

**CALIFORNIA COASTAL COMMISSION**

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August 5, 2021

Scott Maloni, Vice President  
 Poseidon Water  
 5780 Fleet Street, Suite 140  
 Carlsbad, CA 92008

**VIA EMAIL:** [smaloni@poseidonwater.com](mailto:smaloni@poseidonwater.com)

**RE:** Notice of Incomplete Coastal Development Permit Application #9-21-0488

Dear Mr. Maloni:

We have reviewed the coastal development permit ("CDP") application you submitted on behalf of Poseidon Water ("Poseidon") and have assigned it CDP Application No. 9-21-0488. The application, received on July 9, 2021, is for Poseidon's proposed desalination facility that would be located in the City of Huntington Beach ("City"), Orange County. Offshore components of the proposed project would be within the Coastal Commission's retained jurisdiction, and onshore project components that are within the City's Local Coastal Program ("LCP") jurisdiction are subject to an appeal of a CDP issued by the City in 2010 (Appeal # A-5-HNB-10-225).

As discussed previously, we have identified additional information needed to file your CDP application as complete, pursuant to Sections 13052 and 13053.5 of the Commission's regulations. These items are listed below. We have also identified information that is not required to complete your CDP application but may be important for the Commission to consider in its review of the above-referenced appeal.

#### **A. Information needed to complete CDP application**

##### **Administrative –**

- 1) **Application fees:** Please provide the application fee for the proposed project. As described in the CDP Application's Attachment E – Filing Fee Schedule, the total fee required is \$326,623:

Section II.B - fee based on development cost of more than \$100 million:	\$322,750.
Section III.A - fee for grading (total cut and fill) of 10,000 to 100,000 cubic yards:	\$3,873.
<b>Total:</b>	<b>\$326,623.</b>

- 2) **List of interested parties and addressed, stamped envelopes:** As noted in your application, Poseidon plans to submit the required list of interested parties and envelopes under separate cover. We would like to discuss this requirement with you prior to your submittal.

**Project Description** – we will need the additional information described below about several components of the proposed project. Please provide the following:

- 3) **Intake system:** The Santa Ana Regional Water Quality Control Board’s (“Regional Board’s”) approval of the proposed project required Poseidon to install wedgewire screens on the facility’s intake pipe. We understand from Poseidon’s recent correspondence to the San Diego Regional Water Quality Control Board that Poseidon is having difficulty maintaining and cleaning a similar pilot-scale screen and intake system Poseidon has installed at its Carlsbad facility. With the upcoming end of once-through cooling at the Huntington Beach power plant, Poseidon will not be able to rely on the heat treatments the power plant owner uses regularly (i.e., up to every six to eight weeks) to clean the intake system. Please describe what measures Poseidon plans to implement at its Huntington Beach facility to ensure its intake system remains functional, including proposed cleaning and maintenance methods for the screens and the pipe interior and the expected frequency of implementing these measures. These descriptions should also identify coastal resource impacts that may result from implementing these measures, and any feasible methods to avoid or reduce those impacts – for example, the use of vessels may require anchoring plans to ensure impacts to benthic habitats are minimized, the use of chemical treatments may require specific operating procedures to ensure they do not result in adverse effects to water quality nearby, etc.
  
- 4) **Mitigation at Bolsa Chica and sea level rise (“SLR”):** The proposed project would involve ongoing substantial losses of marine life due to the desalination facility’s intake and discharge systems. To address these impacts, and as described in the above-referenced Regional Board approval, Poseidon’s proposed project includes implementing several types of mitigation at Bolsa Chica. As we have described in previous correspondence, we support inclusion of the proposed mitigation at Bolsa Chica. However, given that the Commission has already provided mitigation credit at Bolsa Chica to other entities for some of Poseidon’s proposed mitigation efforts, the amount of credit available through the Commission’s review may differ from that approved by the Regional Board. Additionally, the Regional Board did not consider the long-term vulnerability of Bolsa Chica to sea level rise. Recent SLR analyses show that Bolsa Chica’s configuration and its estuarine functions are likely to change significantly over the next five to 20 years, which could limit its effectiveness as a mitigation site expected to provide required annual mitigation credits during Poseidon’s proposed 50-year operating life. As described in the Commission’s SLR guidance documents, these SLR-related changes must be factored into an evaluation of Poseidon’s proposed mitigation. To facilitate this review, please provide a Bolsa Chica SLR analysis using the same SLR projections Poseidon applied to its analyses at the proposed facility site – i.e., 1.7 and 3.3 feet above current water levels – along with other projections that apply to its facility’s proposed operating life. If the analysis indicates that SLR will modify the expected mitigation functions at Bolsa Chica over the life of the desalination project, please describe additional mitigation measures,

including restoration of additional mitigation sites, that Poseidon could implement to ensure full mitigation of the facility's adverse impacts during its operating life. We are happy to discuss this further with you at our upcoming August 17<sup>th</sup> meeting where we will be discussing several items related to the project's wetland impacts and mitigation.

## **B. Information requested for appeal proceedings**

The information described below is not needed to complete Poseidon's CDP application; however, we are requesting that Poseidon provide it to facilitate the Commission staff's review of the proposed project and the pending appeal. We may have additional future requests as we continue our review and will communicate these requests to you as soon as we identify them – for example, after our upcoming meeting to discuss the proposed project's direct and indirect wetland impacts and its mitigation requirements.

### **Facility design –**

- 5) **Facility foundations:** Poseidon has summarized several possible design options for constructing the foundations of its proposed facility structures. Those different options may result in substantially different effects on coastal resources – for example, differences in the amount and timing of dewatering needed for each option may cause different effects on nearby wetlands or on how soil and groundwater contaminants are mobilized, and design options that require pile driving may cause adverse effects to nearby sensitive species. Please provide preliminary design plans for the facility's various structural foundations, or alternatively, provide detailed descriptions of the different design options being considered. These descriptions should include proposed construction methods and materials to be used, the times needed to construct, the amount of dewatering anticipated, and known or likely effects of the methods on nearby coastal resources.

### **Coastal Hazards –**

- 6) **Proposed design modifications to address coastal hazards:** Poseidon's previously proposed facility design would have kept the existing containment berms along the exterior of the facility footprint, while the current application proposes to remove most of them and then increase site elevations, construct soundwalls, and implement other measures to protect the facility from most expected coastal hazards. However, some of these proposed measures may be considered "shoreline protective devices," which the LCP prohibits at this location – for example, Poseidon proposes to remove the existing berm along the east side of the facility site, which borders a tidally-influenced wetland area, and would replace it with a soundwall and stormwater BMP system that may be considered a shoreline protective device. Please provide a detailed description of these facility components and proposed measures, including their dimensions, materials to be used, depth of foundations, and their proximity to wetlands or other shoreline features.

- 7) **Future adaptation measures and strategies:** Poseidon expects that its facility will be able to accommodate most anticipated hazards – e.g., five feet of SLR with a 100-year coastal storm event – but not several worst-case hazard scenarios, such as coastal storms accompanying 6.6 feet of SLR. It proposes to conduct an updated SLR analysis in the future – either in 2050 or when SLR has increased by three feet – and to identify any needed adaptation measures or facility changes at that time. It is not clear that the facility, once built, will have adaptive capability, so we request that Poseidon provide examples of what adaptive or mitigation measures it would consider employing to avoid these worst-case hazard – for example, might it be feasible for Poseidon to increase the elevation of structures in the future or to “floodproof” their foundations?
- 8) **Seismic:** Poseidon’s application included an updated seismic analysis in which Poseidon increased assumptions on ground surface displacement of the NIFZ South Branch Fault under the facility site from 25% to 50% and 80% of the expected displacement at the NIFZ’s nearby Main Branch. However, as we have described previously, some studies suggest that an earthquake on the South Branch could generate the same seismic forces as the Main Branch. We therefore request that Poseidon calculate potential displacement at the site using 100% of the Main Branch displacement, along with any needed update of expected ground motions at the site using this 100% calculation. Please also describe what engineering design elements or other measures Poseidon would implement to allow the facility to resist structural collapse and allow for continued operations in the event of these higher seismic forces.
- 9) **Tsunami:** Poseidon’s application states that its proposed facility would not be vulnerable to a 2,475-year Maximum Considered Tsunami (“MCT”) with a 3.3-foot increase in sea level, even though some structures would be subject to tsunami inundation and water velocities. Because the water supply and water storage provided by the proposed project may be considered “critical” services, we recommend you describe the specific design measures Poseidon will implement to ensure that all structures associated with those services (including, but not limited to, the water treatment and storage facilities, pumps and electrical supply components, etc.) can resist significant damage or collapse and can continue operating after a major tsunami.
- 10) **Flooding:** The proposed project will rely in part on flood protection provided by the proposal to elevate the building site and by the adjacent Huntington Beach Flood Channel. To the extent that fill would be placed in the floodway or flood fringe, please provide an analysis showing whether the fill would result in any increase in flood levels. The analysis should incorporate flood levels for the full range of SLR projections expected during the proposed project’s operating life.
- 11) **High groundwater elevations:** The proposed facility site is underlain by shallow groundwater levels that are expected to increase with sea level rise. Most, if not all, of the facility’s structures, including its water distribution pipeline, may be subject to additional buoyancy forces and require more extensive construction methods and

different foundations than had been described in Poseidon's previous submittals (i.e., wider and/or deeper excavations, larger structural components, increased dewatering volumes, etc.). As part of the foundation design request above, we also request that you describe what construction methods and foundation designs will be used for all structures within the coastal zone to address these buoyancy forces, identify any expected adverse effects to coastal resources, and propose measures to be implemented that will avoid or minimize those effects.

12)**Wetlands and mitigation:** As we have described previously, construction and operation of Poseidon's facility would result in direct and indirect impacts to on-site and adjacent wetlands. If the Commission allows these impacts, they will need to be mitigated in accordance with requirements of the LCP. In addition, and as described our June 29, 2021 letter to you, construction of Poseidon's facility will affect areas where wetlands were previously disturbed without Coastal Act authorization. We recommend Poseidon provide additional detailed information about what measures it will implement to avoid and reduce project impacts and to mitigate for the impacts that cannot be avoided or reduced, as well as provide information about whether Poseidon plans to mitigate for the impacts to the previously disturbed wetlands that are the subject of the Commission's Notice of Violation. We plan to discuss these issues further with you at our upcoming August 17<sup>th</sup> meeting.

13)**Water quality:** Our June 29, 2021 letter asked if Poseidon would be modifying its previously proposed water treatment methods in response to several reports that identified Poseidon's product water as causing possible water chemistry and water quality problems when distributed to the area's water users. Poseidon's application states that Poseidon will not be modifying its previously proposed treatment methods. Please note that any treatment changes that may be needed later that would involve additional or modified structures, different types or volumes of chemical use, etc., may require that any CDP issued by the Commission be amended.

Thank you for your attention to these information requests. We look forward to working with you to address these information needs and are happy to provide additional details or answer any questions you may have.

Sincerely,

*Tom Luster*

Tom Luster

Senior Environmental Scientist

Energy, Ocean Resources, and Federal Consistency Division

cc: Santa Ana Regional Water Quality Control Board – Terri Reeder, Julio Lara  
State Lands Commission – Alexandra Borack