchoring Plans – Ongoing Repair and Maintenance Activities**: At least 45 days prior to future offshore repair and maintenance activities that will involve anchoring, the Permittee shall submit, for Executive Director review and approval, an updated Anchoring Plan that includes measures consistent with those in the Anchoring Plan approved pursuant to **Special Condition 3**, but that has been modified to include updated information based on seafloor surveys conducted no more than 60 days prior to submittal of each updated Plan. The updated Plans shall include proposed anchoring locations that avoid kelp, seagrasses, and hard bottom substrate as identified during the most recent seafloor survey.

   If anchoring cannot avoid kelp, seagrasses, or hard substrate, or if the Permittee proposes to change the method of anchoring, it shall seek an amendment to this permit to address the changed conditions or methods. The Permittee shall implement the revised Offshore Anchoring Plan as approved by the Executive Director. Any proposed changes to the approved Plan, including those resulting from a use of different vessels or equipment than originally proposed, shall be reported to the Executive Director. No changes to the

approved Plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

5. **Turbidity Minimization and Monitoring**. PRIOR TO THE START OF INWATER ACTIVITIES, the Permittee shall submit, for Executive Director review and approval, a Turbidity Minimization and Monitoring Plan that includes the following:

    a. Names of qualified observers who will be present at the offshore project site to monitor for turbidity during repair and maintenance activities. The submittal shall include the qualifications each observer;

    b. Maximum allowable waste discharge and turbidity levels as provided by the California Ocean Plan and all measures the Permittee will implement to remain within those levels;

    c. The type of equipment to be used to conduct pressurized cleaning of offshore structures. Flow rates on any hydraulic pumping system shall be set as low as is practicable in order to minimize the generation of a suspended sediment plume during the disposal of dredged sediment; and,

    d. Identification of proposed nearby locations where discharged material will be deposited where it will not adversely affect hard substrate, kelp beds, or other sensitive habitat areas.

    The Permittee shall implement the Plan as approved by the Executive Director. Any proposed changes to the approved Plan, including those resulting from a use of different vessels or equipment than originally proposed, shall be reported to the Executive Director. No changes to the approved Plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

6. **Sensitive Marine Species Monitoring and Mitigation Plan**. PRIOR TO THE START OF INWATER ACTIVITIES, the Permittee shall submit, for Executive Director review and approval, a Sensitive Marine Species Monitoring Plan. At a minimum, the Plan shall include the following:

    a. Names of qualified biologists who will be present at the project site during all project activities. The submittal shall include the qualifications and proposed role of each biologist during monitoring activities. The selected biologists shall be able to identify the various marine mammals, sea turtle and special-status marine bird species that have the potential to occur in the project area, and will have knowledge of the ecology and behavior of these species.

b. Procedures to be followed and measures to be taken should marine mammals, sea turtles or special-status bird species be sited in the project area during active operations. At a minimum, the biological monitor shall be granted the authority to temporarily halt project activities if those activities pose a threat to individuals of a special-status species, and to suspend project activities until the animals have left the area.

c. Within 30 days of the last day of each offshore work period that require on board monitors, the Permittee shall submit to the Executive Director a marine wildlife monitoring report prepared by the approved monitors that includes: (i) an evaluation of the effectiveness of monitoring protocols and procedures; (ii) reporting of all marine mammal, sea turtle, and other wildlife sightings (including species and numbers); (iii) any wildlife behavioral changes that may be attributed to project operations; and (iv) all project changes (e.g., delays, work stoppages, etc.) due to the presence in the area of marine wildlife species.

Project work involving the movement or positioning of vessels offshore, use of heavy equipment onshore, and attachment or removal of project components shall occur during daylight hours only. Artificial lighting associated with this work shall be limited to headlamps or hand-held devices used by the divers, and necessary running or deck lights on diver support vessels. Night lighting of project vessels remaining on site shall be limited to that necessary to maintain navigational safety and to serve the nighttime site monitors who may be present on project vessels.

The Permittee shall implement the Plan as approved by the Executive Director. Any proposed changes to the approved Plan, including those resulting from a use of different vessels or equipment than originally proposed, shall be reported to the Executive Director. No changes to the approved Plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

7. **Hazardous Material Spill Prevention and Response.**

a. PRIOR TO STARTING PROJECT ACTIVITIES, the Permittee shall submit for Executive Director review and approval a project-specific Hazardous Materials Spill Prevention and Response Plan for all vessels and vehicles to be used for project activities. The Plan shall include:

- a list of all fuels and hazardous materials that will be used or might be used during the proposed project, together with Material Safety Data Sheets for each of these materials;

- specific protocols for monitoring and minimizing the use of fuel and hazardous materials during project operations, including Best Management Practices that will be implemented to ensure minimal impacts to the environment;
- an estimate of a reasonable worst case release of fuel or other hazardous materials on the project site or into coastal waters resulting from project repair or maintenance activities;
- all identified locations within the project footprint of known or suspected buried hazardous materials, including current or former pipelines, underground storage tanks, and the like;
- a list of all spill prevention and response equipment that will be maintained on-site;
- the designation of the onsite person who will have responsibility for implementing the plan;
- a detailed response and clean-up plan in the event of a spill or accidental discharge or release of fuel or hazardous materials; and,
- a telephone contact list of all regulatory and public trustee agencies, including Coastal Commission staff, having authority over the development and/or the project site and its resources to be notified in the event of a spill or material release.

The Permittee shall ensure that all onsite project personnel participate in a training program that describes the approved Plan, identifies the Plan's requirements for implementing Best Management Practices to prevent spills or releases, specifies the location of all clean-up materials and equipment available on site, and specifies the measures that are to be taken should a spill or release occur.

b. No less than 10 days prior to conducting offshore repair or maintenance activities, the Permittee shall notify the owner(s)/operator(s) of active pipelines within 500 feet of offshore project activities and shall identify the proposed type and timing of offshore work.

c. In the event that a spill or accidental discharge of fuel or hazardous materials occurs during project construction or operations, all non-essential project construction and/or operation shall cease and the Permittee shall implement spill response measures of the approved Plan, including notification of Commission staff. Project construction and/or operation shall not start again until authorized by Commission staff.

d. If project construction or operations result in a spill or accidental discharge that causes adverse effects to coastal water quality or other coastal resources, the Permittee shall submit an application to amend this permit, unless the Executive Director determines no amendment is required. The application shall identify proposed measures to prevent future spills or releases and shall include a proposed restoration plan for any coastal resources adversely affected by the spill or release.

   The Permittee shall implement the Plan as approved by the Executive Director. Any proposed changes to the approved Plan, including those resulting from a use of different vessels or equipment than originally proposed, shall be reported to the Executive Director. No changes to the approved Plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

8. **Protection of Onshore Avian Species.** PRIOR TO PERMIT ISSUANCE, the Permittee shall submit, for Executive Director review and approval, a Nest Survey Plan that includes the protocols described below and identifies measures to be implemented that will avoid and reduce project-related effects on breeding or nesting birds. One or more qualified biologists, approved by the Executive Director, shall prepare a Plan that provides, at a minimum:

   a. Prior to starting project-related activities between March I and September 1 of any year, the biologist(s) shall conduct at least two breeding behavior and nesting surveys for birds protected by the Fish and Game Code, the Migratory Bird Treaty Act, and any birds that are included on state or federal lists of threatened or endangered species. The first survey shall take place no more than 30 days before the start of construction activity. The second survey shall take place at least 10 days after the first survey and within 14 days of the start of construction. The surveys shall encompass all environmentally sensitive habitat areas, wetlands, and other areas of potential nesting habitat within 300 feet of project-related activities.

   b. Follow-up surveys are to be conducted by the approved biologist(s) if there is a period of construction inactivity of three weeks or more between March I and September I of any year.

   c. No project activities shall occur within 100 feet of an occupied nest. In addition, if occupied nests are identified in the survey area, the Permittee shall implement all measures necessary to ensure that noise levels resulting from project-related activity do not exceed 60 dB peak at the nest sites until the approved biologist(s) certifies that the nest is vacated, juveniles have fledged, left the area, and are no longer being fed by the parents, and there is no longer any evidence of a second

attempt at nesting. Project activities shall be postponed if available measures do not allow a reduction in noise levels to below 60 dB peak during the active nesting and fledging period.

d. The Plan shall specify that results of the breeding behavior and nesting surveys and the monitoring surveys will be provided to Coastal Commission staff upon request.

The Permittee shall undertake development in accordance with the approved Plan. Any proposed changes to the approved Plan shall be reported to the Executive Director. No changes to the approved Plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

9. **Protecting Public Access, Recreation, and Fishing in Coastal Waters.** At least 15 days prior to starting any inwater activities for project repair or maintenance, the Permittee shall provide to the Executive Director documentation showing that the Permittee has submitted to the U.S. Coast Guard information required for a Notice to Mariners describing the location and timing of expected inwater work.

10. **Visual Resources.** All lighting used for project activities shall be directed downward and away from offsite areas to the extent allowed pursuant to applicable human health and safety requirements.

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