



POSEIDON SURFSIDE

a Poseidon Water company

May 9, 2017

Mr. Eric Sklar
President
California Fish and Game Commission
1416 Ninth Street, Room 1320
Sacramento, CA 95814

SUBJECT: Huntington Beach Desalination Project

Dear President Sklar:

I am writing in response to your February 1, 2017 letter to the California Coastal Commission regarding the proposed Huntington Beach Desalination Project ("Project"). A copy of your letter was recently provided to us by the State Water Resources Control Board staff on May 4, 2017.

Poseidon supports the California Fish and Game Commission's mission to ensure the long-term sustainability of fish and wildlife. Our Carlsbad Desalination Plant, the state's first and only large-scale seawater desalination plant, has successfully produced over 20 billion gallons of drinking water since starting commercial operation in December 2015 while operating in accordance with applicable state and federal environmental laws and regulations. The Carlsbad project includes the restoration of 66 acres of wetlands in south San Diego Bay, an endeavor undertaken in cooperation with the U.S. Fish and Wildlife Service that will measurably enhance fish and wildlife habitat. In addition, with the adjacent Encina Power Station scheduled to decommission its cooling water system soon, Poseidon is poised to serve as the long-term steward for the resource-rich Agua Hedionda Lagoon, 300 acres of sensitive and vital coastal wetlands.

Based on the comments in your February 1, 2017 letter I want to make sure the Fish and Game Commission and its staff are correctly informed about our proposed Huntington Project and its relationship to the state's Marine Protected Areas (MPAs) and the Commission's effort to preserve marine ecosystem functions and oversee species-specific management.

The proposed Project has been in the state's permitting process since 2002. Over the past fifteen years the Project has successfully obtained permits and environmental approvals from the City of Huntington Beach, the Santa Ana Regional Water Quality Control Board ("Regional Board") and the California State Lands Commission ("SLC"). These environmental approvals include the Project's Subsequent Environmental Impact Report ("SEIR") (State Clearinghouse No. 200151092) certified by the City of Huntington Beach on September 7, 2010 and subsequently relied upon by the SLC and Regional Board for the agency's respective approvals of the Project.

Poseidon Surfside

17011 Beach Blvd., Suite 900 Huntington Beach, California 92647 Phone: (714) 596-7946 Fax: (714) 596-7947
www.poseidonwater.com

More recently, the proposed Project description has evolved and been amended to demonstrate compliance with the requirements of the California State Water Resources Control Board's Seawater Desalination Ocean Plan Amendment ("Desalination Amendment"). Poseidon's proposed Huntington Beach Project will be the first large-scale desalination facility in the world to deploy 1mm (1/25th inch) slot width wedgewire intake screens with a through-screen water velocity of less than 0.5 feet per second in an open-ocean setting. The plant will also include state-of-the-art brine diffuser technology that will ensure that the salinity level in the plant's seawater discharge meets the Desalination Amendment's stringent new receiving water quality requirements. These technologies will minimize the intake and mortality of all forms of marine life. Because of these technology enhancements the Project's long-term, stand-alone operation will continue to provide 50 MGD of drinking water but only require an average annual volume of source water of approximately 106 MGD, or 30% less water than the 152 MGD analyzed in the City of Huntington Beach's 2010 SEIR.

The current proposed Project description was informed, in large part, by the outcome of a site-specific assessment of the feasibility of subsurface seawater intake technologies. Between 2014-15, at the direction of the Coastal Commission, the Coastal Commission staff and Poseidon jointly convened an Independent Scientific & Technical Advisory Panel ("ISTAP") to reach a scientifically justified and independent assessment of the feasibility of subsurface seawater intake systems. During the two-year process, which included public participation, the ISTAP evaluated nine different subsurface intake technologies and different project scales (i.e., product water production capacities) ranging from a plant capable of producing 12.5 MGD to 100 MGD of drinking water. Based on the application of the Coastal Act's and Desalination Amendment's definition of feasibility, the ISTAP concluded that eight (8) of the nine (9) subsurface intake technologies – including all beach well technologies - were technically infeasible, and a the ninth (9th) technology – a seafloor infiltration gallery - was not economically viable at the Huntington Beach location within a reasonable time frame. To our knowledge, the Commission's ISTAP process is the most comprehensive, independent evaluation of the site-specific feasibility of subsurface seawater intake technologies ever conducted.

Your February 1, 2017 letter characterized the feasibility standards in the Desalination Amendment as providing "unfortunate" technology flexibility; however, the requirement that a project be feasible is codified in state law - both the Coastal Act and California Water Code – with the Water Code requirement recently being affirmed by the California courts (*Surfrider Foundation v. the California Regional Water Quality Control Board, San Diego Region, Fourth District Court of Appeal case No. Do60382.*), which in turn helped inform the development of the Desalination Amendment.

The Fish and Game Commission's concern about the potential effects screened seawater intakes could have on the state network of MPAs is understood; however, the proposed Project's intake and discharge structures are not located within or nearby any MPA. The

Poseidon Surfside

17011 Beach Blvd., Suite 900 Huntington Beach, California 92647 Phone: (714) 596-7946 Fax: (714) 596-7947
www.poseidonwater.com

nearest Area of Special Biological Significance is located more than nine (9) miles southeast and down current. The nearest MPA is the Bolsa Chica State Marine Conservation Area, which is approximately 4.3 miles northwest.

Any concerns to the state's MPAs should be based on Project and site-specific facts. A key marine life finding in the Project's EIR on this point states:

Impacts on marine organisms due to the potential entrainment resulting from the project are relatively small, and would not substantially reduce populations of affected species, or affect the ability of the affected species to sustain their populations. Therefore, entrainment impacts would be less than significant.

This CEQA finding is supported by site-specific information, empirical data and statistical analysis including:

- **The intake area does not have any environmentally sensitive habitats such as eelgrass beds, surfgrass, rocky shores, or kelp beds;**
- **No larvae of threatened or endangered species are anticipated to be entrained;**
- **Potential entrainment of larval species of commercial or recreational value will be extremely rare;**
- **Operation of the desalination facility may entrain 0.02% of the larva in the source water and at risk of entrainment, meaning only 2 out of every 10,000-at-risk larval are anticipated to be entrained.**

It's important to note these potential impacts do not take into consideration that the 1mm wedgewire screens will reduce entrainment and eliminate impingement of larger marine life (e.g., seals, sea lions, sea turtles, and adult fish like Kelp Bass and California Sheephead). The entrainment reducing potential of the wedgewire screens is a function of slot size relative to organism size, the behavior of organisms near the screen, and ambient hydrodynamics. The influence of organism behavior (swimming ability) and ambient hydrodynamics are documented by the 2010 Santa Cruz Water District pilot study <https://www.youtube.com/watch?v=bSEmJZmJRMU>.

In 2015, at the request of the Coastal Commission staff, Poseidon specifically analyzed the relationship between the proposed Project's ocean intake and the state's networks of MPAs. Tenera Environmental issued a report entitled "Assessment of Entrainment Effects Due To The Proposed Huntington Beach Desalination Facility On State Marine Protected Areas" which concludes that 91% of larvae estimated to be entrained by the proposed Project are from fish that are not associated with the kelp and rocky reef habitat inside the Southern California coastal MPA reserve network. Of the remaining 9% associated with kelp and

rocky reef habitats, the report's ocean currents model concludes that the probability is, at most, 1.0% (or 0.09% of the total larvae potentially at risk of entrainment) of that larvae from inside one of these MPAs could be transported into the vicinity of the Project and subject to entrainment. The results of the ocean current modeling suggest that the more likely source of the larvae from fishes associated with kelp and rocky reef habitat in the vicinity of the Project's intake and discharge is from the rocky habitat formed by Los Angeles/Long Beach Harbor Complex, which is not a protected area and is closer to the proposed Project's intake than any of the kelp and rocky reef coastal MPAs. Therefore, the location of the Project at the proposed site ensures that there is little or no likelihood the Project's potential entrainment could negatively affect an MPA or any "network" of ocean MPAs. Again, this analysis did not include any consideration of the entrainment minimizing effects of the 1 mm wedge wire screens. California Department of Fish and Wildlife were briefed and provided copies of this study in December of 2015 and over the past fifteen-plus months there have not been any questions or comments.

Tenera 2015 found that four of the nine MPAs within 80 km (50 mi) up coast or down coast of the HBDP intake are protected tidal embayments or estuaries (e.g., Bolsa Chica) and do not contain kelp and rocky reef habitat. Marine larvae spawned from within these MPAs are subject to high levels of natural mortality because there is no suitable adult habitat for these larval fishes to settle on along the open coast. The Project intake is in an area not directly adjacent to the opening to any of these MPAs where tidal action might have some possibility of transporting larvae back into the embayment from which they were spawned. It is extremely unlikely larvae originating from embayment MPAs that are potentially entrained at the intake would have contributed to the adult population in the absence of entrainment and therefore entrainment of these larvae is extremely unlikely to result in any impacts to the adult populations of these fishes inside the embayment MPAs.

Nonetheless, in 2016, at the request of the Regional Board staff, Poseidon augmented the 2015 Tenera Environmental report with a species-specific marine life biological assessment conducted by HDR and MBC entitled "*Huntington Beach Desalination Facility: Intake Location Entrainment Analysis.*"

The HDR/MBC report was prepared, in part, to address concerns about potential impacts to Bolsa Chica and non-open-ocean, rocky-reef MPA species and whether moving the proposed screened intake location farther offshore would reduce marine life effects. The HDR/MBC report concluded:

- **Only four (4) of the twenty (20) most abundant taxa occurring in plankton samples taken offshore of Huntington Beach are documented to occur in the Bolsa Chica Ecological Reserve;**
- **The current intake location entrained the fewest fish taxa and lowest density of those taxa that the California South Coast Region Marine Protected Area Network was expected to protect and enhance;**

Poseidon Surfside

17011 Beach Blvd., Suite 900 Huntington Beach, California 92647 Phone: (714) 596-7946 Fax: (714) 596-7947
www.poseidonwater.com

- **Adverse impacts to fish taxa that the South Coast Region Marine Protected Area Network was designed to protect will increase by moving the intake farther offshore of Huntington Beach.**

Finally, despite the Project's CEQA determination that the marine life effects are anticipated to be insignificant, the Coastal Act and State Water Code require mitigation for unavoidable marine life impacts, no matter how ecologically insignificant. Based on guidance provided by the Desalination Amendment, Poseidon has calculated the Project's necessary compensatory mitigation, and based on input from the SLC staff we have proposed a Marine Life Mitigation Plan that involves the maintenance of the tidal influence of Bolsa Chica to ensure the long-term preservation of the 1,500-acre Bolsa Chica Ecological Reserve, the largest saltwater marsh between Monterey Bay and the Tijuana River Estuary.

In closing, we want to take this opportunity to propose a meeting with the Fish and Game Commission and its staff to address any questions you may have about the Huntington Beach Project. In the meantime, the studies and reports referenced above are part of the Regional Board application administrative record and copies can be provided to you at your request.

Sincerely,



Scott Maloni
Vice President, Poseidon Water

cc: Nancy McFadden, Executive Secretary Office of Governor Edmond G. Brown Jr.
Felicia Marcus, Chair State Water Resources Control Board
Dayna Bochco, Chair California Coastal Commission
Lt. Governor Gavin Newsom, Chair State Lands Commission
Kurt Bertchold, Executive Officer Santa Ana Regional Water Board
Valerie Termini, Executive Director CA Fish and Game Commission