

STATE COMMENT LETTERS

STATE OF CALIFORNIA—THE RESOURCES AGENCY

CALIFORNIA COASTAL COMMISSION45 FARMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5300
FAX (415) 904-5400**VIA FACSIMILE (714) 374-1648**

November 4, 2002

Mr. Ricky Ramos
City of Huntington Beach Planning Department
2000 Main Street
P.O. Box 190
Huntington Beach, CA 92648RE: Draft Environmental Impact Report: Poseidon Seawater Desalination Project, September
2002 - City of Huntington Beach (State Clearinghouse #2001051092)

Dear Mr. Ramos:

Thank you for the opportunity to comment on the above-referenced Draft Environmental Impact Report (DEIR). The proposed project would be built adjacent to the AES Huntington Beach Generating Station (HBGS) and would use water drawn in from the Pacific Ocean through the HBGS once-through cooling system as its source water to produce approximately 50 million gallons per day (mgd) of desalinated potable water for local and regional use.

The proposed project is located within the coastal zone and is primarily within the jurisdiction of the City of Huntington Beach's Local Coastal Plan (LCP). Additionally, the Coastal Commission has retained jurisdiction over portions of the proposed project that would affect coastal waters. The project, therefore, would require two Coastal Development Permits (CDPs) - one from the City for upland portions of the proposal and another from the Coastal Commission for portions affecting coastal waters. The entire proposal is also within the Coastal Commission's appeal jurisdiction; therefore, any appeal of the City's permit decision may be heard by the Commission.

The proposed project would be the largest desalination facility in the U.S., and would be the first to be built in California in over a decade. The proposal raises significant issues related to compliance with several local and state policies and regulations and therefore deserves a thorough review, first at the CEQA level and then during subsequent permit determinations. The comments below are focused primarily on issues related to conformity to the Coastal Act and the proposal's possible effects on coastal resources. Please note that these comments reflect our concerns and questions at this time in the EIR review, and that we will likely request additional or more detailed information during the CDP review process related to the proposal's conformity to the Coastal Act. These comments also provide a follow-up to the June 14, 2001 comments we provided regarding the "Notice of Preparation" for the EIR. Those comments requested that the DEIR address several significant areas of concern; however, in some cases, the information provided in the DEIR does not adequately respond to those comments.

a

*Coastal Commission staff comments on Huntington Beach Desalination Facility DEIR
November 4, 2002
Page 2 of 7*

General Comments:

1) *Water Quality and Marine Biological Impacts due to the Facility's Proposed Use of Ocean Water:*

The proposed project is located adjacent to the HBGS and is dependent on the electrical generating facility's use of ocean water for once-through cooling. The California Energy Commission recently approved an upgrade at HBGS through an expedited review process that allowed the applicant to delay some studies of potential impacts to coastal resources and identification of feasible mitigation measures until after the project was approved and the facility was operating. One of these studies was to determine the entrainment, impingement, and thermal impacts related to the facility's once-through ocean water cooling system. There is also an ongoing study to determine whether an interaction between the HBGS intake and the nearby Orange County Sanitation District discharge may be leading to local beach closures due to increased levels of bacterial contamination.

Results of the HBGS cooling system study are needed to identify impacts to water quality and marine organisms, and the feasible measures that would allow these impacts to be avoided, minimized, or otherwise mitigated. We will therefore likely need the results of this study as part of our review of the proposed facility's conformity to the Coastal Act. Additionally, the DEIR cites the City's LCP Policy 6.1.19, which states: "Prior to approval of any new or expanded seawater pumping facilities, require the provision of maximum feasible mitigation measures to minimize damage to marine organisms due to entrainment in accordance with State and Federal law." Pursuant to this policy, the study results should also be included in the EIR review.

Results of the studies mentioned above will likely answer several of the questions and comments below. In the interim, please respond to the comments based on currently available information, where possible.

- 1a) Applicable water quality standards: Section 4.3 of the DEIR describes the beneficial uses of the Pacific Ocean's nearshore waters as industrial service supply, navigation, contact and non-contact water recreation, commercial and sport fishing, wildlife habitat support, and others. The California Ocean Plan also describes a number of specific water quality objectives for marine water. The listed beneficial uses and objectives do not include drinking water or potable water supply.

Please provide an evaluation of whether the proposed project's use of ocean water for drinking will conform to state water quality standards, including the Ocean Plan, and whether such a proposal requires a change in the listed beneficial uses of ocean water or a change in discharge limits to ocean waters to protect those waters as a source of drinking water. Please also discuss the beneficial or adverse effects these types of changes these might have on those resources.

*Coastal Commission staff comments on Huntington Beach Desalination Facility DEIR
November 4, 2002
Page 3 of 7*

1b) **Facility operations:** Please describe the relationship between the HBGS facility and the desalination facility. For example, please describe whether the desalination facility will continue to operate during times HBGS is shut down for short-term or long-term maintenance, planned outages, or other reasons. If it will, please describe the desalination operations that would occur during these shutdowns, including a description of the facility's entrainment effects and the characteristics of its discharge, including thermal characteristics and concentrations of salinity and constituents as they compare to allowable NPDES permit limitations. This should also address the area of increased salinity around the discharge and its effect on water quality and marine organisms.

d

Also, please describe, if known, how adverse entrainment and discharge effects will be "partitioned" between the desalination facility and HBGS for purposes of NPDES permit compliance, determining mitigation requirements, etc., during times both facilities are operating as well as when just one is operating.

1c) **Modeling and analyses used:** The DEIR and its appendices include several analyses of the proposed project's effects on marine organisms and water quality. For example, the DEIR describes impacts to water quality and benthic areas due to salinity levels in the proposed project's discharges from the existing HBGS outfall. The "worst case" scenarios in these analyses are based on the desalination facility operating while only one of the four HBGS generating units is operating, and when there is no mixing of the discharge plume in the receiving water. The resulting analyses describe the salinity levels at various distances from the outfall as ranging from less than 10% to roughly 60% greater than the local mean seawater salinity (at 33.5 ppt). They also include maps showing the anticipated areas of higher salinity levels at various depths. These maps do not include a distance scale, but appear to show increased salinity in areas of the water column and benthic surface of from a few acres to several hundred acres during different conditions.

e

We are concerned that the "worst case" scenario used in the DEIR may not be the actual "worst case", and in fact, may understate adverse conditions that would occur during the normal course of operations. The actual "worst case" scenario is likely one in which the desalination facility operates while none of the HBGS generating units are operating. Therefore, the analyses of entrainment, impingement, thermal discharges, salinity changes, and others should be re-assessed based on the desalination facility operating when HBGS is not.

1d) **Mitigation measures:** The DEIR does not include identify mitigation measures available to avoid or minimize the impacts associated with entrainment, impingement, or thermal discharges. Results of the cooling water study mentioned above will likely be needed to complete this portion of the environmental review. There are a number of measures that could be considered, such as operational or structural changes to the intake to reduce water velocity and entrainment rates, changes to the outfall to either increase mixing and avoid salinity increases to the benthic community at the seafloor, and others.

f

*Coastal Commission staff comments on Huntington Beach Desalination Facility DEIR
November 4, 2002
Page 4 of 7*

1e) **Information from other desalination facilities:** Our June 14, 2001 comments on the NOP requested that the DEIR include a review of other similar desalination facilities to assess whether monitoring requirements at those facilities were adequate to identify project impacts and establish necessary mitigation measures, and whether similar or improved requirements would be appropriate for this proposed facility; however, the DEIR does not include this review. Please provide an evaluation of the known impacts associated with other existing desalination facilities, the measures taken to avoid, minimize or compensate for those impacts, the types of monitoring used to determine the impacts as well as the performance of the selected mitigation measures, and any contingency measures that are in place or have been required due to the identified impacts.

g

2) **Energy Demand:**

Our NOP comment letter requested that the DEIR address the energy requirements of the proposed facility, including the effects of its energy demand on local and regional energy supplies and measures available that would minimize energy use, and that these analyses be done using a reasonable range of possible energy prices. The DEIR states that the desalination facility would use approximately 30 to 35 megawatts (MW) per hour, or about 720 to 840 MW per day, and that it would attempt to use off-peak power when practicable, but does not include any additional analysis on energy use.

h

Please describe the effects of the desalination facility on local and regional energy supplies during times of typical electrical demand as well as during peak demand times. Please also describe the effects of this significant base load demand (assuming the facility would operate continuously, or nearly so) on the local and regional energy capacity. This should include an analysis for the facility's energy demands when the HBGS units are shut down for short-term or long-term maintenance.

3) **Site and Facility Hazards:**

The DEIR states that the project objectives include providing a reliable source of potable water for the area. The proposed project site, however, is located in a seismically active area with very high liquefaction potential, and is designated as being prone to flooding. Recognizing the benefit to the applicant of siting the proposed facility where it can use an existing intake and outfall system, we are still concerned that locating the facility in a site with these hazards may not meet the desired objective of providing a reliable source of water during emergencies.

i

3a) **Seismic Activity and Liquefaction:** The site is described as being subject to high levels of seismic activity and ground shaking, and as having a very high potential for liquefaction. The DEIR states that a geotechnical report has not yet been prepared, but that one will be required as part of the building permit application. This report is likely to include recommended mitigation measures necessary to protect the facility from seismic activity. Recommended mitigation measure GEO-7 (at page 4.2-13), for example, states that the project will comply with the Uniform Building Code standards on seismic safety, but also states that more stringent measures may be required due to the site's location near two faults.

*Coastal Commission staff comments on Huntington Beach Desalination Facility DEIR
November 4, 2002
Page 5 of 7*

Please describe what additional mitigation measures would be required to ensure the facility's safety during the anticipated level of earth shaking, based on measures that may have been required at other similar facilities that have been built nearby, and any adverse effects those measures are likely to have – for example, will facility construction require larger or deeper excavations, and therefore require treatment of higher volumes of contaminated groundwater, or will the facility require a larger amount of paved surface and therefore additional stormwater treatment?

i

3b) Flooding: The DEIR states that the site is subject to flooding and that additional hydrologic analysis will be needed to determine if the site drains adequately. This analysis would clearly influence the appropriateness of the site for the proposed development. Please provide currently available information about the types and frequency of flooding or high water at and near the site and the types of analysis anticipated to be done. Please also describe the types of mitigation measures that would likely be necessary to prevent flood or high-water related impacts.

j

Additionally, the DEIR states that the Orange County Flood Control District will be placing sheet-piles along the flood control channel adjacent to the proposed project site. Please describe the purpose of this project, their relationship to the proposed development, the impacts they are meant to address, and the mitigation measures that may be needed as a result of these sheet-piles, especially as they relate to the proposed project and its site.

k

4) *Alternatives Analysis:*

The DEIR's discussion of alternatives presents several options for alternative sites, desalination methods, or different locations of various elements of the proposed project; however, it does not evaluate possible alternative sources of water that might be available to meet all or most of the project objectives. The current proposed source of water may involve significant adverse impacts to marine organisms and water quality, and there are likely other water sources available that would result in no impacts to these coastal resources, and fewer impacts overall.

Subsequent environmental documents should evaluate the availability of all water supplies in the region against demand to document the shortage and/or surplus in the various areas and how this proposed project would affect that balance. Section 3.5 of the DEIR discusses some of the local and regional water demands and supplies, but does not adequately discuss other sources of water, such as groundwater, reclaimed water, or conservation that may be available throughout the region to be served, and whose use could result in fewer adverse impacts to coastal resources. For example, it states that the "Southern California Integrated Water Resources Plan" has identified 80 projects providing over 150,000 AF/year to the region and another set of projects with the potential to provide as much as 800,000 AF/year. The proposed desalination facility would produce about 150,000 AF/year, but would result in impacts to ocean water quality and marine resources not likely to occur with the other projects identified above. The DEIR should compare the benefits and effects of projects such as those in the above-referenced plan with the benefits and effects of the proposed desalination facility.

l

*Coastal Commission staff comments on Huntington Beach Desalination Facility DEIR
November 4, 2002
Page 6 of 7*

5) Growth-inducing Impacts:

Our comments on the NOP requested that the EIR include a thorough examination of growth-inducing impacts. The NOP stated that the proposed project was "intended to supplement existing Orange County water supplies and is not intended to foster additional growth or accelerate growth. However, depending on the ultimate destination of the project's water supply, provision of additional potable water may lead to growth-inducing impacts."

The purpose or scope of the proposed project has apparently changed. The DEIR states that the desalination water made through the project will be available throughout the South Coast Hydrologic Region, which stretches from northern Ventura County to San Diego. The DEIR also reiterates the statement in the NOP that the facility may or may not induce growth, depending in part on its final end-users.

For purposes of both CEQA and conformity to the Coastal Act, subsequent environmental documents should provide additional specific information about the proposal's possible growth-inducing impacts. For purposes of determining conformity to the Coastal Act, we are particularly interested in those impacts in coastal areas. For example, please provide information about how water produced at the desalination facility will be allocated to various water purveyors, or if that has not yet been determined, how those decisions will be made. Also, please identify, if known, how the water supply provided to various purveyors will be tied to approved growth-related plans in the various service areas – for example, will allocations be limited in some way depending on the plans in place?; what degree of public review and oversight will be available for both the facility's operations and the allocation decisions?; etc.

III

6) Cumulative Impacts:

The proposed project would contribute to cumulative impacts at both a relatively localized level as well as a regional level. Regional cumulative impacts are likely to be associated primarily with issues related to growth-inducement, and project alternatives, and may also be associated with water quality, marine biology, and energy impacts.

Regarding cumulative impacts related to growth, the analysis provided in the DEIR is limited to possible impacts in the City and in south Orange County. All but two of the projects listed in the DEIR as possibly contributing to the cumulative impacts of the proposed facility are within one mile of from the facility site. This is clearly inadequate when the proposed facility is anticipated to affect water use throughout the South Coast Hydrologic Region. While we do not believe the DEIR needs to evaluate the potential cumulative impacts of all anticipated projects in the entire region, it should at least assess the cumulative impacts of those projects known to or anticipated to benefit from the increased supply of water, including those that may be some distance from the proposed facility. Additionally, and pursuant to the CEQA Guidelines related to cumulative impact analyses, it should base its analysis on the growth projections in the general plans of those jurisdictions that may be affected by this water supply, and should evaluate feasible options for mitigating these impacts in the affected region. The DEIR states (on page 5-9) that potential cumulative impacts are not being quantified or evaluated because such

II

*Coastal Commission staff comments on Huntington Beach Desalination Facility DEIR
November 4, 2002
Page 7 of 7*

an exercise would be "speculative"; however, it is reasonable and necessary to expect the environmental review for this proposed project to include an evaluation of these impacts and potential mitigation measures based on information in these locally adopted plans. These plans are perhaps as equally "speculative" as an evaluation of cumulative impacts, but they still provide the basis for other similar CEQA-level reviews and permit decisions.

II

Regarding cumulative impacts associated with project alternatives, please provide an evaluation of the cumulative impacts associated with any alternative sources of water that may be available (per our comments in the Alternatives Analysis section above). For example, if there are sources of water other than ocean water drawn from the HBGS facility that may feasibly supply potable water for the region, the subsequent environmental document should assess the cumulative impacts of those sources compared with this proposed facility.

O

Specific Comments: These comments address specific statements in the DEIR.

7) Section 3.5, p. 3-23, Table 3-2: This table shows a recent and an anticipated water budget for the South Coast region for both average and drought years. However, it shows that use during the drought years was generally higher than during average years. Please correct or explain.

P

8) Section 4.3, p. 4.3-12: The DEIR states that salinity modeling is based on a local mean seawater salinity level of 33.5 ppt. Please identify how much this levels varies and how that variation affects the results of the various modeling efforts.

Q

9) Section 4.3, p. 4.3-18 and 19: This section describes some of the cleaning compounds that may be used at the desalination facility. Table 4.3-2 shows the total discharge of cleaning compounds to be approximately 91,000 gallons, while the text below states that a typical day's cleaning solution would be in the range of 200,000 to 300,000 gallons. Please correct or explain.

R

Thank you again for this opportunity to comment. Please contact me at (415) 904-5248 or tluster@coastal.ca.gov if you have questions or would like additional information.

S

Sincerely,



Tom Luster
Environmental Analyst

Cc: Poseidon Resources – Andy Shea
State Clearinghouse
Coastal Commission, Long Beach Office – Steve Rynas
Santa Ana Regional Water Quality Control Board – Mark Adelson

Response No. 2

California Coastal Commission
Tom Luster, Environmental Analyst

- 2a. These paragraphs provide an introduction to the agency's comments and summarize the project description. No response is necessary.
- 2b. As stated in Response 1o, above, project implementation would not result in an increase in the entrainment, entrapment, or impingement of marine organisms. Current AES intake operations would remain unchanged. In addition, thermal impacts will not occur, as the reverse osmosis process would not involve the heating or cooling of circulated ocean water. As such, the pending entrainment/entrapment study required by the California Energy Commission is not applicable to the proposed project.
- 2c. This project does not require that the Pacific Ocean in the vicinity of the intake be designated as supporting the beneficial use of drinking water (MUN). The Sources of Drinking Water Policy, adopted by the State Water Resources Control Board in 1988, requires that all waters of the state, with certain exceptions, be protected as existing or potential sources of municipal and domestic supply. One of the exceptions is water with a total dissolved solids (TDS) concentration exceeding 3,000 mg/L, which is applicable to the Pacific Ocean. The MUN designation affords some additional chemical protection of a waterway because maximum contaminant levels (MCLs) are to be achieved in ambient waters. There is no additional protection provided for microbial contaminants because MCLs have not been established for pathogens or coliforms.

The Pacific Ocean in the vicinity of the intake is high quality and, in fact, has concentrations of some chemicals that are far below the drinking water MCLs prior to any treatment. An MUN designation would not provide any additional protection because the intake water quality is not influenced by storm water discharges, the Santa Ana River, the Talbert Marsh, or the Orange County Sanitation District (OCSD) wastewater discharge, as described in the hydrologic modeling studies included in the Draft EIR Appendix (Appendices C and D). Requiring these discharges to meet MCLs in ambient waters would provide no improvement in water quality at the intake to the desalination plant.

The treated water from the Poseidon Desalination Plant will be required to meet all drinking water standards in Title 22 of the California Code of Regulations. As described in the Watershed Sanitary Survey Report (Draft EIR, Appendix E) and in the Draft EIR (pp. 4.6-11 through 4.6-17), the plant will have multiple treatment processes, including reverse osmosis membranes, and will be capable of meeting all of the drinking water standards.

The applicant will be required to obtain a drinking water permit from the California Department of Health Services that will address monitoring of source water quality (intake supplies). The desalination plant intake water quality in terms of turbidity (which is a surrogate indicator for potential elevated pathogen content) and salinity will be measured automatically and monitored continuously at the desalination plant intake facilities. Instrumentation for continuous monitoring and recording of these parameters will be installed at the desalination plant intake pump station. In event of excessive increase in intake seawater turbidity and/or salinity, this instrumentation will trigger alarms that will notify desalination plant staff. If the intake turbidity and salinity reaches a preset maximum level, this instrumentation will automatically trigger plant shutdown

procedures. In addition to the automation provisions, turbidity and salinity will also be measured manually by the desalination staff at least once a day and the intake seawater will be analyzed for pathogen content at least once per week. In the event of elevated intake seawater turbidity, laboratory pathogen content analysis will be performed more frequently.

In addition to the intake water quality monitoring instrumentation, the desalination plant pretreatment filtration facilities will be equipped with filter effluent turbidimeters and particle counters. This equipment will allow to continuously monitor pretreatment filter performance and to trigger adjustments of desalination plant operations to accommodate intake water quality changes.

- 2d. The desalination plant will use a portion of seawater discharged by the power plant. The desalination plant will not have separate ocean water intake or discharge outfalls. The desalination plant intake piping will be directly connected to the power plant discharge facilities and will only collect seawater that has already been screened and pumped through the power plant intake facilities, thereby avoiding additional entrainment and entrapment effects.

Currently, the power plant is permitted to operate at full capacity and to use up to 514 mgd of seawater 24 hours per day, and 365 days per year. The operation of the desalination plant will not result in any changes to the permit, to the operational schedule, or in the maximum intake flowrate.

The existing power plant cooling system has provisions that allow the intake seawater to bypass the power plant condensers when they are shut down and to circulate seawater through the power plant discharge outfall even when the power generation units are not operational. Under temporary power plant shutdown conditions, the power plant will run a minimum of two intake pumps with a total capacity of 126 mgd in a condenser bypass mode, which will deliver an adequate amount of water for production of potable water and for dilution of the desalination plant concentrate prior to the discharge of the blended water to the ocean. Therefore, the worst case scenario of desalination plant discharge used for assessment of the environmental impact of the desalination plant discharge in the Draft EIR is a condition under which only two (total of eight available) power plant pumps are operational and are delivering seawater to the power plant discharge/desalination plant intake. In the very unlikely event that all power plant intake pumps are not functional, the desalination plant will not be operational because seawater will not be available in the power plant discharge/desalination plant intake.

A review of the operational history of existing power plants indicates that during periods of long-term shutdown, unexpected or forced outages, or emergencies, at least two power plant intake pumps have always been functional and available. Therefore, the desalination plant is expected to be operational during periods of temporary power plant shutdowns. During a power plant intake pump condenser bypass mode of operation, the seawater desalination plant will treat seawater at ambient temperature. The desalination plant will be flexibly designed to process seawater of both ambient and elevated temperature.

If the power plant operation is permanently discontinued in the future, the desalination project proposes to use the existing power plant intake and discharge facilities and pump stations. Under these conditions the seawater intake flowrate and associated entrainment effects will be well within the limits defined in the current power plant permits. In fact, desalination plant operations under the conditions of temporary or long

term power plant shutdown or decommissioning will result in a reduction of the existing intake entrainment effects as compared to times that the power plant is operating with more than two intake pumps (over 126 mgd).

- 2e. Operation of the desalination plant without power production from the AES power plant would be the equivalent of the worst-case scenario evaluated in the Draft EIR and the supporting reports included in Draft EIR Appendices C and D, absent the heat effluent from power generation. This would lead to a slightly denser combined effluent, but with salinities no higher than those already considered in the worst-case analysis. The specific volume of the combined effluent would change from -0.01592 as reported in the DEIR study with power generation heat loads, to -0.01799 without any such heat loading. This heavier effluent will sink faster through the water column, reducing the salinity increase formerly calculated in the water column and increasing the saline footprint on the seabed. The principles of dynamic similitude applied in the Draft EIR analysis give the following conclusions regarding the dispersion of sea salts in the absence of heat loading from power generation (also refer to Response 7h, below):

It should be noted that changes to the salinity field of receiving waters will remain within the natural range of variability (10 percent), even for protracted worst month conditions having a recurrence probability of 0.27 percent to 0.64 percent. In addition, the maximum impacts on the seafloor remain in the immediate neighborhood of the outfall tower. The benthic area surrounding the outfall that experienced a 10 percent increase in salinity will increase from 15.6 acres as reported in the DEIR for worst month conditions to 17.9 acres. The pelagic area surrounding the outfall that experienced a 10 percent increase in salinity will decrease from 18.3 acres as reported in the DEIR for worst month conditions to 13.9 acres. In the water column, pelagic drifting organisms would be subjected to 10 percent increases in salinity for no more than 1.6 hours under worst-case conditions, and 20 minutes under average conditions. The minimum saline dilution 1000 feet from the outfall in any direction would be nine to one for worst-case conditions, and 19 to one for average conditions.

Thus, the shut down of power generation activities at the AES Power Plant would slightly diminish the saline impacts of the desalination plant in the water column (pelagic environment) while slightly increasing the saline impacts on the seabed (benthic environment). However, these slight variances do not alter the conclusion reported in the Draft EIR that impacts to the local marine environment will be less than significant.

- 2f. Refer to Response 2b, above, for a discussion of entrainment, entrapment, impingement, and thermal impacts. In addition, no structural changes to the existing AES intake or outfall would occur as a result of project implementation. Operational changes (in the form of increased salinity and potential discharge of stormwater and reverse osmosis membrane washwater through the AES outfall) have been analyzed and impacts are anticipated to be less than significant.
- 2g. An extensive analysis and comparison of potential impacts and mitigation measures from similar desalination facilities, while perhaps offering some perspective, is not necessary to adequately address the project's impacts under CEQA. In addition, cumulative impacts of the project have been analyzed within the Draft EIR within Section 5.0, *LONG-TERM IMPLICATIONS*.
- 2h. An analysis of the proposed project's electricity consumption was provided within Section 4.6, *PUBLIC SERVICES AND UTILITIES*, of the Draft EIR. The facility may

utilize off-peak power to the maximum extent practicable by temporarily halting the production of potable water from the facility and instead pumping product water from the on-site product water storage tank. Electrical power generating plants are distributed throughout the State, and the project's electrical demand would be met by dozens of power plants connected to a regional power supply source, with many of those plants located outside of Southern California. No mitigation measures are necessary in this regard.

- 2i. Since the circulation of the Draft EIR, a site-specific preliminary seismic assessment was prepared for the proposed subject site and the two optional aboveground storage tank sites ("North" and "West"). This assessment, contained in Appendix A of the Responses to Comments, concluded that the risk for surface faulting at the site is a "relative minimum", while seismic activity from numerous faults within the vicinity, including the Newport Inglewood Fault Zone (the closest active fault), may result in liquefaction in soils at depths of seven to 16 feet below ground surface (bgs). Soils below that depth were not found to be susceptible to liquefaction. Soil layers susceptible to liquefaction were not determined to be continuous throughout the proposed desalination plant site and the "North" and "West" tank sites. Liquefied soils may experience post-liquefaction settlements of four to five inches. As detailed design features of the project have not yet been determined, measures to mitigate potential geologic hazards as recommended within the preliminary seismic assessment will be developed as part of final design. A construction-level geotechnical report will be prepared as grading and design plans are developed. This report will include mitigation measures regarding grading, foundations, retaining walls, streets, utilities, remedial work, overexcavation/recompaction, dewatering, water quality, and chemical/fill properties of underground items including buried pipe and concrete and protection thereof. The report shall also specifically address lateral spreading, flood control channel bank stability, liquefaction potential and groundwater constraints. Also refer to Response 16d, below.
- 2j. As stated within Section 4.3, *HYDROLOGY AND WATER QUALITY*, of the Draft EIR, additional site-specific hydrology and hydraulic analysis will be performed to ensure that appropriate measures are incorporated into site design to mitigate potential storm water drainage and flooding impacts. This analysis and development of design measures will occur during the design phase of the proposed project and site design will be subject to approval by the City of Huntington Beach Department of Public Works as part of the permit approval process.
- 2k. A description of proposed Orange County Flood Control District (OCFCD) improvements to a segment of the Huntington Beach Channel is provided within Section 4.3, *HYDROLOGY AND WATER QUALITY* (page 4.3-2), and Section 4.9, *CONSTRUCTION RELATED IMPACTS* (page 4.9-17) of the Draft EIR. The OCFCD channel improvement project is independent of the proposed desalination project and unrelated except for the fact that the proposed project will benefit from increased flood control protection when the OCFCD project is completed. No mitigation measures are needed as a result of the OCFCD project.
- 2l. Pursuant to CEQA Guidelines section 15126.6(a), an EIR shall describe a range of reasonable alternatives *to the project*. According to the Draft EIR, (Section 3, *PROJECT DESCRIPTION*, page 3-8) "the proposed project consists of construction of a seawater desalination plant, storage facilities, and pipelines to produce drinking water for delivery into the regional water distribution system to meet the needs of the Southern California Region and particularly Orange County." The comment does not discuss the main component of the project (construction of a seawater desalination plant) and, focusing

on the drinking water production aspect of the project, suggests that the EIR “evaluate possible alternative sources of water that might be available” to meet the drinking water needs of Orange County and the region.

As directed in CEQA Guidelines section 15126.6(c), an EIR shall include alternatives to the project that could feasibly accomplish most of the basic objectives of the project. Although an objective of the project is to provide a reliable local source of drinking water to Orange County and the surrounding region, most of the project objectives emphasize development of a drinking water source that is “independent of,” “decreases pressures on” and “minimizes demands on” existing drinking water supplies (*i.e.*, imported water supplies and local groundwater supplies). (See the list of project objectives on page 6-1 of the Draft EIR.) “Comments are most helpful when they suggest additional specific alternatives,” as stated in CEQA Guidelines section 15204(a). Except for desalinated seawater, the lead agency is not aware of (and the comment does not identify) any “other water sources” that do not fall into the categories of either “imported water” or “local groundwater.” For example, water reuse projects are dependent on existing water supplies because, by their very nature, they “recycle” existing imported or local groundwater supplies. In addition, water reuse projects do not directly produce potable/drinking water. Consequently, there are no feasible “other water sources” to evaluate that meet the objective of the project.

As directed in CEQA Guidelines section 15126.6(c), an EIR shall include alternatives to the project that could avoid or substantially lessen one or more of the significant effects. The Draft EIR notes (on page 6-1) that with the exception of short-term air quality emissions associated with construction activities, “all potentially significant impacts” (which includes potential impacts to marine organisms and water quality) can be “mitigated to less than significant levels.” Therefore, it is not anticipated that any alternative water source (assuming there is one) will avoid or substantially lessen significant impacts when compared to the project.

The comment suggests that “subsequent environmental documents” should evaluate various factors related to the availability of water supplies in the region. Because that aspect of the comment does not address the sufficiency of this Draft EIR for the Poseidon Seawater Desalination Project, no further response is necessary.

Several factors regarding the availability of water supplies in the region have been reported since the start of the public review period of the Draft EIR. The Orange County Water District (OCWD) has identified the overdraft of the Santa Ana River Groundwater Basin by more than 400,000 acre-feet due to drought conditions of the last three years². The project could serve, for example, to offset withdrawals from the groundwater basin during dry years (allowing it to recharge) and to offset the need for imported water in wetter years. For further information about the availability of water supplies in the region, reference is made to the Metropolitan Water District’s (MWD) Integrated Resource Plan and the current situation with the reduction of Metropolitan’s Colorado River allocation. Metropolitan’s December 10, 2002 Board documents contain an approval of further support of increasing the volume of desalinated water to manage potential supply shortfalls and drought conditions. Finally, it should be noted that MWD established its Local Resources Program (LRP) to encourage the development of local programs for water conservation, recycling, desalination and storage to establish a diversity of approaches to improve regional supply reliability. The program is also intended to assist in the management of drought conditions as well.

² “O.C. Sees Cheap Water Era Ending”, Orange County Register, September 29, 2002.

The comment suggests that Section 3.5 of the DEIR does not “adequately discuss other sources of water.” Section 3.5 is the portion of the *PROJECT DESCRIPTION* that sets forth the “need” for the project and the project objectives. While a statement of objectives is required as part of the project description section of an EIR³, the information regarding the “need” for the project (Draft EIR at pages 3-20 through 3-23) was simply included as supplemental background information relating to water supply availability in Orange County and the region. On page 3-23 the Draft EIR reproduces a table created by the California Department of Water Resources (DWR, the governmental agency in California that has statutory responsibility with respect to water supplies). The table summarizes the projected availability of surface water, groundwater and recycled water supplies. The table projects a water supply shortage of 944,000 acre-feet for the South Coast Region in 2020.

Finally, the comment suggests that the benefits and effects of the proposed project should be compared with water supply projects “such as” the 80 projects referenced in the “Southern California Integrated Water Resource Plan” (IRP). As stated in the Draft EIR at page 3-22, the IRP was adopted in 1996 by the Metropolitan Water District of Southern California (MWD), the major imported water supplier in the region. As described in the Draft EIR, each of the “80 projects” referred to by the comment were existing water recycling projects. The Draft EIR (on page 3-21) further describes the difference between the proposed project and water recycling projects. Water recycling consists of the “reclamation of wastewater to produce water that is safe and acceptable for various non-potable uses, but not approved for direct use drinking and other domestic uses.” The proposed project will produce water that is approved for direct use drinking and for other potable uses. A comparison of two different supplies with different objectives is not required. It should also be noted that the proposed project will only produce approximately 56,000 acre-feet per year of potable water supply (not 150,000 acre-feet per year as stated in the comment).

- 2m. The examination of the project’s potential growth-inducing impacts is contained in Section 5.2 (pages 5-2 through 5-6) of the Draft EIR. As stated in the Draft EIR, the proposed project consists of construction of a seawater desalination plant, storage facilities, and pipelines to produce drinking water for delivery into the regional water distribution system to meet the needs of the Southern California Region and particularly Orange County. It should be noted that the project will sell water on a wholesale basis to water agencies who in turn will sell the water to customers at retail prices. The project does not propose to sell water at a retail level nor is it allowed to by law. At page 3-20, the Draft EIR explains in some detail how the water produced by the proposed seawater desalination facility will be delivered into the regional distribution system operated by the Metropolitan Water District of Southern California (MWD). The regional system operated by MWD serves Orange County and most of the South Coast Hydrologic Region. The analysis of potential growth-inducing impacts recognized that water supplies are typically allocated on an aggregate basis and, consequently, potential impacts in both the South Coast Region and in Orange County were examined. The Draft EIR (on page 5-6) concludes that the potential growth-inducing impacts of the project are not anticipated to be significant. This comment first suggests that “subsequent environmental documents” should also evaluate possible growth-inducing impacts. Because the comment does not address the sufficiency of this Draft EIR for the Poseidon Seawater Desalination Project, no further response is necessary.

³ CEQA Guidelines Section 15124[b].

The comment requests information (to the extent that information is known) regarding the potential allocation of the project's desalinated water supply by various water agencies. It is beyond the scope of this EIR to specifically address how local water agencies will allocate the desalinated water supply produced by this project. By way of response, however, it should be noted that in Section 5.2, the Draft EIR referenced several water supply plans and provided an analysis for certain allocation scenarios. Based on projections provided by the Department of Water Resources (DWR), the Draft EIR concluded (on page 5-6) that it is likely that much of the desalinated water supply produced by this project will be allocated to replace existing imported water supplies that are lost to increased environmental restrictions and water supply regulations. Still, the Draft EIR also provided an analysis (on page 5-5) that assumed all of the water produced by the desalination plant would be allocated by local water agencies as supplemental supply to support new growth. The calculations in the Draft EIR show that the total amount of water projected to be produced by the desalination plant would equal less than one percent of the total supply for the South Coast Region and less than eight percent of the total supply for Orange County. Consequently, the project results in only a nominal addition to regional supplies. Moreover, as noted on page 5-5, even if all of the project water was only allocated within Orange County, the project could not supply enough water to keep pace with long-term projected population growth. The Draft EIR (on page 5-6) concludes that the potential growth-inducing impacts of the project are not anticipated to be significant.

- 2n. The examination of the cumulative impacts associated with the proposed project is found in Section 5.3 of the Draft EIR (on pages 5-6 through 5-12). For the analysis of regional cumulative impacts, the Draft EIR uses summaries of projections contained in relevant planning documents. Since the project will deliver water to water agencies who are directly or indirectly affiliated with Metropolitan Water District of Southern California (MWD) members, such as Municipal Water District of Orange County (MWDOC), the water demand and use is governed by MWD policies, its Integrated Resource Plan and area government growth plans. For the analysis of local (and particularly construction related) cumulative impacts, the Draft EIR uses a list of past, present, and probable future impacts.

The comment raises a concern with the geographic scope of the cumulative impact analysis, and indicates confusion with respect to the regional area included in the cumulative impact analysis. To avoid further confusion regarding the geographic scope of the cumulative impact analysis, the second sentence in the paragraph entitled "Geographic Scope of Cumulative Impact Assessment" (Draft EIR on page 5-7) has been revised as shown in Section 3.0, *ERRATA*. The analysis of growth inducing impacts and cumulative impacts related to growth was not limited to the City Huntington Beach and south Orange County, but was expanded to include the entire South Coast Region. See Response 2m for further explanation of how the allocation/growth analysis was approached in the Draft EIR.

The analysis of potential regional cumulative impacts in the Draft EIR was based on regional growth projections as translated into water supply needs by the Department of Water Resources (Draft EIR on pages 5-5 and 5-6). As suggested by CEQA Guidelines section 15130(b)(1)(B), the Draft EIR (on page 5-9) referenced and relied on "planning documents" related to water supplies and proposed seawater desalination plants. As clarified in the Draft EIR (on page 5-7), possible regional cumulative impacts related to growth could not be evaluated on a jurisdiction-by-jurisdiction basis (by referencing any specific jurisdiction's general plan) because "the project's water has not been allocated to any specific project." Moreover, the amount of water supplied by this project

(approximately 56,000 acre feet) does not offset the projected “average year” shortage in year 2020 of 944,000 acre feet.

The “list of past, present, and probable future projects” method was used in the Draft EIR to identify and analyze potential cumulative impacts, particularly potential cumulative impacts related to construction.⁴ To complete this analysis, it was proper to list nearby projects in the City of Huntington Beach that are, or would be, under construction at the same time that construction of the desalination plant was proposed, particularly for construction-related impacts at the plant. Use of either (or both) cumulative impact analysis methods is encouraged by the CEQA Guidelines.

- 2o. For the reasons explained in the Response 2i, the Draft EIR need not address “alternative water sources” as an alternative to the proposed project.
- 2p. Data from Table 3-2, *SOUTH COAST REGION WATER BUDGET*, were summarized from the California Department of Water Resources, Bulletin 160-98, California Water Plan, Tables 4-26 and 4-27. In times of drought, both urban and agricultural water uses are higher because, even though there may be voluntary or required conservation reductions, urban landscaping and crops are generally watered more often when there is less rainfall. Note that the chart shows that environmental uses will be reduced in times of drought. Further explanation regarding the specifics of water uses during times of drought may be available from the Department of Water Resources.
- 2q. During dry weather conditions the ocean salinity will vary less than one percent. During wet conditions, salinity is depressed from increased river flow due to rainfall which was explicitly evaluated in Section 4.3, *HYDROLOGY AND WATER QUALITY* and Appendix C of the Draft EIR.
- 2r. The total volume of waste cleaning solution generated from the cleaning of one reverse osmosis (RO) membrane train is 91,000 gallons. The desalination plant will have a total of 13 RO membrane trains. Each train must be cleaned twice during the year. On a typical cleaning day, two to three membrane trains could be cleaned at the same time resulting in a generation of up to 182,000 to 273,000 gallons of waste cleaning solution. The Draft EIR rounded this number to a range of 200,000 to 300,000 gallons.
- 2s. This paragraph provides contact information for the Coastal Commission’s representative, and does not require a response.

⁴ CEQA Guidelines section 15130[b][1][A].



State of California - The Resources Agency

GRAY DAVIS, Governor

DEPARTMENT OF FISH AND GAME

http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 487-4201



November 4, 2002



Ricky Ramos
City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

**Poseidon Seawater Desalination Project
State Clearinghouse Number 2001051092**

Dear Mr. Ramos:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the above-referenced project, relative to impacts to biological resources. The Department is a Trustee Agency and a Responsible Agency pursuant to the California Environmental Quality Act (CEQA), Sections 15386 and 15381 respectively. As a Trustee Agency, the Department must be consulted by the Lead Agency during the preparation and public review for project-specific CEQA documents. The Department is responsible for the conservation, protection, and management of the state's biological resources, including rare, threatened, and endangered plant and animal species, pursuant to the California Endangered Species Act (CESA). The Department also administers the Natural Community Conservation Planning Program (NCCP).

a

The proposed Poseidon Seawater Desalination Project site is approximately seven acres in size and is located in the southeastern portion of the City of Huntington Beach at 21652 Newland Street. The project site is currently used as a storage tank area containing a total of six tanks, ranging in capacity from 924,000 gallons to 8.64 million gallons. Implementation of the proposed project would require the demolition of three of the six tanks (two fuel oil tanks and one distillate fuel tank).

In addition to the desalination facility, the proposed project will also include several related off-site improvements, including pipelines between the existing AES ocean intake/outfall lines and the proposed desalination project, up to approximately 10 miles of water delivery pipeline, an optional aboveground storage tank, and a new underground pump station. The intake/discharge pipelines would be located entirely within the existing AES power plant site, and would not require modifications to the coastal/marine portions of the existing AES ocean intake/discharge facilities. The water delivery pipeline would be up to approximately ten miles in length, extending from the proposed desalination facility to the OC-44 water transmission line within the City of Costa Mesa, east of State Route 55 (SR-55) at the intersection of Del Mar Avenue and Elden Avenue. The majority of the pipeline alignment will occur within existing

b

Ricky Ramos

November 4, 2002

Page 2

public streets, easements, or other rights-of-way (ROVV) in urbanized areas.

A new off-site underground booster pump station is proposed to be located within an unincorporated area of the County of Orange, within an existing easement. The underground pump station would be placed in a subsurface utility vault, bordered by residential uses and natural vegetation.

The project proposes to implement a seawater desalination facility producing approximately 50 million gallons per day (mgd) or 56,000 acre feet per year (afy) of potable water for delivery into the regional water distribution system for the Southern California region and particularly Orange County. The facility would intake raw seawater from the Pacific Ocean through the existing AES Huntington Beach Generating Station intake line, purify it utilizing reverse osmosis (RO) technology, discharge brine byproduct water through the existing AES outfall, and deliver potable product water to the distribution system.

On-site improvements associated with the proposed project would include seawater intake pretreatment facilities, a desalination plant utilizing RO technology, post-treatment facilities, product water storage, chemical storage, and booster pumps. Structures on the desalination facility site would consist of an administration building, a reverse osmosis facility building, pretreatment filter structure, chemical storage/solids handling building, bulk chemical storage building, product water pump station, flush tank, lime silos, wash water tank, ammonia tank, influent/effluent pump station, and an electrical substation building. Product water would be stored either on-site in an underground product water tank situated within the northern portion of the project site or in an optional aboveground storage tank to the north or northwest.

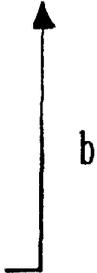
In order to convey the project's potable drinking water off-site, the project proposes construction of water transmission lines to connect to existing regional transmission and local water distribution systems. A total of two pipeline alignments are currently being considered to convey water eastward from the desalination plant to its destination within the City of Costa Mesa, east of SR-55 at the intersection of Del Mar Avenue and Elden Avenue. The majority of each pipeline alignment is planned for existing public streets, easements, or other rights-of-way. The proposed alignments consist of a 42- to 48-inch force main, ranging in length from approximately 30,000 to 40,000 linear feet along the two different conceptual alignments. The proposed routes will utilize "trenchless" installation of pipeline in order to traverse waterways and/or roadways with a high sensitivity to traffic disturbance.

The off-site construction of an underground booster pump station will be required as part of the seawater desalination plant project in order to convey potable water from the subject site to the regional distribution system. The pump station is proposed to be located underground within an unincorporated area of the County of Orange, along the eastern border of the City of Newport Beach, approximately 1.5 miles south of the University of California, Irvine. The site is within an Orange County Resource Preservation Easement, approximately 1/4 mile north of the San Joaquin Reservoir, where the East Orange County Feeder Number Two and the OC-44

Ricky Ramos
November 4, 2002
Page 3

transmission pipelines converge.

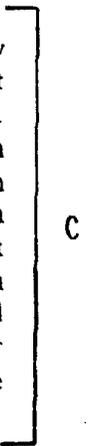
The off-site underground booster pump station would include pumps, telemetry equipment, appurtenances, and two diesel powered electrical generators for emergency back-up purposes. The booster pump station, including both the generators and diesel fuel storage tank, would be placed entirely underground to maintain the natural character of the surrounding resource preservation easement.



The Department offers the following comments and recommendations:

Summary of DEIR Information Needs

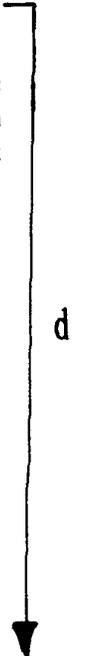
The DEIR does not provide sufficient biological information for the Department to adequately assess the biological impacts of the project. The DEIR does not fully address potentially significant impacts to coastal wetlands as described in the Notice of Preparation (NOP – DEIR Appendix A). The NOP furthermore did not describe the booster pump station, which is proposed to be located in high quality native riparian woodland and adjacent to coastal sage scrub habitat in an area with high potential to support several rare, threatened, and endangered species, possibly protected pursuant to a conservation easement, and located within the Central/Coastal NCCP. A biological technical report was not prepared for this project, and the DEIR does not include a discussion of NCCP consistency, a jurisdictional delineation, a vegetation map, focused surveys for rare, threatened, and endangered wildlife with a high potential to occur on the site, general plant surveys or focused rare, threatened or endangered plant surveys, impact avoidance measures, project alternatives that would reduce the impacts to biological resources, or potential mitigation measures.



DEIR Inconsistency with Notice of Preparation

A NOP dated May 15, 2001 is provided as Appendix A of the DEIR. This NOP describes two adjacent potential project sites (the AES Power Plant or the Edison Property). The Edison Property is the site chosen for the location of the proposed project described in the DEIR. According to the NOP (Page 17), the project:

“has the potential to have significant impacts on the local marine environment through the discharge of operational by-product water (increased salt and mineral content combined with other AES plant discharge) through the AES ocean outfall pipe. Further studies will be conducted to determine the biological impacts of such discharge on the local marine environment, including native resident and migratory fish. In addition, the project site is located approximately 400 feet northwest of a wetland area. Short-term construction and long-term operation of the proposed project could have significant impacts on the wetland area.”



The desalination facility is located between the Huntington Beach Wetlands (a.k.a. Talbert Marsh), Pacific Coast Highway, Newland Street, and the Huntington Beach Channel. The

Ricky Ramos

November 4, 2002

Page 4

Newland Ave. Marsh is approximately 1,500 feet west of the site, between Newland Street and Beach Boulevard. Immediately east and south of the site is the Huntington-Talbert Marsh. The natural communities adjacent to the project site include salt marsh dominated by pickleweed (*Salicornia virginica*) along with salt flats. These nearby habitat areas meet the state's one-parameter wetland definition (Cowardin 1979) and are considered environmentally sensitive habitats (ESHA's). Both the Newland Marsh and the Huntington-Talbert Marsh are designated as ESHA's in the City's 1985 Land Use Plan.

According to the California Natural Diversity Data Base (CNDDDB 2002), several avian species of concern have been documented in the area. The Newland Ave Marsh supports the state-listed endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) and the federally-listed threatened western snowy plover (*Charadrius alexandrinus nivosus*). The Huntington-Talbert Marsh supports Belding's savannah sparrow and the state- and federally-listed endangered California least tern (*Sterna antillarum browni*). According to the 2001 Survey of the Belding's Savannah Sparrow in California (Zemba and Hoffman, 2001), 71 Belding's savannah sparrow territories were identified in the Huntington-Talbert marsh in 2001. As discussed in the NOP, the DEIR should analyze all potential impacts to wetlands and associated terrestrial wildlife including ground-nesting birds in the vicinity of the facility.

Because the impact analysis provided in the DEIR focuses only on water quality and not other types of impacts, the significance of impacts to marine and terrestrial biological resources within the immediate vicinity of the desalination facility cannot be determined. The Department recommends that the CEQA document include general and focused survey results along with an analysis of impacts and avoidance/mitigation measures. This information should be addressed and provided for agency and public review prior to approval of the project.

The NOP also describes water transmission lines to be constructed as part of the project. According to the NOP, the transmission lines "would not require disturbance of native vegetation or otherwise impact sensitive resources." The potential for "frac-outs" to occur during directional boring beneath waterways should be addressed in terms of potential impacts to biological resources if this method is proposed to be used.

The NOP does not mention the construction of the underground booster pump station ("pump station"). The pump station is located within high-quality riparian habitat in close proximity to known populations of the federally- and State-listed least Bells' vireo (*Vireo bellii pusillus* - "vireo"), and the southwestern pond turtle (*Clemmys marmorata* - "pond turtle"), a California Species of Special Concern (CSC). In addition, the pump station is located immediately adjacent to high quality coastal sage scrub (CSS), a Rare Natural Community with known occurrences of California gnatcatcher (*Poliophtila californica californica* - "gnatcatcher") in the immediate vicinity. The Biological Constraints Survey for the pump station (dated May 16, 2002, Appendix L) describes the following conditions:

Ricky Ramos

November 4, 2002

Page 5

- The pump station site is immediately adjacent to CSS with a high potential to be occupied by the gnatcatcher.
- The vireo has a high potential to occur at the pump station site.
- The pond turtle has a high potential to occur at the pump station site.

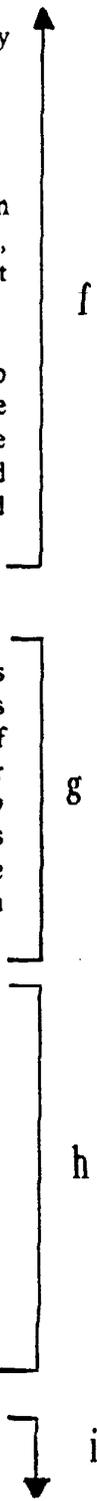
Although not discussed in the constraints report, the federally- and State-listed southwestern willow flycatcher (*Empidonax traillii extimus*) has the potential to occur at the pump station site, especially in light of recent occurrences being identified in coastal Orange County in similar habitat types.

Because the DEIR provides minimal impact analysis for the water transmission line and pump station components of the project, the significance of impacts to biological resources cannot be determined. As with coastal resources previously discussed, the Department recommends that the CEQA document includes general and focused survey results along with an analysis of impacts and avoidance/mitigation measures. This information should be addressed and provided for agency and public review prior to approval of the project.

Specific Information Needs

As mentioned above, the DEIR does not provide sufficient baseline or impact analysis information for biological resources. The document is currently not adequate for the Department's use as a Responsible Agency to fulfill the Department's CEQA requirements for the issuance of permits associated with the project, including: (1) a Lake or Streambed Alteration Agreement for directional boring under waterways/wetlands/riparian habitat and construction of the booster pump station; or (2) a California Endangered Species Act permit for potential impacts to Belding's savannah sparrow, southwestern willow flycatcher, and least Bell's vireo. The Department therefore requests the following information to ensure consistency with CEQA, preferably consolidated into a single section of the EIR that would address biological resources:

1. A complete assessment of the flora and fauna within and adjacent to the project areas, including the main facility, potable water transmission lines, and the booster pump station, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.
 - a. A thorough assessment of rare plants and rare natural communities, following the Department's May 1984 Guidelines (revised May 2000) for Assessing Impacts to Rare Plants and Rare Natural Communities (Attachment 1). A vegetation map should be included depicting all vegetation coverage for the entire project area, including the main facility site, the pipeline alignments, and the booster pump station. Species lists should be included for all plant and animal species observed or expected on the project sites.
 - b. A complete assessment of sensitive fish, wildlife, reptile, and amphibian species.



Ricky Ramos

November 4, 2002

Page 6

Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

i

c. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380).

j

d. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

k

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, should be included

l

a. CEQA Guidelines, § 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

b. Project impacts should be analyzed relative to their effects on off-site habitats. Specifically, this should include nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed Natural Communities Conservation Planning (NCCP) reserve lands. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided.

m

c. A discussion of impacts associated with increased lighting, noise, human activity, changes in drainage patterns, changes in water volume, velocity, and quality, soil erosion, and /or sedimentation in streams and water courses on or near the project site, with mitigation measures proposed to alleviate such impacts should be included.

n

d. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

o

e. A cumulative effects analysis should be developed as described under CEQA Guidelines, § 15130. General and specific plans, as well as past, present, and

p

Ricky Ramos
November 4, 2002
Page 7

anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

p

- 3. One of the basic purposes of CEQA is to “prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible” (CEQA Guidelines, Section 15002 (a)(3); emphasis added). The Department believes that the DEIR does not comport with CEQA Guidelines regarding consideration and discussion of alternatives to the proposed pump station. Section 15126.6 (a) of the CEQA Guidelines states, “An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” The DEIR discusses only one location for the pump station – not a range of alternatives.

Section 15126.6 (b) of the CEQA Guidelines states, “the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly

q

Section 15126.6 (c) of the CEQA Guidelines state, “The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination.” The DEIR does not provide this information.

The Department requests that the revised EIR address these shortcomings related to compliance with CEQA. Most importantly, we request that the revised EIR provide a range of feasible alternatives that would avoid or substantially lessen the significant effects of the proposed project (i.e., void sensitive plant communities, and listed and species of special concern).

- a. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment 2).
- 4. Mitigation measures for adverse project-related impacts to sensitive plants, animals, and habitats should be discussed. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

r

Ricky Ramos
November 4, 2002
Page 8

- a. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.
 - b. Areas reserved as mitigation for project impacts should be protected from future direct and indirect impacts. Potential issues to be considered include limitation of access, conservation easements, monitoring and management programs, control of illegal dumping, water pollution, and fire.
 - c. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule, (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program, (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.
5. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of a 2081 permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a 2081 permit. For these reasons, the following information is requested:
- a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.
 - b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.
6. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, project mitigation



Ricky Ramos

November 4, 2002

Page 9

assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether intermittent or perennial, should be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

t

a. A jurisdictional delineation of lakes, streams, and associated riparian habitats should be included in the DEIR, including a delineation of wetlands pursuant to the U. S. Fish and Wildlife Service wetland definition adopted by the Department¹. Please note that some wetland and riparian habitats subject to the Department's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.

u

b. The project may require a Lake or Streambed Alteration Agreement, pursuant to Section 1600 *et seq.* of the Fish and Game Code, with the applicant prior to the applicant's commencement of any activity that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank (which may include associated riparian resources) of a river, stream or lake, or use material from a streambed. The Department's issuance of a Lake or Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by the Department as a responsible agency. The Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the project. To minimize additional requirements by the Department pursuant to Section 1600 *et seq.* and/or under CEQA, the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement². Besides the construction of the pump station, which appears to be located within riparian habitat, the Department will also require a Lake or Streambed Alteration Agreements for directional boring projects that cross any waterways. A detailed plan for avoiding and responding to potential "frac-out" events should be included in the Lake or Streambed Alteration Agreement application.

v

¹ Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

² A Streambed Alteration Agreement form may be obtained by writing to: Department of Fish and Game, 4949 Viewridge Avenue, San Diego, CA 92123, by calling (858) 636-3160, or by accessing the Department's web site at www.dfg.ca.gov/1600.

Ricky Ramos
November 4, 2002
Page 10

7. An analysis of the effect that the project may have on implementation of regional and/or subregional conservation programs. Under § 2800-§ 2840 of the Fish and Game Code, the Department, through the Natural Community Conservation Planning (NCCP) program, is coordinating with local jurisdictions, landowners, and the Federal Government to preserve local and regional biological diversity. Coastal sage scrub is the first natural community to be planned for under the NCCP program. The Department recommends that the lead agency ensure that the development of this and other proposed projects do not preclude long-term preserve planning options and that projects conform with other requirements of the NCCP program. The project appears to fall within the boundaries of the Coastal Subarea reserve that was established concurrently with the approval of the Central/Coastal NCCP/HCP in 1996. Although the City of Huntington Beach has not formally entered into a planning agreement with the Department, impacts proposed within the reserve will require conformance with the NCCP/HCP. The project should not result in the loss of habitat value or acreage within the reserve. The CEQA document should describe how the project is consistent with the subregional plan as well as describe the "Orange County Resource Preservation Easement" recorded for the pump station site. If the pump station is sited in a biological conservation easement and/or within the Coastal Subarea reserve, the Department recommends the development of alternatives for this facility prior to certification of the FEIR. If the proposed pump selection site was designated as mitigation for some other project's impacts to biological resources, mitigation requirements are generally much higher than mitigation ratios routinely applied for habitat loss.

W

Marine Region Comments

The Marine Region of the Department did not receive a copy of the DEIR through the State Clearinghouse in time for thorough review of the document. Based on a preliminary assessment of the discharge of concentrated wastewater associated with the project, the Department has concerns with the project's impact on water quality and marine resources. Please contact William Paznokas at (858) 467-4218 and/or at the above address for additional coordination regarding marine issues.

X

Thank you for this opportunity to comment. Questions regarding this letter and further coordination on these issues should be directed to Brad Henderson at (310) 214-9950.

y

Sincerely,



Donald R. Chadwick
Habitat Conservation Supervisor

Attachments

Ricky Ramos
November 4, 2002
Page 11

cc: Department of Fish and Game
File
Bill Paznokas
Donna Cobb
Brad Henderson
San Diego

U.S. Fish and Wildlife Service
Jonathan Snyder
Carlsbad

California Coastal Commission
Tom Luster
San Francisco

Santa Ana Regional Water Quality Control Board
Stephanie M. Gasca
Riverside

State Clearinghouse
Sacramento

Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities

State of California
THE RESOURCES AGENCY
Department of Fish and Game
December 9, 1983
Revised May 8, 2000

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how field surveys should be conducted, and what information should be contained in the survey report. The Department may recommend that lead agencies not accept the results of surveys that are not conducted according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all rare, threatened, and endangered plants and plant communities. Rare, threatened, and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:

A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database's List of California Terrestrial Natural Communities may be used as a guide to the names and status of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or to the extent that, rare, threatened, or endangered plants will be affected by a proposed project when:
 - a. Natural vegetation occurs on the site, it is unknown if rare, threatened, or endangered plants or habitats occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
 - b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking.
3. Botanical consultants should possess the following qualifications:
 - a. Experience conducting floristic field surveys;
 - b. Knowledge of plant taxonomy and plant community ecology;
 - c. Familiarity with the plants of the area, including rare, threatened, and endangered species;
 - d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
 - e. Experience with analyzing impacts of development on native plant species and communities.
4. Field surveys should be conducted in a manner that will locate any rare, threatened, or endangered species that may be present. Specifically, rare, threatened, or endangered plant surveys should be:
 - a. Conducted in the field at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Usually, this is when the plants are flowering.

Z

When rare, threatened, or endangered plants are known to occur in the type(s) of habitat present in the project area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the species are identifiable at the time of the survey.

- b. Floristic in nature. A floristic survey requires that every plant observed be identified to the extent necessary to determine its rarity and listing status. In addition, a sufficient number of visits spaced throughout the growing season are necessary to accurately determine what plants exist on the site. In order to properly characterize the site and document the completeness of the survey, a complete list of plants observed on the site should be included in every botanical survey report.
 - c. Conducted in a manner that is consistent with conservation ethics. Collections (voucher specimens) of rare, threatened, or endangered species, or suspected rare, threatened, or endangered species should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable state and federal permit requirements. A collecting permit from the Habitat Conservation Planning Branch of DFG is required for collection of state-listed plant species. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection of voucher specimens.
 - d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas.
 - e. Well documented. When a rare, threatened, or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5 minute topographic map with the occurrence mapped, should be completed and submitted to the Natural Diversity Database. Locations may be best documented using global positioning systems (GPS) and presented in map and digital forms as these tools become more accessible.
5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations and mitigated negative declarations, Timber Harvesting Plans (THPs), EIR's, and EIS's, and should contain the following information:
- a. Project description, including a detailed map of the project location and study area.
 - b. A written description of biological setting referencing the community nomenclature used and a vegetation map.
 - c. Detailed description of survey methodology.
 - d. Dates of field surveys and total person-hours spent on field surveys.
 - e. Results of field survey including detailed maps and specific location data for each plant population found. Investigators are encouraged to provide GPS data and maps documenting population boundaries.
 - f. An assessment of potential impacts. This should include a map showing the distribution of plants in relation to proposed activities.
 - g. Discussion of the significance of rare, threatened, or endangered plant populations in the project area considering nearby populations and total species distribution.
 - h. Recommended measures to avoid impacts.
 - i. A list of all plants observed on the project area. Plants should be identified to the taxonomic level necessary to determine whether or not they are rare, threatened or endangered.
 - j. Description of reference site(s) visited and phenological development of rare, threatened, or endangered plant(s).
 - k. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.
 - l. Name of field investigator(s).
 - j. References cited, persons contacted, herbaria visited, and the location of voucher specimens.

Z

ATTACHMENT 2

Sensitivity of Top Priority Rare Natural Communities in Southern California

Sensitivity rankings are determined by the Department of Fish and Game, California Natural Diversity Data Base and based on either number of known occurrences (locations) and/or amount of habitat remaining (acreage). The three rankings used for these top priority rare natural communities are as follows:

- S1.# Less than 6 known locations and/or on less than 2,000 acres of habitat remaining.
- S2.# Occurs in 6-20 known locations and/or 2,000-10,000 acres of habitat remaining.
- S3.# Occurs in 21-100-known locations and/or 10,000-50,000 acres of habitat remaining.

The number to the right of the decimal point after the ranking refers to the degree of threat posed to that natural community regardless of the ranking. For example:

- S1.1 = very threatened
- S2.2 = threatened
- S3.3 = no current threats known

Sensitivity Rankings (February 1992)

<u>Rank</u>	<u>Community Name</u>
S1.1	Mojave Riparian Forest Sonoran Cottonwood Willow Riparian Mesquite Bosque Elephant Tree Woodland Crucifixion Thorn Woodland Althorn Woodland Arizonan Woodland Southern California Walnut Forest Mainland Cherry Forest Southern Bishop Pine Forest Torrey Pine Forest Desert Mountain White Fir Forest Southern Dune Scrub Southern Coastal Bluff Scrub Maritime Succulent Scrub Riversidean Alluvial Fan Sage Scrub Southern Maritime Chaparral Valley Needlegrass Grassland Great Basin Grassland Mojave Desert Grassland Pebbie Plains Southern Sedge Bog Cismontane Alkali Marsh

Z

- S1.2 Southern Foredunes
Mono Pumice Flat
Southern Interior Basalt Flow Vernal Pool

- S2.1 Venturan Coastal Sage Scrub
Diegan Coastal Sage Scrub
Riversidean Upland Coastal Sage Scrub
Riversidean Desert Sage Scrub
Sagebrush Steppe
Desert Sink Scrub
Mafic Southern Mixed Chaparral
San Diego Mesa Hardpan Vernal Pool
San Diego Mesa Claypan Vernal Pool
Alkali Meadow
Southern Coastal Salt Marsh
Coastal Brackish Marsh
Transmontane Alkali Marsh
Coastal and Valley Freshwater Marsh
Southern Arroyo Willow Riparian Forest
Southern Willow Scrub
Modoc-Great Basin Cottonwood Willow Riparian
Modoc-Great Basin Riparian Scrub
Mojave Desert Wash Scrub
Engelmann Oak Woodland
Open Engelmann Oak Woodland
Closed Engelmann Oak Woodland
Island Oak Woodland
California Walnut Woodland
Island Ironwood Forest
Island Cherry Forest
Southern Interior Cypress Forest
Bigcone Spruce-Canyon Oak Forest

- S2.2 Active Coastal Dunes
Active Desert Dunes
Stabilized and Partially Stabilized Desert Dunes
Stabilized and Partially Stabilized Desert Sandfield
Mojave Mixed Steppe
Transmontane Freshwater Marsh
Coulter Pine Forest
Southern California Fellfield
White Mountains Fellfield

- S2.3 Bristlecone Pine Forest
Limber Pine Forest

Z

Response No. 3

California Department of Fish and Game
Donald R. Chadwick, Habitat Conservation Supervisor

- 3a. This paragraph summarizes the agency's responsibilities. No response is warranted.
- 3b. As a summary of the project description is provided in these paragraphs, no response is necessary.
- 3c. This is a general summary of comments provided in the comment letter. No response is necessary.
- 3d. The Huntington Beach Wetlands are situated southeast of the desalination site and occupy a 131 acre, 1.5 mile long area along the coast, bordered by Pacific Coast Highway to the southwest, and the Talbert and Santa Ana River Flood Control Channels to the north and southeast.⁵ The wetlands are divided into two major components. To the southeast, the 17-acre Talbert Marsh opens to the ocean through a 100 ft-wide entrance adjacent to the mouth of the Santa Ana River. The Talbert Marsh is a recovering wetland area reintroduced to tidal influence on February 17, 1989.⁶

The second component of the Huntington Beach wetlands, separated from the Talbert Marsh by Brookhurst Street, includes 89 privately-owned acres abutting the edge of the southeast corner of the proposed project site. This acreage has limited tidal access, and water sources are primarily limited to rainfall, urban runoff, and groundwater seepage.⁷ Salinities are extremely high in the soils and seasonal ponds, water quality of the brackish water marsh is poor, and the area in general is considered degraded.⁸ The remaining area of the Huntington Beach Wetlands includes almost 20 acres of open water channel of the Talbert Flood Control System.

The privately-owned area of the Huntington Beach wetlands (abutting the edge of the southeast corner of the desalination plant site) is primarily a seasonally flooded estuarine intertidal habitat dominated by pickleweed, along with other plant species that can tolerate high soil salinities and seasonal saturation and drought, such as saltgrass and alkali heath.⁹ Many areas of the wetland are heavily disturbed and unvegetated. The back dune habitat along the Pacific Coast Highway supports a moderate number of species including introduced plant species. The dunes have been replanted with native plant species. The site functions as a seasonal wetland for some wildlife, while seasonal ponding in former tidal sloughs supports limited fish and invertebrate use.

As stated in the Draft EIR, a spill at the desalination facility of either product or byproduct water is likely to have negligible effects on the Huntington Beach Wetlands and Talbert Flood Control System. Soils of wetlands are already flooded by freshwater during the rainy season, forming standing pools. Product water spills will do the same. Soils are already hypersaline, so spills of byproduct water will contribute little to the salinity of soils. Spills into the local Talbert Channel are also likely to have minimal impact. The channel already has multiple year-round fresh water inputs, so product water spills will have no impact. Byproduct water spills will be diluted by these fresh water inputs,

⁵ MEC, 1991.

⁶ Reish and Massey, 1990.

⁷ MEC, 1991.

⁸ Coats and Josselyn 1990, CDFG 1982, cited in MEC, 1991.

⁹ MEC, 1991.

although if the channel contains ocean water at the time of a spill, salinities may be overly elevated. Species likely to be found in the channel, such as topsmelt, can tolerate wide variations in salinity.

Western snowy plover (*Charadrius nivosus*, federally-listed as threatened and a state species of concern) forage primarily on sand at the beach-surf interface where they feed on small invertebrates. Snowy plovers nest most commonly on sandspits, dune-backed beaches, beach strands and open areas near river mouths and estuaries.¹⁰ Western snowy plover is a winter migrant in southern California and a localized breeding resident April through September.¹¹ Reduced tidal influence in the marsh adjacent to the proposed project make it unlikely that western snowy plover will forage in this area. Plovers would also be unlikely to nest in this, or other adjacent marsh areas due to human activity. Western snowy plover nesting was last observed in the area in 1993, when one nesting pair was observed at the protected California least tern breeding area located on the Huntington State Beach.¹²

Belding's savannah sparrow (*Passerculus sandwichensis beldingii*, state-listed as endangered) may use the pickleweed of the Huntington Beach wetlands for breeding, nesting and feeding habitat.¹³ Construction impacts, including short-term, temporary noise disturbance, could lead to disruption in Belding's savannah sparrow nesting activities in the marsh adjacent to the project site. A spill at the desalination plant site of either product or byproduct water could potentially impact Belding's savannah sparrow through inundation of any of the bird's low- or ground-lying nests in the area. However, such a spill is unlikely to occur as the existing on-site containment berms abutting the wetland area would remain in place, thereby keeping product water or byproduct water from impacting the wetland area. Adult birds are likely to avoid areas of construction and operational impacts, minimizing potential effects on adults. As noted in Section 3.0, *ERRATA*, in order to minimize potential construction impacts to nesting savannah sparrows, a pre-construction nesting survey will be performed by a qualified biologist in consultation with applicable regulatory agencies. Adequate mitigation (such as relocation, construction noise abatement measures, etc.) will be implemented as appropriate based on the findings of the pre-construction survey.

California least tern (*Sterna antillarum brownii*, state- and federally-listed as endangered) are known to fly over the Huntington Beach wetlands, and to feed in the open water of the Talbert Channel.¹⁴ Least terns forage on small shallow-water fish such as anchovies and topsmelt.¹⁵ In order to provide abundant food for their chicks, California least terns breed in loose colonies along the coast near areas of seasonally abundant small fish, such as estuaries, river mouths and shallows. Nests are shallow depressions in sandy open areas with little vegetation. Nests and chicks are highly vulnerable to predation from native and introduced predators. A protected 7.9-acre California least tern breeding area is located on the Huntington State Beach between the Talbert Marsh opening and the mouth of the Santa Ana River, approximately 5,000 ft south east of the proposed project area. Typically 200 to 300 nesting pairs of California least terns utilize this breeding site each year.¹⁶ This area is likely to be unaffected by construction impacts.

¹⁰ Thelander and Crabtree, 1994.

¹¹ AES and URS, 2000.

¹² Personal communication, Jonathan Snyder, United States Fish and Wildlife Service, 2003.

¹³ MEC, 1991.

¹⁴ MEC, 1991.

¹⁵ Thelander and Crabtree, 1994.

¹⁶ Personal communication, Keane, 2001.

The nesting site is also well outside the modeled area of elevated salinities from the offshore discharge.¹⁷ Least terns nest above the high tide level, so they would not be directly impacted by water of varying salinities as might occur in the case of accidental release of high saline water. California least tern forage species are mobile, surface-schooling fish species can be expected to tolerate all salinity conditions resulting from project operations (refer to Appendix C of these Responses to Comments), limiting least tern exposure to high salinities during foraging. California least terns are not likely to be impacted as a result of RO plant operations.

- 3e. Directional boring for water transmission line implementation would only be utilized under major roadways (SR-55, Harbor Boulevard) and water features (Santa Ana River, Huntington Beach Channel). "Frac-outs" occur when drilling fluids (usually bentonite) seep to the surface via cracks in the ground. Prior to the performance of any directional boring, the applicant will prepare a Frac-Out Contingency Plan. The plan will establish criteria under which a bore would be shut down (e.g., loss of pressure, loss of a certain amount of returns) and the number of times a single bore should be allowed to frac-out before the bore is shut down and reevaluated. It will also clearly state what measures will be taken to seal previous frac-outs that have occurred on a given bore to ensure that it does not become the path of least resistance for subsequent frac-outs. Additionally, a site-specific Frac-Out Contingency Plan will be prepared and reviewed by the appropriate resource agencies prior to each major bore. This requirement has been added to Section 4.9, *CONSTRUCTION RELATED IMPACTS* as a mitigation measure, as shown in Section 3.0, *ERRATA*.
- 3f. Refer to Responses 1c, 1n, and 1p, above.
- 3g. This text is an introductory paragraph describing anticipated CDFG permits necessary and required changes to obtain CDFG CEQA adequacy. No response is necessary.
- 3h. A biological constraints report was prepared to assess potential biological resource impacts at the proposed underground pump station, while a review was conducted to assess potential marine biological and coastal terrestrial impacts at the proposed desalination site. Rare plants and natural communities may exist adjacent to the proposed underground booster pump station location (for further information, Refer to Response 1c, above). However, in response to agency comments, the underground pump station location will be sited adjacent to existing pipeline facilities, and no sensitive vegetation/community will be replaced.

As indicated in Response 3d, above, the wetland area abutting to the southeastern boundary of the desalination plant site features high salinities in the soils and seasonal ponds, poor water quality of the water marsh, and the area in general is considered degraded. This area is dominated by pickleweed, along with other plant species that can tolerate high soil salinities and seasonal saturation and drought, such as saltgrass and alkali heath. Many areas of the wetland are heavily disturbed and unvegetated. The back dune habitat along the Pacific Coast Highway supports a moderate number of species including introduced plant species. The dunes have been replanted with native plant species. The desalination plant is not anticipated to impact vegetation in the adjacent wetland area. However, should construction have the potential to impact suitable habitat for nesting birds within 500 feet of project construction/staging areas, applicable pre-construction nesting surveys will be performed in coordination with appropriate resource agencies.

¹⁷ Jenkins and Wasyl, 2001 (Appendix D of the Draft EIR).

In addition, the proposed water conveyance pipeline alignment would primarily travel within existing street right-of-way and easements. No sensitive vegetation or natural communities are anticipated to be impacted through pipeline implementation (also see Response 3e above regarding flood control channel crossings).

- 3i. As stated above, focused surveys will be conducted at the appropriate time of year, as required by applicable resource agencies. The applicant will consult with such resource agencies during the permitting process, and mitigation measures will be implemented to reduce biological resources impacts to less than significant levels.
- 3j. Focused surveys for all state- or federally-listed rare, threatened, or endangered species as defined by the CEQA Guidelines will be conducted subsequent to consultation with applicable resource agencies during the permitting process.
- 3k. As stated previously, focused surveys will be conducted at the appropriate time of year as required by applicable resource agencies. The applicant will consult with such resource agencies during the permitting process, and mitigation measures will be implemented to reduce biological resources impacts to less than significant levels for the off-site underground booster pump station and wetland area abutting the edge of the southeast corner of the desalination site. As part of this process (and as noted in Section 3.0, *ERRATA*), a qualified biologist will perform a review of data within the California Natural Diversity Data Base (CNDDDB) to obtain current information on any previously reported sensitive species/habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.
- 3l. Section 4.2, *HYDROLOGY AND WATER QUALITY* and Section 4.9, *CONSTRUCTION RELATED IMPACTS* provide a discussion of marine, coastal, and terrestrial biological impacts on resources that are rare or unique to the region.
- 3m. Refer to Responses 1c and 3d, above.
- 3n. The Huntington Beach Channel is situated east of the proposed desalination site, while the privately-owned area of the Huntington Beach wetlands abuts the edge of the southeast corner of the desalination site. As stated in the Draft EIR within Section 4.7, *AESTHETICS/LIGHT & GLARE*, outdoor lighting on the desalination facility site will be limited to that necessary for security and safety, and lighting will be directed so as to avoid "spillage" onto adjacent properties. Noise from on-site mechanical devices (such as water pumps) would be properly attenuated to meet City noise standards. As the facility is anticipated to have five to seven employees on-site during regular working hours Monday through Friday and fewer at night and on weekends, the impact of increased human interaction with biological resources adjacent to the subject site is anticipated to be minimal. In addition, employees are not anticipated to come into contact with adjacent biological resources, as the containment berm along the eastern border of the site would remain in place. Implementation of the desalination plant would not result in changes to drainage patterns, water volume, velocity, or quality, nor cause soil erosion or sedimentation within streams/water courses, as no water courses traverse the site and all storm water would be directed to an on-site local storm drain system.

The off-site underground pump station facility would be completely underground and would not involve the use of nighttime lighting. Short-term construction of the underground pump station may result in temporary noise impacts to surrounding

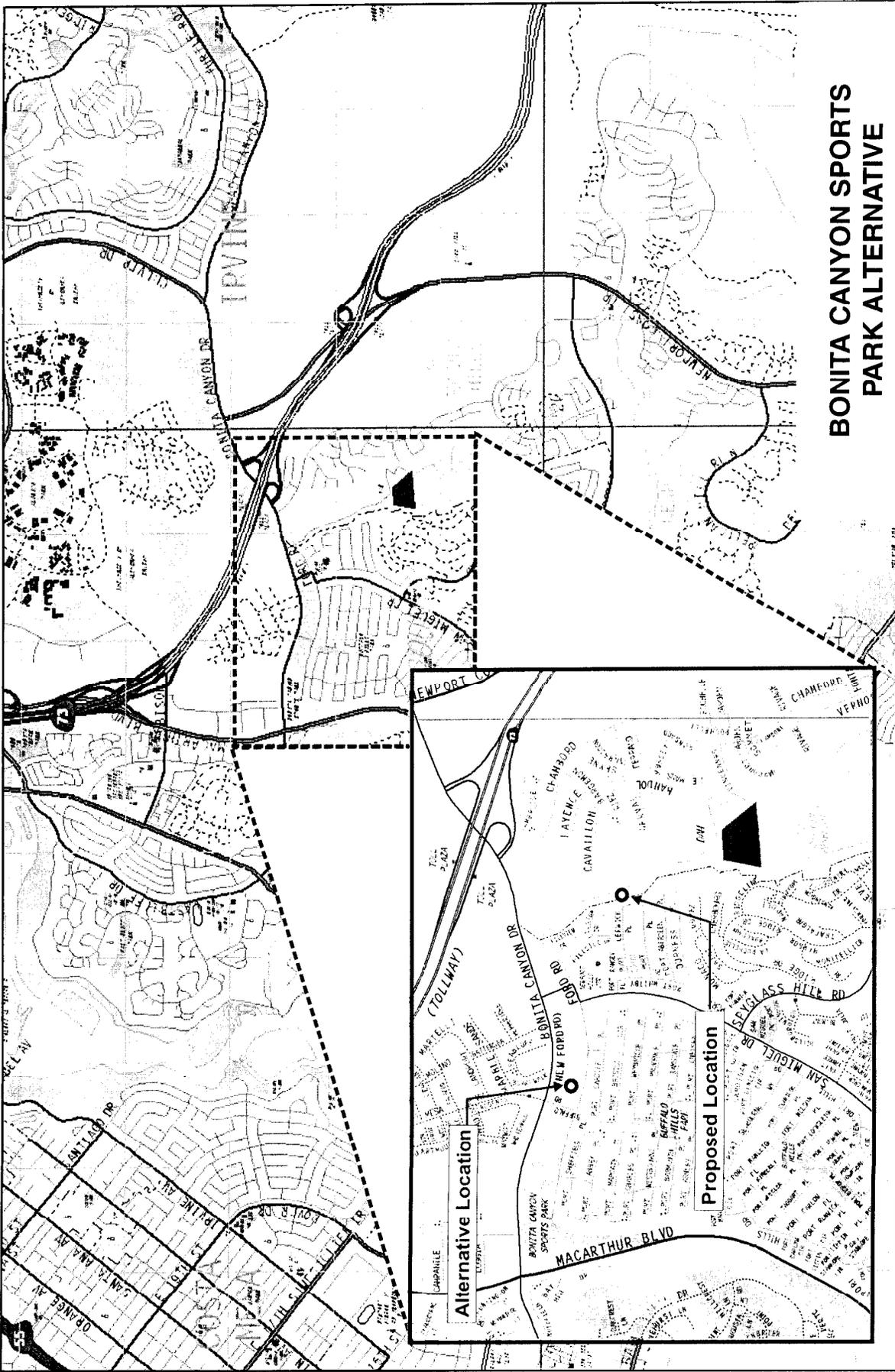
biological resources. However, as denoted in Response 1c, above, appropriate biological surveys (including pre-construction surveys) will be performed and adequate mitigation measures will be implemented in coordination with applicable resource agencies (possibly including noise attenuation, relocation, or limiting construction to the non-breeding season). Long-term impacts due to human activity are not anticipated, as the underground pump station facility would require maintenance an average of only four to six times per year. The applicant will coordinate with applicable regulatory agencies to determine the preferred location for the underground pump station, west of the NCCP/HCP boundary. It is anticipated that the underground pump station site will not result in changes to drainage patterns, water volume, velocity, or quality, nor cause soil erosion or sedimentation within streams/water courses. The underground pump station would result in a nominal increase in impermeable surface area, and would not have water quality impacts on streams/water courses surrounding the site.

- 3o. For a discussion of potential wildlife-human contact at the proposed desalination facility site, refer to Response 3n, above. The proposed underground booster pump station may result in increased interaction during construction, but this would be short-term in nature. Subsequent to construction, the underground pump station would require maintenance approximately four to six times per year. In addition, the project would not result in changes to the existing zoning or General Plan designations for any portion of the project site or off-site components.
- 3p. A cumulative impacts analysis is provided within Section 5.0, *LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT*.
- 3q. An analysis of alternatives for the proposed desalination facility is provided within Section 6.0, *ALTERNATIVES TO THE PROPOSED ACTION*, of the Draft EIR. Feasible alternatives to the proposed off-site underground pump station are limited due to the fact that the underground pump station must be situated in close proximity to the location described in the Draft EIR (partially within the NCCP/HCP boundary), as the necessary connection point for water distribution exists at that location.

It should be noted that alternative locations were evaluated for the proposed underground booster pump station as an alternate to the location adjacent to the NCCP/HCP area, and separate from the proposed second underground pump station in Irvine. The applicant determined that a potentially (technically) feasible alternative exists within the parking lot of Bonita Canyon Sports Park (within the City of Newport Beach), as shown in Exhibit 1, *PUMP STATION ALTERNATIVE – BONITA CANYON SPORTS PARK*. It was determined that, while impacts to biological resources would be substantially reduced, overall environmental impacts of this location (primarily to sports park users and adjacent residents) would be greater in comparison to the proposed location adjacent to the NCCP/HCP boundary. Construction of the underground pump station within the sports park would require an area of disturbance of approximately 125 feet by 125 feet for a period of about six to twelve months. As Bonita Canyon Sports Park is utilized heavily (especially on weekends) for sports leagues (AYSO soccer, Little League baseball, etc.), the sports park's parking capacity would be substantially reduced. Overflow park users would then utilize parking surrounding the sports park, either in nearby residential neighborhoods or the retail/commercial center to the east, thereby adversely impacting adjacent residents and those visiting the retail/commercial center in regards to parking, noise, and traffic. In comparison to the underground pump station location adjacent to the NCCP/HCP boundary, the Bonita Canyon Sports Park alternative is anticipated to result in greater environmental impacts. The underground pump station location adjacent to the NCCP/HCP would avoid or substantially reduce

impacts to neighborhoods, parking and active recreation areas, and potential biological resource impacts have been reduced by shifting the facility slightly west, and residual impacts are anticipated to be adequately mitigated through the applicable regulatory/agency approval processes.

- 3r. Mitigation measures for the proposed underground pump station are included within Section 4.9 of the Draft EIR, *CONSTRUCTION RELATED IMPACTS*. Additional construction/design level mitigation measures will be evaluated for the underground pump station site and wetland area abutting the edge of the southeast corner of the desalination plant as part of the regulatory permitting process. Such mitigation measures will be developed in consultation with appropriate resource agencies.
- 3s. Should it be determined that the project requires a California Endangered Species Act (CESA) Permit subsequent to the completion of pre-construction/focused surveys, the applicant shall adhere to all requirements in order to obtain such a permit.
- 3t. The proposed project would not develop wetlands or convert wetlands to uplands. The proposed project would not involve the installation of subsurface drains within a wetland area, placement of fill or building structures within a wetland, or channelization or removal of materials from a streambed.
- 3u. Comment noted. As noted in Section 3.0, *ERRATA*, the applicant will retain a qualified specialist to perform a jurisdictional delineation of the proposed underground pump station site to determine the extent of jurisdictional area, if any, as part of the regulatory permitting process.
- 3v. As stated above, the applicant will coordinate with the Department of Fish and Game to obtain all necessary permits/agreements, including a Streambed Alteration Agreement or Section 1600 Permit, if necessary. The applicant will consult with the CDFG to develop adequate mitigation, monitoring, and reporting methods in order to mitigate any potential impacts to less than significant levels. In addition, refer to Response 3e, above, for a discussion of "frac-out" concerns for directional borings crossing waterways.
- 3w. The proposed off-site underground pump station facility will be sited outside of NCCP/HCP boundaries. Refer to Response 1c, above.
- 3x. Comment noted. Mr. Paznokas has been contacted by project consultants.
- 3y. This paragraph contains contact information for the agency, and no response is required.
- 3z. These attachments provide information on biological analysis as recommended by the CDFG and will be utilized during the focused survey process. No further response is necessary.



**BONITA CANYON SPORTS
PARK ALTERNATIVE**

Source: Carollo Engineers, January 2003.

RESPONSES TO COMMENTS - POSEIDON SEAWATER DESALINATION PROJECT
Pump Station Alternative - Bonita Canyon Sports Park



PLANNING ■ DESIGN ■ CONSTRUCTION
08/02 JUN 10-101409



/04/2002 10:47 FAX 949 492 8412

ORANGE COAST DISTRICT



State of California • The Resources Agency

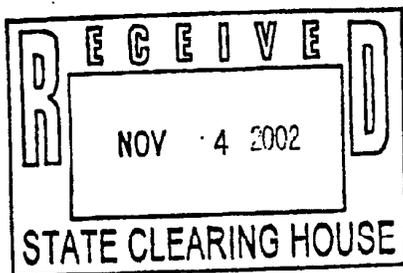
Gray Davis, Governor

DEPARTMENT OF PARKS AND RECREATION

Rusty Areias, Director

Orange Coast District
3030 Avenida Del Presidente
San Clemente, California 92672
(949) 492-0802

November 4, 2002



Clear
11-4-02
e

Ricky Ramos
City of Huntington Beach Planning Department
2000 Main Street
Huntington Beach, California 92648

Re: Poseidon Seawater Desalination Plant – Draft EIR – SCH #2001051092

Dear Mr. Ramos:

Thank you for the opportunity to comment on the Poseidon Desalination Plant Draft Environmental Impact Report. The California Department of Parks and Recreation is responsible for protecting the natural, cultural and recreational resources found at Huntington State Beach. Over two million visitors annually come to Huntington State Beach to enjoy its exceptional coastal resources. As a trustee agency, we submit the following comments to assist your agency in ensuring Impacts relating to the above project do not hinder the public ability to use and enjoy Huntington State Beach.

a

Water Quality

Poor water quality conditions off of the coast of Huntington Beach are an ongoing concern. Sources for bacteria that may contribute to these conditions are numerous and scientific research suggests that the AES intake-outfall system may act as a vehicle by which these bacteria are transported into the surf zone and thus threatening public health. We believe any change in the quantity and quality of water transported through the AES outfall should be closely monitored. Specifically, water quality within the surf zone should be monitored for changes in bacterial levels as well as salinity and other constituents which may impact public health and/or the public's enjoyment of this recreational resource.

b

Aesthetics

Although the proposed aboveground structure(s) are shorter than those currently occupying the project site, we recommend the installation of the "underground" tank option in order to preserve the viewshed from Huntington State Beach.

c

11/04/2002 10:47 FAX 949 492 8412

ORANGE COAST DISTRICT

002

Ricky Ramos - Poseldon Desalination Plant
November 4, 2002
Page 2

Hazardous Materials

The proximity of hazardous materials to the project location, such as the Ascon/NESI landfill site, raises some concern over the possibility of disturbance during the construction phase of the project. As this landfill was a receiver site for hazardous materials such as sulfuric acid, chronic acid and fuel oils for a 35-year period, we believe all areas of slated for construction should be fully mitigated of impacts associated with hazardous materials.

d

Construction Related Impacts

Coastal access should not be impacted by the construction and/or operation of this project. Therefore, parking and vehicle traffic relating to this project should not occur where the public's currently enjoys access the coast, particularly at Huntington State Beach. We do not feel that the EIR has adequately addressed this issue.

e

Thank you for the opportunity to comment on this project.

Sincerely



Richard Rozzelle
Associate Park and Recreation Specialist

Response No. 4

California Department of Parks and Recreation
Richard Rozzelle, Associate Park and Recreation Specialist

- 4a. This paragraph describes the responsibilities of the California Department of Parks and Recreation, and does not require a response.
- 4b. The National Pollution Discharge Elimination System (NPDES) permit (No. CA0001163) issued to AES Huntington Beach, LLC by the Santa Ana Regional Water Quality Control Board (RWQCB) includes specific monitoring requirements for monitoring the discharges through the outfall. Those requirements will continue to apply. In addition, the project will be required to obtain a separate NPDES permit from the RWQCB that will also include monitoring requirements. The RWQCB's Ocean Plan human health standards are designed to protect the beneficial use of body-contact recreation. The discharge from the desalination plant will be required to meet all Ocean Plan standards regulated by the RWQCB.
- 4c. Comment noted. No response is necessary.
- 4d. On-site remediation activities will include the preparation of a Phase I hazardous materials assessment and Remedial Action Plan. Although disruption of the Ascon/Nesi site would not occur as a result of project implementation, the remedial process will address hazardous materials issues involving the Ascon/Nesi site (in regards to groundwater contamination), if any.
- 4e. Long-term operation of the proposed desalination project would require approximately five to seven employees on-site during regular hours Monday through Friday, with a minimum of two employees on-site during swing shifts, graveyard shifts, and weekends. It is anticipated that long-term operation would result in a nominal increase in traffic in the local vicinity of the project site. In addition, on-site parking would be provided for all employees. Delivery and maintenance vehicles would also travel to and from the subject site, however, such operations are also anticipated to result in nominal traffic. In addition, short-term construction traffic would avoid any deficient street segments as identified by the City's "Transportation System Needs Analysis 2000-2010" and would be subject to a City-approved Traffic Management Plan (TMP). The TMP would involve such measures as a truck routing plan and limiting the hours of transport to avoid disturbing surrounding uses. Construction operations would not prohibit coastal access, including access to Huntington State Beach.

DEPARTMENT OF TRANSPORTATION

District 12
3337 Michelson Drive, Suite 380
Irvine, CA 92612-8894



Flex your power!
Be energy efficient!

RECEIVED
NOV 01 2002

FAX & MAIL

October 29, 2002

Ricky Ramos
City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

File: IGR/CEQA
SCH#: 2001051092
Log #: 906A

Subject: Poseidon Seawater Desalination Plant

Dear Mr. Ramos,

Thank you for the opportunity to review and comment on the **Draft Environmental Impact Report dated September 2002 for the Poseidon Desalination Plant Draft Environmental Impact Statement**. The proposed project involves the construction of a 50 million-gallon per day seawater desalination facility. The approximately 3.9-acre project site is located within the southeastern portion of the City of Huntington Beach, within the northeastern portion of the existing AES Huntington Beach Generating Plant located at 21730 Newland Street. The project site is generally located northerly of Pacific Coast Highway (PCH).

a

Caltrans District 12 status is a responsible agency on this project and has the following comments:

- 1. Submit a traffic Management Plan including mitigation measures at the 90% design phase to Caltrans for review and comments.
- 2. Please refer to comments in our previous letter dated June 14, 2001.

b

c

Please continue to keep us informed of this project and other future developments, which could potentially impact our transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Maryam Molavi at (949) 724-2267.

d

Sincerely:

Robert F. Joseph, Chief
IGR/Community Planning Branch

- C: Terry Roberts, Office of Planning and Research
- Ron Helgeson, HQ IGR/Community Planning
- Raouf Moussa, Traffic Operations
- Roger Kao, Hydraulics
- Adel Malek, Traffic Management

STATE OF CALIFORNIA—BUSINESS AND TRANSPORTATION AGENCY

GRAY DAVIS, Gov

DEPARTMENT OF TRANSPORTATION

DISTRICT 12
3347 Michelson Drive Suite 100
Irvine, CA. 92612-0661



RECEIVED
JUN 22 2001
PLANNING

FAX & MAIL

June 14, 2001

Beth Broeren
City of Huntington Beach, Planning Department
200 Main Street
Huntington Beach, CA 92648

File: IGR/CEQA
SCH#: 2001051092
Log #: 906

Subject: Poseidon Seawater Desalination Plant

Dear Ms. Broeren,

Thank you for the opportunity to review and comment on the **Notice of Preparation (NOP)** of the **Poseidon Desalination Plant Draft Environmental Impact Statement**. The proposed project involves the construction of a 50 million-gallon per day seawater desalination facility. The approximately 3.9-acre project site is located within the southeastern portion of the City of Huntington Beach, within the northeastern portion of the existing AES Huntington Beach Generating Plant located at 21730 Newland Street. The project site is generally located northerly of Pacific Coast highway (PCH).

e

Caltrans District 12 status is a responsible agency on this project and has the following comments:

- Submit a traffic Management Plan including mitigation measures at the design phase to Caltrans for review and comment due to the proposed underground alignment of a 24'-36' diameter new pipeline on PCH.
- No additional surface runoff will be allowed to discharge onto PCH.
- Submit final plans to Caltrans for review and comment.
- All activities in Caltrans right of way will require an encroachment permit. Applicants need to plan for sufficient permit processing time, which may include engineering and environmental studies and documentation.

f

g

h

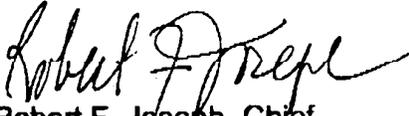
i

June 14, 2001
Page 2

Please continue to keep us informed of this project and other future developments, which could potentially impact our Transportation facilities. If you have any questions or need to contact us please do not hesitate to call Maryam Molavi at (949) 724-2267.

j

Sincerely,



Robert F. Joseph, Chief
Advanced Planning Branch

cc: Terry Roberts, OPR
Ron Helgeson, HDQRTRS Planning
Philip Brierly, Right of Way
Adel Malek, Traffic Management
Roger Kao, Hydraulics

Response No. 5

California Department of Transportation, District 12
IGR/Community Planning Branch
Robert F. Joseph, Chief

- 5a. This text provides a summary of the project description, and does not require a response.
- 5b. Within Section 4.9, *CONSTRUCTION RELATED IMPACTS* of the Draft EIR, Mitigation Measure CON-30 states that a Traffic Management Plan (TMP) shall be approved by affected agencies at least two weeks prior to construction. However, this section shall be amended to note that Caltrans requires submittal of the TMP at the 90% design phase. Refer to Section 3.0, *ERRATA*.
- 5c. Responses to the referenced comments are provide below under 5e through 5j. No response to this comment is required.
- 5d. This paragraph provides contact information for Caltrans, and does not warrant a response.
- 5e. This text provides a summary of the project description, and does not require a response.
- 5f. As reflected in the Draft EIR (Exhibit 4, *CONCEPTUAL PIPELINE ALIGNMENTS*), the pipeline alignment map provided in the Initial Study/Notice of Preparation for the proposed project has been revised to eliminate the 24" to 36" pipeline with Pacific Coast Highway. The applicant shall provide Caltrans with a Traffic Management Plan for review and approval at the 90% design phase of the project.
- 5g. An on-site local stormwater drainage system will be implemented as part of the proposed project. No surface runoff will discharge onto Pacific Coast Highway.
- 5h. As portions of the water delivery pipeline alignment are proposed to traverse Caltrans right-of-way, final plans will be submitted to Caltrans as part of the encroachment permit process.
- 5i. The applicant shall obtain encroachment permits from Caltrans in accordance with Caltrans requirements. No further response is necessary.
- 5j. This paragraph provides contact information for Caltrans, and does not require a response.



California Regional Water Quality Control Board

Santa Ana Region



Winston H. Hickox
Secretary for
Environmental
Protection

Internet Address: <http://www.swrcb.ca.gov/rwqcb8>
3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (909) 782-4130 · FAX (909) 781-6288

Gray Davis
Governor

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.swrcb.ca.gov/rwqcb8

November 4, 2002

Ricky Ramos
City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

RESPONSE TO DRAFT ENVIRONMENTAL IMPACT REPORT POSEIDON SEAWATER DESALINATION PROJECT / STATE CLEARING HOUSE NUMBER 2001051092

Dear Mr. Ramos:

Staff of the Regional Water Quality Control Board, Santa Ana Region (RWQCB), has reviewed the Draft Environmental Impact Report (DEIR) for the above referenced project. The project proposes to implement a seawater desalination plant producing about 50 million gallons per day (mgd) of potable water. The project consists of the following components: The desalination plant will be constructed at the AES Huntington Beach Power Generation Station using the existing intake and discharge facilities (pipes) and above ground storage tanks. Presently, up to 507 mgd of ocean water is drawn into the intake structure and pumped through the steam condensers of the AES plant. The heated water is then discharged through an outfall pipeline back into the ocean. The proposed plant will divert up to 100 mgd of the heated condenser cooling water as source water for the desalination process. The source water will be first treated by filtering and the addition of coagulants. This water will then be chlorinated intermittently to prevent microbiological growth on the reverse osmosis filters and then de-chlorinated using sodium bi-sulfite. Next, the source water will be sent through a reverse osmosis system (RO). In addition to the maximum of 50 mgd of potable water produced by the RO process, a maximum of 50 mgd of concentrated seawater or brine waters will be generated as a waste product. The brine waters (at a salinity concentration of about 68 parts per thousand or twice the concentration of seawater) will re-enter and blend with up to 407 mgd of the AES Plant's condenser cooling water for discharge back into the ocean. The treated potable water will be transported via water transmission lines, to be constructed, to an existing regional transmission and local water distribution systems located in the City of Costa Mesa. The treatment filters will require daily cleaning and up to 4 million gallons of filter backwash water will be combined with the brine waters for discharge into the ocean. The RO membranes will be periodically cleaned, normally twice a year, to remove the accumulation of silts and scale. Industrial soaps, weak solutions of acids, and sodium hydroxide will be used in the cleaning process. It is proposed that the first flush of the cleaning solution will be discharged into the local sanitary sewer. The flush water following the "first flush" will be diluted with the brine discharge, treated filter backwash, and AES cooling water discharge, and then sent out the AES outfall.

a

Staff of this Regional Board have the following comments concerning this project:

1. The DEIR states that the maximum level of salinity near the outfall as a result of the discharge from the proposed facility will be 55.0 ppt at mid-depth, 50.1 ppt at the surface, and 48.3 ppt at the base of the outfall tower. The DEIR also states that salinity levels over 40 ppt are detrimental to

b

California Environmental Protection Agency



Recycled Paper

Ricky Ramos
City of Huntington Beach

2

November 4, 2002

most marine organisms. In addition, some levels of detergents, coagulants, acids, and other chemicals used in the pretreatment and desalination process, including periodic membrane cleaning, will be discharged with the potential to impact marine life. We are concerned that the discharge quality from the proposed facility may adversely impact water quality beneficial uses. The area of the outfall has been designated with several beneficial uses such as for recreation, sports and commercial fishing, and as habitat for marine organisms. It is common knowledge that this area is home to species of marine organisms that are important recreationally such as sand bass, halibut, and grunion. The EIR must thoroughly examine the potential for the proposed discharge to affect the sport fishing beneficial use of the area of the discharge. If impacts are anticipated, it will be necessary to mitigate for the impacts created. Consult with the California Fish and Game Department on appropriate mitigation measures.

b

2. The Clean Water Act requires that each state develop and adopt a statewide antidegradation policy. Our state's antidegradation policy requires the continued maintenance of existing high quality waters unless there is a demonstration that: (1) allowing some degradation is consistent with the maximum benefit to the people of the state; and (2) that such degradation would not unreasonably affect existing or potential beneficial use. It is the responsibility of the project proponent to make a clear demonstration of compliance with this policy. This would include a program that would monitor chemical, physical, and biological parameters in the area affected by the discharge.

c

3. The Huntington Beach area is a very popular recreational area for beach activities such as swimming and surfing. The DEIR shows that the plume from the discharge may, at least to some degree, impact the beach area. It is important that the discharge does not impact the water contact recreation (REC-1) beneficial use of the area by altering physical or chemical characteristics such as discoloration of the ocean surface, reducing visibility, or decreasing significantly the dissolved oxygen level.

d

4. We recommend working closely, early on, with staff of this Regional Board and the State Water Resources Control Board (SWRCB) in obtaining the required NPDES permit for this project. Contact Jun Martirez of this Regional Board at (909) 782-3258 for information on obtaining the NPDES permit. If a mixing zone is to be used as part of the permit then contact Chris Beegan of the SWRCB at (916) 341-5577 for information.

e

5. The discharge of brine, detergents, acids, and other substances associated with the operation and maintenance of the desalination process may be harmful to the fauna and flora of both the sanitation system and the ocean. Toxicity testing must be completed to show that the discharge will not significantly impact this aquatic life.

f

6. Consider disposing all process cleaning wastes to the sanitary sewer system. In addition, if impacts from the brine discharge are found then consider discharging the brine in a manner that disperses in it in a more efficient way. One possibility would be to discharge the brine through the Orange County Sanitation Districts short outfall pipe.

g

7. As a result of the proposed construction activity occurring in an area over five acres, a General Construction Activity Storm Water Runoff Permit must be obtained by the project proponent. A notice of intent (NOI) with the appropriate fees for coverage of the project under the General Construction Activity Storm Water Runoff Permit must be submitted to the State Water Resources Control Board at least 30-days prior to initiation of construction activity at the site. Contact Mark Smythe at (909) 782-4998 or review the Construction Activity General Permit and Fact Sheet on the SWRCB website www.swrcb.ca.gov for information.

h

California Environmental Protection Agency



Recycled Paper

Ricky Ramos
City of Huntington Beach

3

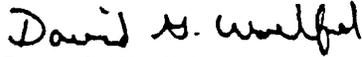
November 4, 2002

7. Appropriate best management practices (BMPs) must be developed and implemented during construction to control the discharge of pollutants, prevent sewage spills, and to avoid discharge of sediments into the streets, storm water conveyance channels, or waterways.

] i
] j

Thank you for your effort, through meeting with our staff, in informing us on this project. If you should have any questions, please call me at (909) 782-7960 or Mark G. Adelson at (909) 782-3234.

Sincerely,



David G. Woelfel
Planning Section

cc: Scott Morgan - State Clearinghouse

Response No. 6

California Regional Water Quality Control Board, Santa Ana Region
Planning Section
David G. Woelfel

- 6a. This paragraph provides a summary of the project description, and does not require a response.
- 6b. The disposal method for reverse osmosis membrane cleaning solution will be determined during the design phase of the proposed project. However, should the cleaning solution be discharge through the AES outfall structure, chemical levels would either be below detection limits or regulatory limits, and the discharge would comply with all NPDES regulations.

Recreationally important sportfish in the area include barred sand bass (*Paralabrax nebulifer*), California halibut, California grunion (*Leuresthes tenuis*), and kelp bass (*Paralabrax clathratus*). Surveys conducted in the immediate vicinity of the Huntington Beach discharge since the 1970's indicate that these species have not been taken in great numbers in the area.¹⁸ California halibut was the most commonly collected of these sportfish species, being the fifth most abundant fish in long-term otter trawl surveys, but still only accounting for 0.5 percent of the total fish abundance with less than 700 fish caught during 26 years of surveys. The other three species each accounted for less than 0.01 percent of the long-term otter trawl catch. Surveys conducted in-plant at the Huntington Beach Generating Station to estimate fish entrainment similarly suggest that these sportfishing species are not abundant in the immediate area of the intake and discharge. California grunion was the most abundant sportfish species impinged, ranking seventh in long-term abundance with an estimated 42,300 grunion impinged in 26 years of plant operations. Still, grunion account for only 0.8 percent of all fish impinged at the generating station. Barred sand bass ranked fifteenth, California halibut twentieth, and kelp bass twenty first, each accounting for less than 0.1 percent of the total catch. These studies suggest that the area most likely to be impacted by increases in salinity in the immediately vicinity of the discharge is not densely populated by these sportfish species.

Commercial fisheries in California Department of Fish and Game Catch Blocks 738 and 739, immediately downcoast and offshore of the AES Huntington Beach discharge, respectively, are dominated by Pacific sardine (*Sardinops sajax*), market squid (*Loligo opalescens*), Pacific mackerel (*Scomber japonicus*), and northern anchovy, all of which are highly mobile, schooling pelagic species.¹⁹ In Catch Block 738, south of the discharge, California spiny lobster (*Panulirus interruptus*) is heavily fished among offshore reefs from Newport Beach, to the south, while California halibut is an important commercial species in Catch Block 739. Catch Blocks can be up to 100 square nautical miles (approximately 84,750 acres), although Catch Block 738 covers a smaller area. Plume and discharge modeling for the desalination plant discharge predicts a maximum benthic area of 15.6 acres and maximum pelagic area of 18.3 acres impacted by a 10 percent increase in salinity during the worst case scenario.²⁰

The area potentially exposed to as much as a 10 percent increase in salinity as a result of the RO plant discharge is relatively small, even in the worst case model. A 10 percent

¹⁸ MBC, 2001 (Appendix F of the Draft EIR).

¹⁹ California Department of Fish and Game, 2002.

²⁰ Jenkins and Wasyl, 2001 (Appendix D of the Draft EIR).

anomaly is within the normal variability of seawater salinity and would be tolerated by most fish species. Mobile species have the ability to avoid areas that they cannot tolerate and, since sharp salinity gradients may act as barriers to the movements of fish.²¹ Plume and discharge modeling indicate that the Huntington Flats, a variable, recreationally important fishing area upcoast and offshore of the discharge structure, is outside of the area of influence to the saline discharge, which is predicted to move predominately downcoast because of local currents.²² Downcoast, recreational fishing offshore of the Santa Ana River and at the Newport Beach Pier, which are common fishing areas, are outside of the area of predicted influence from the saline discharge. No significant impact to local fish populations as a result of the addition of the concentrated seawater by-product is expected. No reduction in the beneficial use for recreational or commercial fishing in the area is expected as a result of the addition of the saline discharge.

- 6c. Comment noted. The project proponent will be required to comply with the statewide antidegradation policy as a part of the NPDES permit.
- 6d. Refer to Response 4b, above.
- 6e. Comment noted. No further response is necessary.
- 6f. Comment noted. The project proponent may be required to conduct toxicity testing as a part of the National Pollution Discharge Elimination System (NPDES) permit.
- 6g. The disposal method for reverse osmosis membrane cleaning solution will be determined during the design phase of the proposed project. However, should the cleaning solution be discharged through the AES outfall structure, chemical levels would be below either detection limits or regulatory limits, and the discharge would comply with all NPDES regulations. Utilizing the OCSD short outfall pipeline to discharge the proposed desalination facility's byproduct water is not being considered, as the short outfall is currently utilized as an emergency outfall by OCSD. In addition, a separate outfall utilized solely for the proposed desalination facility's byproduct water would result in increased marine water quality impacts, as blending and dispersion would not occur as quickly (the combination of byproduct water and AES cooling water aids blending and dispersion).
- 6h. As stated in Section 4.9 of the Draft EIR, *CONSTRUCTION RELATED IMPACTS* (Mitigation Measure CON-3), the applicant will obtain a General Construction Activity Storm Water Runoff Permit and will submit a Notice of Intent to the State Water Resources Control Board in accordance with all requirements.
- 6i. As stated within the Section 4.9, *CONSTRUCTION RELATED IMPACTS* of the Draft EIR, appropriate Best Management Practices (BMP's) will be utilized during short-term construction of the proposed project. In addition, the project will comply with all County Drainage Area Management Plan (DAMP) and National Pollution Discharge Elimination System (NPDES) requirements.
- 6j. This paragraph provides contact information for the Santa Ana Regional Water Quality Control Board (SARWQB), and does not require a response.

²¹ Holliday, 1971, cited in Reynolds, 1973.

²² Jenkins and Wasyl, 2001 (Appendix D of the Draft EIR).

STATE OF CALIFORNIA

GRAY DAVIS, Governor

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202



PAUL D. THAYER, Executive Officer
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone 1-800-735-2922
from Voice Phone 1-800-735-2929

Contact Phone: (916) 574-1892
Contact FAX: (916) 574-1925

October 29, 2002

File Ref: PRC 1980

Ms. Nadell Gayou
The Resources Agency
1020 9th Street, 3rd Floor
Sacramento, CA 95814

Mr. Ricky Ramos
City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

Dear Ms. Gayou and Mr. Ramos:

SUBJECT: Draft Environmental Impact Report (EIR) for the Poseidon
Seawater Desalination Project, Huntington Beach,
SCH 2001051092

Staff of the California State Lands Commission (CSLC) has reviewed the subject document. Under the California Environmental Quality Act (CEQA), the City is the Lead Agency and the CSLC is a Responsible and/or Trustee Agency for any and all projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters.

a

The project proponent, Poseidon Resources Corporation, proposes to construct and operate a seawater desalination facility, storage facilities and pipelines to produce drinking water to meet the needs of the Southern California Region, particularly Orange County. The facility will be located on a portion of the existing AES Huntington Beach Generating Station (AES). The project will require the demolition of three fuel storage tanks and the remediation of any soil/groundwater impacted by contamination. The facility would intake seawater from the Pacific Ocean through an existing AES intake line and discharge byproduct through an existing AES outfall line. The CSLC requests that the Lead Agency address the following comments in the Final EIR.

b

Ms. Nadell Gayou
Mr. Ricky Ramos
October 29, 2002
Page 2 of 5

CSLC Jurisdiction

Both the intake and outfall lines are covered under a lease issued by the CSLC to AES Huntington Beach, LLC (Lease No. PRC 1980). That lease authorizes the use of these lines specifically for the intake and discharge of cooling water in conjunction with the operation of AES' upland facility. Any other intended use of the intake/discharge lines will require formal authorization by the CSLC. The project proponent and/or our current lessee will need to contact the CSLC concerning our application process.

C

Environmental Review

Page 4.3-6 of the Hydrology and Water Quality Section of the DEIR incorrectly implies that only the Ocean Plan's narrative water quality objectives apply to the proposed project. While the Thermal Plan establishes objectives for temperature, water quality objective 7a on Page 5 of the 2001 California Ocean Plan states that "Table B water quality objectives apply to all discharges within the jurisdiction of this Plan." As a result, the DEIR must include an analysis of the impact of (and consistency between) the proposed discharge based on all applicable numeric objectives in Table B. As stated in the Ocean Plan, compliance with these numeric objectives is necessary for the protection of marine aquatic life.

d

The description of the potential impact of the proposed discharge starting on Page 4.3-9 of the DEIR refers to extensive computer modeling studies contained in Appendix C. While Appendix C describes estimated dilution and distribution of the proposed discharge plume, it does not appear to relate this information to compliance with the specific Table B numeric water quality objectives contained in the California Ocean Plan. As a result, the water quality impact conclusions contained in the DEIR are incomplete and do not appear to be supported by the necessary data-driven analysis.

e

The analysis of brine discharge impacts on marine biological resources is contained solely in the Hydrology and Water Resources section of the DEIR; there is no separate section for assessing impacts to Marine Biological Resources. However, the Hydrology and Water Resources section does not include any significance criteria for impacts to marine biological resources. The DEIR needs a separate section, with appropriate significance criteria, for analyzing impacts to marine biological resources.

f

The DEIR does not appear to state whether or not giant kelp exist in the proposed offshore discharge area, or if kelp spores move through this area. Also, although they may not be identified by the DEIR as a "Core Marine Species" (see p. 4.3-4), are sea urchins present in this area? These marine resource issues are particularly important given the discussion in the California Ocean Plan, 1999-2002 Triennial Review Workplan. In "Issue C.3.d: Water Quality Objectives To Address

g

Ms. Nadell Gayou
Mr. Ricky Ramos
October 29, 2002
Page 3 of 5

Specific Pollutants In Waste Discharges From Desalination Facilities (August 1998 Staff Report Issue C.3.d)", the State Water Resources Control Board staff made the following observations:

A recent study (1992-1993) conducted by the Southern California Coastal Water Research Project (SCCWRP) investigated the toxic effects of waste brine and waste brine-sewage mixtures on marine life (SCCWRP, 1994). The organisms studied were the giant kelp (*Macrocystis pyrifera*), the amphipod (*Rhepoxynius abronius*), and the purple sea urchin (*Strongylocentrotus purpuratus*). The endpoints examined were percent germination and germ tube growth for the giant kelp test, survival for the amphipod test, and percent normal development for the purple sea urchin. The study results indicated elevated salinity significantly affected sea urchin development. Percent normal development was reduced substantially at a salinity concentration of 36.5 parts per thousand (ppth), only slightly higher than the seawater control salinity (33.5 ppth). Though the slightly elevated salinity did not affect kelp spore germination or tube length or amphipod survival, other studies have found desalination plant brine is toxic to kelp spores (a study conducted by ABC Labs in 1992 on Santa Barbara's reverse osmosis desalination plant brine) (SCCWRP, 1994).

g

Note that the 36.5 ppth value stated in the citation above is an ~8% increase in background salinity, a number that is not addressed in the DEIR (which relies heavily on a 10% threshold).

The DEIR examines only worst-case and average scenarios for potential impacts to marine biological resources associated with water quality changes from the brine discharges. The worst-case is dismissed because the models used show that the worst case would occur < 1% of the time. However, the DEIR leaves open the possibility that potential significant impacts to marine biological resources could occur under certain facility operational and environmental conditions between average and worst case. The DEIR should still identify those operational and environmental conditions where significant impacts could occur (i.e., between average and worst case), and place limits on the operation of the desalination facility during those times (i.e., a prohibition on brine discharges when specified weather and facility operational circumstances occur).

h

What is the status of the Ocean Plan review of desalination discharges? The draft of the last Triennial Review indicated that the SWRCB would be looking into this issue, and would be clarifying language in Section C.3.d. (Water quality objectives *specific to waste discharges from desalination facilities*). *This could affect comment #2 above.*

i

Thank you for the opportunity to comment. Questions concerning the CSLC's application process should be directed to Jane E. Smith, Public Land Management

j

Ms. Nadell Gayou
Mr. Ricky Ramos
October 29, 2002
Page 4 of 5

Specialist, at (916) 574-1892. Comments on the environmental review should be directed to myself at (916) 574-1814.

↑
j

Sincerely,



Stephen L. Jenkins, Asst. Chief
Division of Environmental Planning and
Management

cc: Jane E. Smith
Cy Oggins

Response No. 7

California State Lands Commission
Division of Environmental Planning and Management
Stephen L. Jenkins, Assistant Chief

- 7a. This paragraph describes the agency's duties and responsibilities, and does not require a response.
- 7b. This paragraph provides a summary of the project description, and does not require a response.
- 7c. This ownership and permit information has been incorporated into Section 3.0, *PROJECT DESCRIPTION* of the Draft EIR as shown in Section 3.0, *ERRATA*.
- 7d. The numeric objectives of the 2001 California Ocean Plan, Table B, will apply to discharges from the proposed desalination plant (these objectives currently apply to discharges from the AES power plant), and will be evaluated by the Regional Water Quality Control Board as part of the National Pollution Discharge Elimination System (NPDES) permit for the project (refer to Response 4b). The requested analysis of compliance with the Ocean Plan numeric objectives will be completed at that time. The Draft EIR concluded that the project will not have any significant impact on marine aquatic life, and no other data have been identified to suggest otherwise. Also refer to Appendix C to these Responses to Comments.
- 7e. Refer to Response 7d, above.
- 7f. The analysis of the potential environmental impacts of the proposed project's byproduct discharge is separately addressed in a specific subsection of Draft EIR Section 4.3, *HYDROLOGY AND WATER QUALITY*, entitled "Water Quality Impacts to Marine Biological Resources" (on pages 4.3-12 through 4.3-20). That analysis summarizes extensive modeling studies included in Appendix C and Appendix D of the Draft EIR. In addition, Appendix F of the Draft EIR provides an overview of potential physical and climatic impacts on biological resources as a result of project implementation. Appendix F also acquaints reviewers with the extensive time-series biological survey and environmental monitoring database compiled for the near shore habitat adjacent to the Huntington AES discharge site over the past 27-plus years by Marine Biological Consultants, Inc. (MBC).

MBC studies have documented both the macro-invertebrate species and fishes occurring in this habitat. MBC has also described the year-to-year and seasonal variations in both the absolute numbers of individuals and in species diversity in this region, which is in part attributable to climatological, oceanographic, biological, and other influences.

MBC research documents that this area is an expanse of open water with a sandy substrate that slopes seaward. There are no "environmentally sensitive habitats," such as kelp bed stands, rocky shores, eel grass or surf grass meadows, in the vicinity of the Huntington AES discharge tower. In fact, a largely homogeneous and contiguous subtidal landscape, consisting of open water and a flat, sloping sandy bottom extends across depths from 1 to 20 meters from as far downcoast as Balboa Island up to Huntington State Beach (14th Street).

In summary, an extensive biological database exists for the Huntington Beach coast and areas upcoast and downcoast. The same type of marine community that exists near the subject site also extends for a great distance along the coast and at many other sites in the Southern California Bight. This habitat is well studied, particularly around the proposed project site by MBC.

The comment suggests that an "appropriate significance criteria for analyzing impacts to marine biological resources" has not been identified or utilized in the Draft EIR because a "separate section" has not been included in the Draft EIR to analyze potential impacts to marine biological resources. However, the majority of the information in the Draft EIR Appendices (as summarized in the specific subsection of Section 4.3, *HYDROLOGY AND WATER QUALITY* of the Draft EIR "Water Quality Impacts to Marine Biological Resources") is devoted to establishing "significance criteria" for analyzing such impacts. The salinity discharge model developed by Scott Jenkins and Joe Wasyl (summarized in the Draft EIR and included in the Draft EIR Appendices) shows that expected salinity extremes at and around the discharge will not be severe. The criteria used by the Draft EIR to determine the significance of potential impacts to marine biological resources is to extrapolate the potential biological impacts resulting from the salinity increase caused by the discharge. By detailing the salinity tolerances of species that occur in the Huntington Beach discharge area (or of species that are either the ecological equivalents of, or are closely related to, the species living there), these studies provide the basis for predicting a less than significant impact. Many of the species occurring in the Huntington Beach habitat have broad geographic distributions along the Pacific coast that extend into areas where ambient salinity is considerably above 33.5 ppt (along lower Baja California, for example). These salinity extremes and exposure tolerances of most marine organisms vastly exceed the extremes associated with both "average" and "worst case" scenarios as contained within the Draft EIR.

- 7g. Purple urchin data suggest a surprisingly low threshold-salinity effect.²³ However, as the benthic habitat surrounding the AES outfall structure is sandy in nature, suitable habitat for kelp and purple urchins does not exist. Neither kelp nor purple urchins would be expected to be in the vicinity of the Huntington discharge tower.

It would, however, be reasonable to expect kelp spores to be present in the plankton drifting past the discharge. However, due to the expected drift-time exposure there would be no resulting significant impact.

Many of the same marine species residing within the site vicinity or species closely related to them also live in the northern Gulf of California where salinity is 35-38 ppt. Among the most abundant macro-infaunal species living near the discharge are annelid worms and hermit crabs. While there are no salinity tolerance data for the particular species living within the vicinity of the subject site, there are literature data for these same kinds of animals (although not the same species) indicating a capacity to tolerate much greater salinities for longer times than will occur at the desalination discharge site. Similar data exist for fish, for fish eggs and larvae, and for a number of marine in-faunal invertebrates.

²³ Bay, S. and Greenstein, D. "Toxic Effects of Elevated Salinity and Desalination Waste Brine." Southern California Coastal Water Research Project (SCCWRP), 1992-1993.

In addition, published salinity tolerance data for several fish species common to the coastal environment around Huntington Beach indicate threshold tolerance levels for eggs, juveniles, and adults that are far in excess of the salinity levels predicted for RO operations.

Also relevant is a study of a salinity discharge into Parham Harbor on the Caribbean island of Antigua (see Appendix D of these Responses to Comments). For this study scientists were able to divert the desalination discharge to a pristine part of the bay. They did pre-discharge diversion ecological- and health-status studies on the organisms and then made similar post-diversion observations at three and six months. They reported no changes in the biota, no salinity effects on movement of organisms or on the growth and abundance of sea grasses. Urchins and sea stars occurred in the concentrated salinity field which, at the point of discharge averaged about five ppt greater than ambient.

The use of the 10 percent salinity increase standard is based on the range of salinity variation that Jenkins and Wasyl reported when developing their 20-year modeling time series. The +10 percent salinity contour thus became an integral part of the Jenkins and Wasyl data presentation. Normal salinity in all coastal southern California waters is 33.5 ppt. A 10 percent increase raises this to 36.9 ppt. An 8 percent increase is 36.2 ppt. It would be difficult to both detect and interpret different biological responses evoked by this small salinity difference.

- 7h. This comment is based on the recognition that the tolerance of marine organisms to salinity perturbations is a function of both the salinity change and the time duration of the salinity exposure.

Reports summarized in the Draft EIR show that, under average conditions, the rise in salinity in the discharge area is both small and likely within the tolerance range of all species living in the pelagic (open water) area, including planktonic organisms (eggs, larvae, zoo- and phytoplankton and kelp spores) whose drift trajectory carries them into the area. Also, fishes and other vertebrates that swim into the increased salinity area are not likely to be affected. The benthic (bottom dwelling) invertebrates living in the sand around the discharge, will have to adapt to a chronic and permanent salinity increase on the order of 10% above ambient (about 36.9 ppt). This should also be within the tolerance capacity of most benthic species.

Formulation of the "worst case" conditions for the Draft EIR was based on a hypothetical (but possible) combination of operational (low power plant cooling water flow) and environmental conditions (minimum mixing of ocean water) that would maximize salinities in the discharge area.²⁴ Specifically, the "worst case" model assumes a low discharge rate of 76.7 mgd . This includes 50 mgd of the higher concentrated discharge. It further assumes that the waters surrounding the discharge site have an unusually low propensity to mix with the discharge. This combination of events establishes a low mixing (or dilution) rate of the more concentrated discharge water (i.e., it is one part normal salinity and two parts double the normal salinity). Also refer to Responses 2d and 2e, above.

Because the sets of conditions required to initiate the worst case involve the simultaneous occurrence and sustained prevalence of environmental and operational variables in unfavorable alignments that also tend to be mutually exclusive, the "worst

²⁴ Jenkins and Wasyl, 2001 (Appendix D of the Draft EIR).

case” condition would rarely, if ever, occur (refer to Response 10e, below). Further, based on the history of power plant operations, it is unlikely that the “worst case” discharge level would remain at 76.7 mgd for the time needed to trigger worst case conditions. Unless there was an emergency or the need for unscheduled maintenance, power production (i.e., water flow rate) would remain at a higher level, particularly during the summer months. Summer is when power requirements are highest and when oceanographic conditions unfavorable for mixing would most likely occur. In other words, low power plant water flow and summer conditions of warm stable water with a low mixing potential are extremely unlikely to occur simultaneously.

However, even if the “worst case” conditions could be perpetuated indefinitely, the saline stress exerted upon organisms living in the water column is limited by short exposure times caused by the drift rates of nearshore currents flowing past the outfall.²⁵ Exposure to the maximum salinity of the inner core of the discharge plume (53-55 ppt) occurs for at most seven minutes, while about a 35-minute exposure could occur along the fringes of the inner core (40-50 meters from the outfall) where salinities are 50 ppt. In the outer core where salinities are nominally 45 ppt, the exposure time of a drifting organism would be about 1 hour, and about 2.2 hours along the outer fringes of the outer core where salinities decline to 38 ppt. Therefore, the exposure time of pelagic organisms to a perpetual “worst case” salinity change is well within known tolerance limits.²⁶

Consequently, the issue of marine impacts arising from combinations of salinity change and exposure times that are intermediate between “worst” and “average” conditions is confined to the benthic ecology because it is quasi-stationary and cannot limit its exposure time by water motion effects. The region of principle concern is where the highest salinity change occurs (i.e. where the inner core of the discharge plume meets the seabed). The radius of the inner core varies between 40 and 50 meters (measured from the center of the outfall). For “worst case” conditions, the highest bottom salinity found anywhere is 48.3 ppt at the base of the outfall tower, rapidly falling to 41 ppt at the outer fringes of the inner core.²⁷ As stated within Appendix C of the Responses to Comments, *NARRATIVE FOR THE POWER POINT PRESENTATION, “ORANGE COUNTY DESALINATION PROJECT: MARINE BIOLOGICAL ANALYSIS”*, The threshold tolerance limits for a salinity change at prolonged or chronic time is about 40 ppt; therefore, the area of benthos exceeding this 40 ppt limit in a perpetual worst case is about two acres. Extending further outward from the outfall into the outer core, bottom salinities are slightly in excess of those in the water column for a given distance from the outfall. At the outer fringes of the outer core for worst case, bottom salinities are 38 ppt, within tolerance limits for indefinitely long exposure time. For average conditions, salinity changes at the seabed are everywhere within tolerance limits for indefinitely long exposure, with the highest bottom salinity found anywhere reaching about 38 ppt at the base of the outfall tower, rapidly falling to 35 ppt at the outer fringes of the inner core.

In summary, the Draft EIR analysis reduces potential marine impacts to a two-acre region of seabed for infinitely long exposure to worst-case salinity changes (and concludes that those conditions will occur less than one percent of the time). For intermediate salinity changes that are less than the “worst case” and higher than the “average case” evaluated by the Draft EIR studies, the impacted area of benthos is likely to be relatively small (in comparison to the amount of benthos with similar characteristics in the site vicinity and throughout the Southern California bight, which is over 440,000

²⁵ Jenkins and Wasyl, 2001 (Appendix D of the Draft EIR).

²⁶ Graham, 2002 (Appendix C of the Responses to Comments).

²⁷ Jenkins and Wasyl, 2001 (Appendix D of the Draft EIR).

acres in size) due to the mutually exclusive operational and environmental conditions required to achieve high salinity changes (i.e. low electrical production during calm - ocean summer periods).

- 7i. Refer to Response 7d, above.
- 7j. This paragraph provides contact information for the agency, and does not warrant a response.

