

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

The August 18, 2016, Huntington Beach Desalination Project (Project) meeting among Poseidon, Santa Ana Regional Water Board, State Water Board, and the Coastal Commission, included an agenda item “3.a. concerning *Ch. III.M2b (2) Need-OCWD’s Groundwater Management Plan.*” Marleigh Wood of the State Water Board staff noted that the environmental groups wanted to force the issue so that desal is the last resort for a water supply project.

Poseidon responded that “desal as the last resort” argument, had been rejected in the *Amendment to the Water Quality Control Plan for the Ocean Waters of California (Ocean Plan) Addressing Desalination Facility Intakes, Brine Discharges, and the Incorporation of Other Non-Substantive Changes* (Desalination Amendment).

Poseidon, during the consultation process, has provided detailed information and documents that establish that the OCWD’S Groundwater Management Plan (GWMP) is the appropriate planning document for demonstrating the need for the desalinated water. Further, the 2015 OCWD GWMP, which is the controlling planning document for groundwater in the OCWD, identified a local and regional need for the 56,000 acre feet per year of desalinated water. This need assessment is based on three key factors: limited imported water supplies; declining Santa Ana River flows; and increased demand for water. The GWMP explicitly identifies the Project as a planned source of 56,000 acre-feet per year in the five-year period of 2015 to 2020. On a regional basis, the need for this Project has been demonstrated in appropriate water planning documents including the Municipal Water District of Orange County’s (MWDOC) 2015 Final Urban Water Management Plan (UWMP), which was prepared in accordance with Water Code section 10631, and which includes the Huntington Beach Desalination Project as a planned water supply project for 56,000 acre feet per year.

The retail entities which are the groundwater producers for the OCWD reference the role of OCWD in planning and implementing projects. For example, the Irvine Ranch Water District’s (IRWD) 2015 UWMP states that: “OCWD is the groundwater manager over the main Basin, including the Irvine Sub-basin, and the producers are the local retailers of the groundwater supplies. OCWD has prepared a Groundwater Management Plan, last updated in July 2015. OCWD’s planning documents examine future Basin conditions and capabilities, water supply and demand, and identified projects to meet increased replenishment needs of the Basin. With the implementation of OCWD’s preferred projects in its Long Term Facilities Plan, OCWD expects the Basin yield in the year 2035 to be increased. The amount that can be produced will be a function of which projects will be implemented by OCWD and how much increased recharge capacity is created by those projects, total demands by all producers, and the resulting

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

Basin Production Percentage (BPP) that OCWD sets based on these factors” (Pages 6.4-6.5). All of the OCWD groundwater producers’ UWMPs for 2015 recognize the HBDP as a future project. For example, the IRWD 2015 UWMP provides that: “Currently, the OCWD is evaluating a proposed seawater desalination facility at a site in Huntington Beach in Orange County. The proposed project would be constructed by Poseidon Resources, a private company, and would consist of the construction and operation of a 50 mgd ocean water desalination facility. The proposed project would distribute potentially to coastal and southern Orange County retailers. The project is still pending approval from the California Coastal Commission.” (Page 6-14)

The approach of not just looking at the numbers in the plans, but also imported water trends, recycled water, stormwater and conservation, had been raised in a previous meeting on April 12, 2016 by Santa Ana Regional Water Board staff member Milasol Gaslan. Poseidon questioned that approach then and continues to believe that the Desalination Amendment does not require or support that approach.

State Board staff specifically rejected this concept in the analysis of Alternatives Considered But Not Analyzed, in the *Final Staff Report Including the Final Substitute Environmental Documentation Adopted May 6, 2015, Amendment to the Water Quality Control Plan For Ocean Waters of California Addressing Desalination Facility Intakes, Brine Discharges, and the Incorporation of Other Non-substantive Changes*.

“Allow for desalination of ocean waters only after all water conservation strategies have been implemented. This concept would authorize surface water intakes only after strict water conservation efforts have been fully implemented and realized. Full implementation would require maximum re-use and recycling of all wastewater, and implementing strict conservation practices for all municipal domestic, agricultural and industrial users of fresh or potable water supplies. This alternative was not considered for further analysis because this alternative would require regulatory actions that are beyond the State Water Board authority and jurisdiction.” (Page 208).

Further, in its responses to comments on the draft Desalination Amendment, the State Board staff repeatedly rejected this approach:

### *Appendix J Response to Public Comments Received by April 9, 2015 with Conforming Changes*

Public Comment: 9.2- First, the second guiding principle for developing environmentally and economically acceptable desalination projects from the "California Desalination Planning Handbook" states that "to the extent possible, conservation and recycled water use measures should be maximized before desalination or other new sources of water are pursued." We see no

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

reason why the Desalination Amendment should not better reflect the State's own planning guidelines for desalination projects. The State should undertake greater evaluation of recycled water supplies prior to the approval of desalination facilities across the state and ensure that wastewater supplies are not unnecessarily locked up for the purposes of brine dilution.

Response from State Board staff: This comment is out of the scope of the clarifying edits to the March 20, 2015 drafts

### *Appendix I Responses to the External Peer Review of the Desalination*

Public Comment: LAL49 Housing and Development assessment- A ready supply of desalinated water may reduce pressure for landscape-based approaches to water conservation and infiltration/reuse.

Response from State Board staff: An important issue to consider, but will be addressed by the water providers as to the best use of their resources to deliver a clean and reliable water source to their customers. Neither the existing Ocean Plan nor the proposed Desalination Amendment is intended to address the uses of potable versus non-potable water. Ideally desalination would be used in conjunction with existing programs that stress water efficiency and reuse. The purpose of the proposed Desalination Amendment is to provide guidance and direction on how to protect beneficial uses of ocean water if a desalination facility is proposed.

### *Appendix H Response to Public Comments Received by August 19, 2014*

Public Comment: 4.2- Developing new water supplies should not only encourage flow augmentation to surface waters to restore and maintain beneficial uses, but also, as the staff have pointed out, the additional water supplies may fuel additional housing and economic growth in California. However, as we are all aware there are many stressed surface water ecosystems in the state that would benefit from adequate flows. Perhaps there is a path in this process to address more than local impacts.

State Board Response: We support alternative water supplies including water recycling and water conservation as described in response to comment 21.130. A goal of the proposed Desalination Amendment is to support the use of ocean water as a reliable supplement to traditional water supplies while protecting beneficial uses. Desalination is another water supply option that can be used in conjunction with other water supplies to ensure areas can meet their water demands. The proposed Desalination Amendment would establish an analytical framework for evaluating proposed desalination projects that would use seawater in order to increase availability of potable water supplies. It is up to water providers to evaluate various supply options and costs and impacts of each to make informed decisions about future supplies. Selecting water supply alternatives at a local, regional, or statewide level is not the State Water

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

Board’s role and the State Water Board does not propose to prioritize or rank water supply options on a statewide level.

Public Comment: 26.1- Every drop matters and every desal site is individual and needs to be fully analyzed as per CEQA for environmental impacts. A site that cannot work with Alternative 1 in Biological section should not be considered; should be ruled out as a place to put a desalination plant. Every, absolutely every other means of increasing water supply must be exhausted before desal even looked at as option. All strategies for conserving and recycling water along with storm water, off-stream storage and rainwater catchment must be deployed before we get into exploiting and further degrading the nearshore environment.

State Board Response: We agree that every drop matters. Every desalination facility proposed for construction in California will go through the CEQA process to evaluate project-specific impacts. The regional water board’s role is in making the Water Code 13142.5(b) determination in order to evaluate the best available site, design, technology, and mitigation measures feasible that in combination minimize intake and mortality of all forms of marine life. Chapter III.L.2.a describes how the regional water boards will analyze the factors first independently and then will use the combination of factors that result in the least amount of intake and mortality of all forms of marine life. Restricting the site to locations where Alternative 1 is feasible may result in higher intake and mortality of marine life overall. For more on the approach, please see response to comment 21.5. For the justification of not requiring Alternative 1, please see section 12.2 of the Staff Report with SED. Waste water and storm water recycling, conservation, desalinated water, and rainwater capture are all solutions to water supply problems. Desalination is increasingly becoming an important water supply option for areas where water sources are limited. Please see response to comment 21.2 on considering desalination only as a last resort

Public Comment: 21.2- Our organizations have comprehensively reviewed California's water supply options and have determined ocean desalination should be pursued with caution and only after conservation, stormwater capture, water use efficiency, and wastewater recycling has all been fully implemented. As discussed in [comments 21.130 - 21.134], these preferred alternatives are not only less expensive; they have additional benefits of preventing pollution, contributing to habitat restoration, and reducing energy usage. While we understand local water supply agencies have the authority and discretion whether to develop seawater desalination facilities in their portfolio, it is the State Board's charge to ensure those facilities meet the mandates of State and Federal law.

State Board Response: The State Water Board supports use of alternative water supplies including water recycling and water conservation as described in response to comment 21.130. A goal of the proposed Desalination Amendment is to support the use of ocean water as a reliable supplement to traditional water supplies while protecting beneficial uses. Desalination is another

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

water supply option that can be used in conjunction with other water supplies to ensure areas can meet their water demands. The proposed Desalination Amendment would apply establish an analytical framework for evaluating proposed desalination projects that would use seawater in order to increase availability of potable water supplies. It is up to the water providers to evaluate various supply options and costs of each to make informed decisions about future supplies. Selecting water supply alternatives at a local, regional, or statewide level is not the State Water Board’s role and the State Water Board does not intend to prioritize or rank water supply options on a statewide level.

Public Comment: 21.130- California has Feasible Water Supply Alternatives that Provide Multiple Benefits to Californians. Increased recycling of waste water is another important water supply option that is less impactful than seawater desalination. Between Santa Barbara and San Diego, sewage treatment facilities discharge between 1.5 to 3 billion gallons of freshwater a day. According to state estimates development of water recycling projects can readily achieve an estimated 1.4 million to 1.7 million acre-feet by the year 2030, of which 0.9 million to 1.4 million acre-feet (62 to 82 percent) would be recycled from discharges that would otherwise be lost to the ocean, saline bays, or brackish bodies of water. In Orange County, the Sanitation District built a world-renowned water reuse facility which generates enough purified water to serve 500,000 people. According to the Report Card for America's Infrastructure, this facility is between 35 and 75% less expensive than saltwater desalination and will consume half the energy. By prohibiting ocean discharges from wastewater treatment plants by 2030, the State Board could dramatically accelerate the adoption of water recycling and significantly improve the drought resistance of urban communities. This would significantly increase available water supply for both agricultural and urban water users, at costs that are comparable to imported water and alternative supplies. This policy change would have at least two added benefits: it would improve coastal water quality by reducing ocean discharges, particularly of wastewater that is only treated to secondary levels; and it could potentially reduce greenhouse gas emissions, because recycled water consumes less electricity than many alternative water supply sources, including water imported from the Bay-Delta to Southern California and ocean or brackish water desalination. It is also recommended that the state develop a General Permit that would allow for the onsite use of greywater under specific conditions

State Board Response: Comment noted. The Water Boards promote sustainable use and reuse of water, as described in response to comment 21.131 below. Selection of alternative water supplies by water providers is described in 21.132 and 21.133. Water providers must continuously evaluate their water supplies to ensure reliability regardless of precipitation and climate conditions. As such, desalination is just one of several alternatives that those providers may consider in attempting to develop more reliable water supplies. Currently, the Water Boards promote sustainable water reuse practices such as those described by the commentator. The

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

Water Boards encourage and support Low Impact Development (LID) through statewide stormwater general permits municipal stormwater permits issued by the Regions, waste discharge requirements and where applicable plans and policies (See [http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/](http://www.swrcb.ca.gov/water_issues/programs/stormwater/)). The State Water Board promotes and encourages the use of recycled water through the adoption of the Policy for Water Quality Control for Recycled Water (Recycled Water Policy) that went into effect April 25, 2013 (See [http://www.waterboards.ca.gov/water\\_issues/programs/water\\_recycling\\_policy/docs/rwp\\_revto.pdf](http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/rwp_revto.pdf)) and the General Waste Discharge Requirements for Recycled Water Use (See [http://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2014/wqo2014\\_0090\\_dwq\\_revised.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0090_dwq_revised.pdf)). On the issue of greywater or graywater, that subject is regulated under the California Plumbing Code, Title 24, Part 5, Chapter 16A, Part 1 – Nonpotable Water Reuse Systems and enforced by local health agencies. It is not the intent of the State Water Board to address graywater in the proposed Desalination Amendment.

Public Comment: 21.131- Alternative Water Supply Options Are Less Expensive than Desalination

State Board Response: The economic basis for selecting desalination over other alternatives supplies (e.g. recycling) is not an issue addressed by the proposed Desalination Amendment. Each water provider is responsible for making informed decisions about future conditions to ensure reliability of supplies and affordability for rate payers. Any decision by a water provider to plan for and develop desalination of ocean waters among other potential water supplies is outside the purview of the Water Boards. The intent of the proposed Desalination Amendment, if adopted, is to ensure that aquatic life related beneficial uses are protected if desalination is selected by a water provider.

Public Comment: 21.132- Alternative Water Supply Options are less Energy Intensive - do not Perpetuate Climate Change -Compared to Desalination.

State Board Response: The proposed Desalination Amendment is intended to support desalination as an alternative source or water supply of California’s ocean water in a manner that protects water quality and beneficial uses of ocean water. The State Water Board also promotes other water supply alternatives, including water recycling. As stated in Section 12.1.7 of the Staff Report with SED, potential greenhouse gas emissions may be significant if facility’s energy is derived primarily from fossil fuels. However, as further stated in the Staff Report with SED, other forms of energy that result in much lower greenhouse gas emissions may be used that would result in little or no impact. If a project proponent elects to develop desalination as an alternative supply of water, the proponent must assess the project’s contribution to greenhouse gas emissions and ensure that those emissions comply with the appropriate Air Quality Management District CEQA requirements for greenhouse gas emissions. To provide any more

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

information as to what sources of energy would be used by future desalination facilities is speculative.

Public Comment 21.133- California Should Not Encourage Desalination Because of the Drought

State Board Response: One of the project goals of the proposed Desalination Amendment is to support desalination as an alternative source of water supply of California’s ocean water in a manner that protects water quality and beneficial uses of ocean waters. The State Water Board also promotes other alternatives including water recycling, as described in response to comment 21.130. The proposed Desalination Amendment would establish an analytical framework for evaluating proposed desalination projects that would use seawater in order to increase availability of potable water supplies. It is up to the water providers to evaluate various supply options and costs of each to make informed decisions about future supplies. Selecting water supply alternatives is not the State Water Board’s role nor does the State Water Board have that authority.

As demonstrated by the previous excerpts from the public comment responses by the State Board in the record for the Desalination Amendment, the State Board rejected “ocean desal as a last resort”. Poseidon believes that the question of need for the Huntington Beach Desalination Project has been clearly documented and that the Regional and State Board staffs do not have the authority to be selecting water supply alternatives as was suggested at both the April 12<sup>th</sup> and August 18<sup>th</sup> consultation meetings.

Even if the State Water Board’s Desalination Amendment had not rejected the review and evaluation of various water supply options, as was clearly shown above, the OCWD’s determination of the need for the HBDP as a future water supply source was made in process that fully included other water sources as well as conservation.

1. Orange County, California and the Orange County Water District are recognized as leaders of the use of recycled water.

“Orange County is the leader in water recycling in the State of California, in both quantity and innovation. Water supply and wastewater treatment agencies in Orange County have received well-deserved recognition in the field of water reclamation and reuse. Recycled water is widely accepted as a water supply source throughout MWDOC’s service area.” *2015 URBAN WATER MANAGEMENT PLAN Municipal Water District of Orange County.*

“In 2008, Orange County’s Groundwater Replenishment System (GWRS) began pumping recycled water into Orange County’s groundwater basin for potable use. The GWRS supplies 103,000 acre-feet/year of potable water, enough to supply the water

## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

needs of 850,000 people. Orange County Groundwater Replenishment System”.  
*Groundwater Replenishment System Technical Brochure*. <http://www.gwrsystem.com/>.  
Published in 2015.

“The most recent statewide recycled water survey identified the annual reuse of 670,000 acre-feet of municipal wastewater, representing approximately 13 percent of the 5 million acre-feet of municipal wastewater produced each year in California (SWRCB and DWR, 2012). . . . Likewise, the Orange County Water District and Orange County Sanitation District operate a recycled water plant that produces up to 72,000 acre-feet per year; plans call for an increase in production to 103,000 acre-feet per year by 2015”. *Water Reuse Potential in California, Pacific Institute and NRDC, 2014*.

2. OCWD evaluated various water supply options and determined that the HBDP as well as other water supply projects were needed to ensure reliability of supplies and affordability.

“New projects were evaluated with an emphasis on increasing the basin’s yield and protecting water quality in order to meet demands as the District responds to current water supply challenges. Recharge operations were reviewed to identify areas where percolation rates could be increased in existing basins and where modifications would enable the District to increase recharge capacity. Projects to increase water supply and water supply reliability also were discussed. The recent trend of declining base flow in Santa Ana River was evaluated in relation to the need for proposed projects.

Each project was reviewed and evaluated by District staff with regards to its economic and technical feasibility. Benefits of projects were evaluated based on the following:

- Increase supply of recharge water
- Increase recharge capacity and efficiency of recharge facilities
- Cleanup contaminated groundwater
- Protect groundwater quality
- Control seawater intrusion”

*OCWD Long Term Facility Plan 2014 Update (Page 3-26)*



## Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

**Table ES-1: List of Projects for Focused Study**

PROJECT	DESCRIPTION
WATER SUPPLY	
GWRS Final Expansion-30 mgd	Expand GWRS to 130 mgd
GWRS: Urban Runoff Diversion to OCSD Plant #1-TBD	Divert additional urban runoff to OCSD for additional supply to GWRS.
Poseidon Resources Huntington Beach Ocean Desalination Plant-50 mgd	Partner with Poseidon to utilize purified ocean water supply from Huntington Beach facility.
SARI Flow Treatment Plant at Ball Road Basin-25 mgd	Produce 25 mgd recycled water for surface recharge in Anaheim
Purchase Upper Watershed Wastewater TBD	Negotiate agreements with upper watershed wastewater dischargers to purchase flows to sustain base flows reaching Prado Dam
Recovery of Evapotranspiration Loss in Prado Basin-Up to 5,000 afy	Install production wells in Prado Basin to pump groundwater to recover evapotranspiration loss. Up to 5,000 afy

*OCWD Long Term Facility Plan 2014 Update (page 3-29)*

As can be seen in this table, the OCWD projects for future water supply go beyond the seawater desalinated water of the HBDP and include recycled water and stormwater projects as well.

3. Conservation and water use efficiency of the OCWD groundwater is ahead of schedule to meet the Water Conservation Act of 2009, SBx7-7, signed into law on February 3, 2010, which requires the State of California to reduce urban water use by 20 percent by the year 2020. OCWD’s groundwater producers have all already exceeded their 2020 targets as can be seen in the table below.

Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

Groundwater Producer/Agency	Actual 2015 gallons per capita per day (GPCD).	2020 Target	Has Already Met or Exceeded 2020 Target	Source
Anaheim	129	162	YES	City of Anaheim 2015 Urban Water Management Plan (UWMP)
Buena Park	121	158	YES	2015 URBAN WATER MANAGEMENT PLAN Municipal Water District of Orange County (MWDOC UWMP)
Fountain Valley	122	142	YES	MWDOC UWMP
Fullerton	146	179	YES	City of Fullerton 2015 UWMP
Garden Grove	102	142	YES	MWDOC UWMP
Huntington Beach	105	142	YES	MWDOC UWMP
La Palma	91	140	YES	MWDOC UWMP
Newport Beach	177	203	YES	MWDOC UWMP

Determining the Need for the Huntington Beach Desalination Project on the Basis of a “Desal as the Last Resort” Approach is Contrary to the Desalination Amendment

Orange	145	181	YES	MWDOC UWMP
Santa Ana	82	116	YES	City of Santa Ana 2015 UWMP
Seal Beach	110	142	YES	MWDOC UWMP
Tustin	122	151	YES	MWDOC UWMP
Westminster	93	130	YES	MWDOC UWMP
East Orange County Water District	206	232	YES	MWDOC UWMP
Golden State Water Company	109	142	YES	MWDOC UWMP
Irvine Ranch Water District	109	170	YES	MWDOC UWMP
Mesa Water District	114	145	YES	MWDOC UWMP
Serrano Water District	219	386	YES	MWDOC UWMP
Yorba Linda Water District	203	237	YES	MWDOC UWMP

After receiving the 2015 UWMPs, DWR is required to report to the Legislature on progress toward the 20-percent reduction goal. Suppliers are expected to be halfway between the baseline and the 2020 target by 2015. If the state, overall, is not on track to meet the 20-percent target, DWR is directed to provide recommendations to the Legislature on how the goal can be achieved. *Urban Water Use Efficiency A Resource Management Strategy of the California Water Plan California Department of Water Resources July 29, 2016.*