NOTE TO REVIEWERS: *This document is still under development. All caps and ellipsis indicate areas where additional supporting and explanatory points will be added.*

[INSERT LETTERHEAD]

This letter is submitted on behalf of the City of Hermosa Beach, in response to the Draft Environmental Impact Report ("DEIR") for the West Basin Municipal Water District Ocean Water Desalination Project ("the Project"). The City Council of Hermosa Beach has voted in the past to oppose this project, because it would have negative impacts on the environment, and because it is an unduly expensive and unnecessary water supply option.[1]

The cost of water produced by seawater desalination is four to eight times higher than alternative sources of water, ranging from $1,900 to over $3,000 per acre foot.[2] We are concerned that there is significant "demand risk" presented by this Project: our water demand can be met by less expensive sources of water, and there is risk that this Project will create an unnecessary financial burden for rate payers and municipalities.[3] The financial risk of this Project is illustrated by Australia's experience building six large-scale seawater desalination plants at a cost of $10 billion. These plants were abandoned or operate at reduced capacity, in favor of efficiency and other more cost-effective water supply alternatives.[4]

The City of Hermosa Beach strongly prefers to focus its water supply portfolio on readily available lower-cost and lower-impacts alternatives including water conservation, water efficiency, stormwater capture, and water recycling. We encourage West Basin to pursue water supply options other than seawater desalination. For example, the Water Replenishment District of Southern California expects that it can supply 57,770 AFY of additional groundwater production to offset imported water demands with stormwater, tertiary recycled water and advanced treatment recycled.[5]

In addition to our perspectives that pursuing seawater desalination is neither necessary nor appropriate, we have specific concerns with the Project and the review of the Project's environmental impacts in the DEIR. We note the following issues with the DEIR, described further, below.

[INSERT BULLETS SUMMARIZING KEY ARGUMENTS BELOW…]

I. The Project DEIR fails to present substantial evidence that marine biological and water quality impacts are less than significant or can be mitigated.

[1] Staff Report and City of Manhattan Beach "Letter Opposing Construction of a Water Desalination Plant by West Basin Municipal Water District", February 16, 2016, http://www.citymb.info/home/showdocument?id=22699.
[2] NRDC et al. PROCEED WITH CAUTION II: CALIFORNIA'S DROUGHTS AND DESALINATION IN CONTEXT, (2016), https://www.nrdc.org/sites/default/files/california-drought-desalination-2-ib.pdf
[3] NRDC et al. PROCEED WITH CAUTION II: CALIFORNIA'S DROUGHTS AND DESALINATION IN CONTEXT, (2016), https://www.nrdc.org/sites/default/files/california-drought-desalination-2-ib.pdf
[4] NRDC et al. PROCEED WITH CAUTION II: CALIFORNIA'S DROUGHTS AND DESALINATION IN CONTEXT, (2016), https://www.nrdc.org/sites/default/files/california-drought-desalination-2-ib.pdf
[5] CH2M HILL, ENGINEERS, INC. GROUNDWATER BASINS MASTER PLAN, FINAL REPORT, Water Replenishment District of Southern California (2016) http://www.wrd.org/sites/pr/files/GBMP_FinalReport_Text%20and%20Appendicies.pdf

[SUMMARY OF POINTS BELOW …]

A. The DEIR has designated a limited marine study area, which excludes consideration of significant environmental impacts of the Project to marine biological and water quality in the Santa Monica Bay.

Under California law, West Basin must analyze whether the Project will have a significant effect on the environment, which is the extent to which it will cause "substantial adverse change in the physical conditions which exist in the area affected by the proposed project."[6] In conducting this analysis, the DEIR is required to include a description of the environmental setting of the project, which is " the physical environmental conditions in the vicinity of the project … This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."[7]

West Basin has acknowledged that the Santa Monica Bay ("SMB" or "the Bay") is the environmental setting in which the Project will occur.[8] However, in DEIR Section 5.9.2 "Study Area", the "marine study area" is described as:

> A 2- mile by 1.5-mile area of marine waters and seafloor extending 1.5 miles offshore and 1 mile up-coast and down-coast of the proposed desalination discharge and seawater intake facilities.[9]

Throughout the document, the DEIR acknowledges that there are habitat and species of concern are those within the SMB, but the review discounts the likely impacts of the Project on these resources by assessing only the extent to which they are present in the much more geographically limited marine study area. The DEIR states that:

> Based on the absence of suitable habitat in the Project marine study area, the absence of substantial larval densities of special-status species in the Project marine study area, and the natural life history of special-status species of concern present in the Project marine study area, the potential for entrainment of these special-status species is negligible to non-existent. Therefore, the impact would be less than significant.[10]

This approach fails to consider the many studies establishing that the habitats and biological communities of the entire SMB are connected by a complex system of currents, the movement of marine life, and an array of anthropogenic impacts in this highly developed region. For example, in the SMB:

> many nearshore fish and invertebrates have a life cycle that includes an obligate pelagic larval stage that can last from a few days to several months. Due to the small size of marine larvae,

[6] CEQA Guidelines § 15002 (g).
[7] CEQA Guidelines § 15125 (a).
[8] DEIR at 5.11-10.
[9] DEIR at 5.9-25. However, Section 5.11.2 describes the marine study area slightly differently, using nautical miles: "an area extending approximately 1 nautical mile upcoast and downcoast of the terminus points of the ESGS intake and outfall pipelines and situated parallel to the shoreline and extending approximately1.5 nautical miles offshore from the beach, ending in approximately 90 feet of water," DEIR at 5.11-10.
[10] DEIR at 511-54.

> advection by coastal circulations is the dominant process driving larval dispersal which will have an order one influence on their fish stock dynamics.[11]

Study of connectivity in the Southern California Bight has found significant transport of water between mainland sites in the SMB and the Channel Islands. "Effective marine management depends upon an explicit knowledge of dispersal as a result of ocean circulation."[12] It is essential for the DEIR to account for the fact that ocean circulation can cause both the dispersal of marine species larvae, which could cause far greater impacts than are acknowledged in the DEIR, including impacts to larvae, and dispersal of the brine and pollutants released as a bi-product of desalination.

Currents and ocean circulation patterns are likely to disperse the pollutants released by the Project far beyond the marine study area. The Project could therefore cause significant water quality impacts on a much broader area of the SMB than acknowledged by the DEIR.[13] The DEIR has not incorporated substantial evidence readily available, which indicates that the impacts of increased salinity and lowered dissolved oxygen from brine discharges, and release of other contaminants from the Project operations could be significant and reach far beyond the marine study area.[14]

At a minimum, the Santa Monica Bay as a whole, rather than the DEIR's limited marine study area, should be the area evaluated for impacts caused by the Project.

B. The DEIR has not accounted for potential impacts to significant ecological areas, particularly marine protected areas.

The DEIR acknowledges the presence of significant ecological areas in Santa Monica Bay, including the Mugu Lagoon to Latigo Point Area of Biological Significance 18 miles northwest of the Project area, the Point Dume State Marine Conservation Area ("SMCA") and State Marine Reserve ("SMR") 22 miles northwest of the Project area, and the Palos Verdes SMCA and SMR 7 miles south of the Project area.[15] However, the DEIR has not evaluated the impacts the Project may have to the health and biological function of these marine protected areas ("MPAs"), and the DEIR lacks evidence to establish that the MPA's distance is far enough from the Project that it will not have significant negative impacts.

Under the Marine Life Protection Act, California created a world-class network of marine protected areas that were carefully designed, with extensive expert input, to support connectivity between the areas. While the Project is not located within a protected area, it is located between the Point Dume and Palos Verdes MPAs, between which marine life is expected to transit and have the potential to be impacted by the Project along the way.

> [M]ost marine invertebrates and fishes produce young (eggs, larvae) that are typically dispersed by ocean currents over great distances (10's to 100's of kilometers). Thus much of the

---

[11] S. Mitarai et al., *Quantifying connectivity in the coastal ocean with application to the Southern California Bight* 114 J. OF GEOPHYSICAL RES. C10026, (2009), https://doi.org/10.1029/2008JC005166 https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2008JC005166.

[12] S. Mitarai et al., *Quantifying connectivity in the coastal ocean with application to the Southern California Bight* 114 J. OF GEOPHYSICAL RES. C10026, (2009), https://doi.org/10.1029/2008JC005166 https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2008JC005166.

[13] S. Mitarai et al., *Quantifying connectivity in the coastal ocean with application to the Southern California Bight* 114 J. OF GEOPHYSICAL RES. C10026, (2009), https://doi.org/10.1029/2008JC005166 https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2008JC005166.

[14] E.g. DEIR at 5-11-58.

[15] DEIR at 5.11-34 to 5.11-36.

> population connectivity achieved by marine species is by the transport of their young from one population to another in spatially separated similar habitats …This export of individuals from one local population to another, which may be protected by one or more MPAs, influences both the role of MPAs for conservation and management and the design (e.g. size and spacing) of MPAs. These elements of population connectivity are critically important to MPAs and MPA networks.[16]

As described above, the assessment of the Project's marine and water quality impacts is based on a small rectangle within the Santa Monica Bay. The entire SMB is the appropriate "marine study area", and all assessments of impacts in the DEIR should be revised to ensure that they account for the movement of water and marine life throughout that body of water and the associated impact on the MPAs bordering SMB.

C. The Southern California Bight is the appropriate area for consideration of regional impacts of the Project.

Assessment of the Project's impacts to the marine environment of the Santa Monica Bay is the minimum spatial scale that is reasonable, given the circulation patterns and interconnectivity of the broader marine region known as the Southern California Bight ("SCB"), in which SMB is situated. CEQA requires that significant environmental impacts be considered in the "full environmental context":

> Knowledge of the regional setting is critical to the assessment of environmental impacts. Special emphasis should be placed on environmental resources that are rare or unique to that region and would be affected by the project.[17]

The Southern California Bight is "the coastal ocean from Point Conception to just south of San Diego and inshore of the Santa Rosa Ridge".[18] While the DEIR acknowledges that the Project is located in this region, and that there are multiple seawater desalination facilities within the SCB[19], the DEIR fails to consider the features and functions of this marine eco-region when assessing the Project impacts on marine biological resources and water quality impacts. For example, the SCB is characterized by circulation patterns that are more complex than elsewhere off the west coast.[20] Furthermore, as discussed in the following section, the DEIR acknowledges that the SCB is the relevant geographic range for which to consider significant and cumulative marine impacts.[21]

D. Evaluation of only a narrow set of cumulative marine impacts undermines the DEIR's cumulative impact assessment.

---

[16] M. Carr et al., *The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment*, 27 AQUATIC CONSERVATION S1, (2017), https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.2800

[17] CEQA Guidelines § 15125 (c).

[18] CIRCULATION IN THE SOUTHERN CALIFORNIA BIGHT, https://web.csulb.edu/depts/geology/facultypages/bperry/Southern%20California%20Bight/pollution.htm (last visited April 22, 2018).

[19] DEIR at 4-12.

[20] CIRCULATION IN THE SOUTHERN CALIFORNIA BIGHT, https://web.csulb.edu/depts/geology/facultypages/bperry/Southern%20California%20Bight/pollution.htm (last visited April 22, 2018).

[21] DEIR at 4-3.

The DEIR acknowledges CEQA's requirement that, because the Project has "an incremental effect that is "cumulatively considerable"[22], it is necessary to address "past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the Agency"[23]. However, the cumulative assessment of impacts to the marine environment is limited to a discussion of the "Desalination Facilities and Other Seawater Intakes in the Southern California Bight".[24] This range of existing impacts fails to account for the Project's contribution to the ongoing, pernicious impacts of open ocean intakes and other anthropogenic activities that cause marine life mortality in the Bay, and the contribution to pollutant loading, in the form of brine disposal.

1. The cumulative impact assessment should evaluate the harm to marine life caused by open ocean intakes and other anthropogenic activities with similar effects in the SCB.

…

2. The cumulative impact assessment should evaluate the cumulative impacts of other point- and non-point sources of pollution in the SCB.

Operation of the Project will release brine that will contribute potentially significant incremental pollution to the SCB. Therefore, the DEIR should include assessment of the cumulative impacts of all other point- and non-point sources of pollution in the SCB.

The SCB is a highly-developed area that is impacted by a wide array of activities. Just as species transit between habitats throughout the SMB and the SCB, pollutants and negative impacts are also transported between ecosystems, and this transport and accumulation of pollutants can negatively impact MPAs:

> [S]ome forms of ecosystem connectivity can be detrimental to both recipient and donor ecosystems … impacts to donor ecosystems that create inhospitable conditions can drive populations from those ecosystems, altering their structure and functions and diminishing their productivity. These impacts can be transmitted from one ecosystem to another by altering ecosystem functions … The cumulative and distributed negative effects of ecosystem connectivity can translate into lost ecosystem services ... Thus the extent to which MPAs can achieve their objectives – e.g. supporting healthy fish populations for sustainable fisheries – can be either enhanced or impaired through processes of connectivity among oceanic, coastal, and terrestrial ecosystems. …physical materials (e.g. sediments) and chemicals (e.g. nutrients or pollutants) can be readily transported from areas outside MPAs into MPAs. These influxes into MPAs can make the communities and processes within MPAs vulnerable to human activities conducted outside MPAs (e.g. agricultural runoff, sewage discharges, or coastal erosion).[25]

…

[22] CEQA Guidelines § 15130 (a).
[23] CEQA Guidelines § 15130 (b).
[24] DEIR at 4-3.
[25] M. Carr et al., *The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment*, 27 AQUATIC CONSERVATION S1, (2017), https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.2800

E. The objective of the California Ocean Plan Desalination Amendment should be included as a key threshold of significance for water quality and marine biological impacts.

The DEIR applies general CEQA Guidelines thresholds of significance in evaluating the water quality (Sec. 5.9.3) and marine biological (Sec. 5.11.3) impacts of the Project. However, the CEQA Handbook indicates that where specific regulations particular to the environmental effect in question are available, those should be used as the appropriate threshold of significance.[26]

The California Ocean Plan Desalination Amendment ("Desal Amendment") is the regulatory framework adopted specifically to address the water quality and marine biological effects of seawater desalination facilities. The Desal Amendment was adopted by the State Water Resources Control Board ("SWRCB"), after publication of substantial evidence, including scientific studies and public input, which is available in the staff record.[27] The Desal Amendment requires that desalination projects use best available site, design, and technology to "minimize intakes and mortality to all forms of life".[28] The Desal Amendment was adopted to address the fact that seawater desalination projects are known to have significant, long-term environmental effects. The Desal Amendment's requirement that projects "minimize intakes and mortality to all forms of life" should, therefore be incorporated into the DEIR, rather than the more permissive, general thresholds of the CEQA Guidelines.

While the DEIR acknowledges that the Desal Amendment is salient to the threshold of significant, stating that this regulation was "considered", the thresholds of significance used do not reflect the key metric applied in the Desal Amendment.[29] When assessing water quality and marine biological impact, the extent to which the Project will "minimize intakes and mortality to all forms of life" should be added and applied as a threshold of significance in the DEIR.

F. Potentially significant water quality impacts have not been evaluated or addressed.

The Project has been designed and utilizes technology according to the regulatory requirements of the Desal Amendment to the Ocean Plan. While compliance with the Desal Amendment is necessary, compliance with its guidance alone does not guarantee that the Project will not have significant environmental impacts. The specific requirements of the Desal Amendment are merely a starting point for best available site, design and technology. Those approaches that are "best available" are, by definition, progressively evolving as new studies are conducted, lessons learned, and technologies tested and advanced. As discussed in the following sub-sections, the DEIR acknowledges that there are substantial gaps in information available to assess the actual impact of the Project's planned technology. Because of these data gaps, it is unreasonable for the DEIR to make an unfounded leap in analysis to conclude that water quality impacts will be less than significant.

---

[26] CEQA Guidelines § 15064.7 (a).

[27] *See*, ST. WATER RESOURCES CONTROL BOARD, FINAL STAFF REPORT INCLUDING THE FINAL SUBSTITUTE ENVIRONMENTAL DOCUMENTATION FOR THE AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE WATERS OF CALIFORNIA, ADDRESSING DESALINATION FACILITY INTAKES, BRINE DISCHARGES, AND THE INCORPORATION OF OTHER NON-SUBSTANTIVE CHANGES, Adopted May 6, 2015, (hereinafter "Final Staff Report for Desal Amendment"), https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/rs2015_0033_sr_apx.pdf

[28] California Ocean Plan, Desalination Amendment, Chapter III.M.2.a.(2).

[29] DEIR 5.11-36.

1. Impacts of wedgewire screen intakes are uncertain and may be significant; the DEIR should not rely on speculative future mitigation.

The 20 MGD Local Project is planned to withdraw between 42 to 45 MGD of source seawater[30]; the 60 MGD Regional Project would require between 126.6 -136.2 MGD of source seawater.[31] The Desal Amendment to the Ocean Plan requires that if the preferred subsurface intakes are not feasible, then surface water intakes with 1.0 mm or smaller slot size may be utilized.[32] West Basin proposes to use "screened ocean intake system with 1 mm open passive wedgewire screens and operating intake flow at < 0.5 fps".[33] However, the DEIR states:

> [t]o date, there have not been any scientific studies designed or conducted to systematically evaluate wedgewire screens' performance in the absence of any appropriate sampling protocols developed to allow for proper assessment.[34]

This acknowledged paucity of information calls into question the effectiveness of wedgewire screens to minimize marine life impacts.

West Basin hired consultants to conduct the *Intake Effects Assessment Report* (Tenera 2014), which examined the impacts of a demonstration facility with a maximum daily intake of 0.511 MGD, then used this assessment to model the impacts of a 20MGD plant.[35] The 20 MGD Local Project would intake 45.4 MGD of seawater[36], an intake 89 times greater than the demonstration facility, while the 60 MGD Regional Project would utilize up to 136.2 MGD[37], an intake 266.5 times greater than the demonstration facility. The DEIR states that modeling based on the demonstration facility finds no significant impact for the Local Project; the Regional Project has apparently not been modeled, but the impacts are nonetheless dismissed as less than significant. It is an unreasonable leap in analysis to assume that the results of a small-scale modeling exercise can be extrapolated to the far larger intake volume, using untested intake technology.

The DEIR acknowledges data gaps and uncertainty in assessing the impacts of the intake: "At present, the extent of protection that wedgewire screens could provide to prevent entrainment of larval fish and invertebrates in the Project marine study area is unknown."[38] The DEIR then defaults to reliance on mitigation for whatever impacts may, in fact, result. The mitigation proposed, "**BIO-M2**", is essentially compliance with Water Code Section 13142.5(b) and the Ocean Plan Desal Amendment. This mitigation program will be based on future study of impacts and is speculative at this time.[39]

…

[30] DEIR at 3-4.
[31] DEIR at 3-16.
[32] California Ocean Plan, Desalination Amendment, Chapter III.M.2.d.(1)(c)(ii).
[33] DEIR at 5.11-49.
[34] DEIR at 5.11-52.
[35] DEIR at 2-33, 5.11-52.
[36] DEIR at 3-12.
[37] DEIR at 3-16.
[38] DEIR at 5.11-53.
[39] "The primary adverse effect of screened open ocean intakes is mortality of larval fish, fish eggs and other types of plankton. This mortality can be assessed, but prediction of the overall impact from such mortality using traditional models is hindered by the paucity of information on typical survivorship to maturity for most species. As a result, the overall impact of intake mortality on the marine ecosystem cannot always be quantified reliably." WATER IN THE WEST, ET AL., MARINE AND COASTAL IMPACTS OF OCEAN DESALINATION IN CALIFORNIA, Stanford University, at 4 (2016), http://waterinthewest.stanford.edu/sites/default/files/Desal_Whitepaper_FINAL.pdf.

2. Brine impacts are likely to be significant; important information has been ignored or dismissed.

West Basin will be unable to comingle brine with wastewater, which is the "preferred technology for minimizing intake and mortality to all forms of life resulting from brine"[40], because sufficient supplies of wastewater will purportedly not be available. Instead, the Project will utilize multiport diffusers, which is the Desal Amendment's "next best method for disposing of brine when the brine cannot be diluted by wastewater".[41] The DEIR notes that 25.4 MGD of brine will be discharged for the 20 MGD Project[42]; 76.2 MGD will be discharged for a 60 MGD Regional Project, although that discharge could peak at 83 to 95 MGD.[43]

A 2016 convening of experts at Stanford University noted that, despite the promulgation of the Desal Amendment, "[m]ore work is needed to understand the long-term impacts of discharges."[44] In particular, experts engaged in review of California desalination projects have raised concern that multiport diffusers may have significant impacts that are still not well understood. In response to debate on this question, Dr. Philip Roberts released a new report on April 2018 *Brine Diffusers and Shear Mortality*. This study raises a number of questions about the effectiveness and impacts of the brine dispersal technique planned by West Basin.

…

II. The Project is likely to have significant energy impacts; the DEIR's assessment of energy impacts should be revised.

A. Analysis of energy efficiency and waste is insufficient.

In assessing energy impacts of the Project, the DEIR acknowledges the applicability of CEQA Guidelines Appendix F., which directs EIRs to place "particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy".[45] However, a number of aspects of the analysis are inconsistent with this directive.

First, the DEIR appears to take energy conservation credit for other water recycling and conservation projects, unrelated to the seawater desalination Project under consideration.[46] …

Second, the DEIR purports to take energy conservation credit for Southern California Edison's (SCE) generation of additional renewable power to meet the California's Renewables Portfolio Standard (RPS).[47] We are aware of no instance in which a project can take credit for the energy savings of a wholly independent entity, merely because it purchases the power from this entity. Rather, we are concerned, as discussed below, that the Project actually undermines the RPS.

---

[40] California Ocean Plan, Desalination Amendment, Chapter III.M.2.d.(2)(b).
[41] California Ocean Plan, Desalination Amendment, Chapter III.M.2.d.(2)(b).
[42] DEIR at 3-13.
[43] DEIR at 3-17.
[44] MARINE AND COASTAL IMPACTS OF OCEAN DESALINATION IN CALIFORNIA at 5.
[45] DEIR at 5.5-9,-10.
[46] DEIR at 5.5-15.
[47] DEIR at 5.5-17.

Finally, the DEIR assesses the Project's energy use only in comparison to imported water, rather than comparing the energy use of seawater desalination to the even less energy intensive options. This is justified by the need for a diversified water supply, but diversification can still be accomplished without the use of this large-scale Project. The DEIR should not just compare the energy impacts of the Project to imported water, but instead to the range of other alternatives.

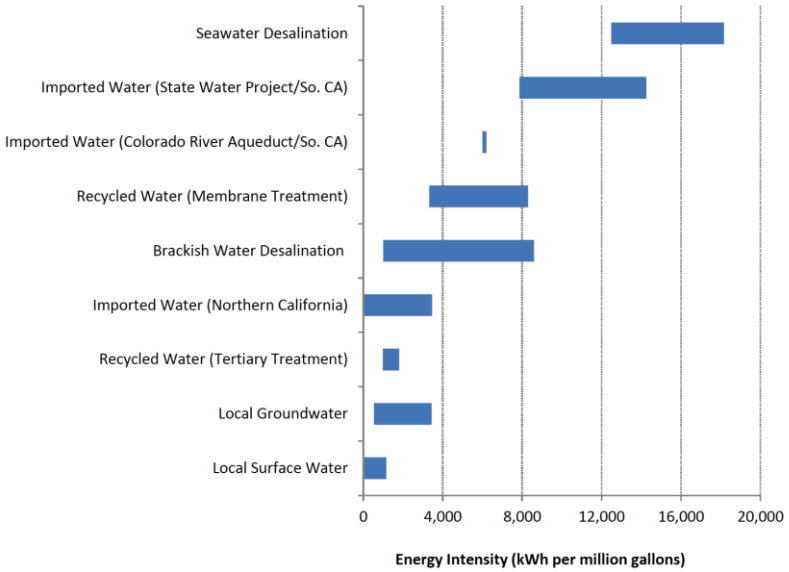

Figure 1. Comparison of the Energy Intensity of California Water Supplies[48]

Despite the length of the document, the DEIR does not reference the preeminent analysis comparing the energy and GHG emissions of seawater desalination to other water supply options, conducted by the Pacific Institute.[49] This is an important example of significant gaps in evidence utilized by the DEIR in conducting its analysis.

In consideration of these issues with the DEIR, it appears that the Project would have significant, unavoidable, energy impacts. We request that West Basin re-evalute the energy impacts of the Project, with these points in mind.

B. The DEIR does not account for impacts that could undermine grid reliability and SCE's compliance with the RPS.

The DEIR has concluded that the Project will have less than significant impacts to adopted energy conservation plans or to state or federal energy standards.[50] This analysis appears to be deficient, at a minimum, because it does not fully account for the additional and unplanned load that the project will place on the electrically constrained SCE service area. As the DEIR notes, SCE is transitioning to increased renewable energy production, in compliance with the RPS. However, the addition of this new project could actually jeopardize the attainment of RPS goals.

---

[48] Heather Cooley, *Key Issues in Seawater Desalination in California: Energy and Greenhouse Gas Emissions*, Pacific Institute at 7 (2013), http://pacinst.org/publication/energy-and-greenhouse-gas-emissions-of-seawater-desalination-in-california/

[49] *See*, Heather Cooley, *Key Issues in Seawater Desalination in California: Energy and Greenhouse Gas Emissions*, Pacific Institute (2013), http://pacinst.org/publication/energy-and-greenhouse-gas-emissions-of-seawater-desalination-in-california/

[50] DEIR at 5.5-14 to 5.5-18.

SCE has added more than 5,000 MW of new generation resources in coastal areas to account for the retirement of old power plants.[51] However, that addition of new generation was based on projected energy needs that did not include this Project. The energy consumption of this plant could surpass the amount saved by the new energy efficiency programs, while also placing a peak demand on the system. SCE and the CPUC should be consulted and conduct a third party assessment of the Project's impacts on energy conservation plans and state and federal energy standards and that this assessment be incorporated into a revised and recirculated EIR.

III. The Project erroneously takes credit for GHG reductions related to the offset of imported water, yet there is no guarantee that the project will result in such offset.

The DEIR asserts that the Project – whether developed to the Local or Regional size – would "ensure that there would be no net increase in GHG emissions compared to existing conditions associated with water supplied by MWD," specifically, imported water, and thus would not represent a significant or cumulative contribution to GHG emissions.[52] Seawater desalination is one of the most energy-intensive water options available, and the conclusion that it will not result in significant GHG emissions is based on three flawed assumptions.

First, the DEIR compares GHG emission of desalination only to the emissions caused by imported water supplied by MWD. Instead, as discussed above, the energy and emissions impacts of the Project should be compared to the range of other water supply options, which use far less energy. …

Second, the DEIR assumes that there will be a one-for-one replacement of imported water by MWD, asserting that the Project will "reduce dependency on imported water and would not result in a new increase in West Basin's total water supply portfolio".[53] Yet this purported benefit is illusory; it is not a guaranteed outcome, because West Basin does not exercise control over the multiple sources from which its retailers purchase water. The California Coastal Commission rejected a similar argument by Poseidon water in Carlsbad, because without a contractual obligation, the new desalinated water could simply meet new increased demand, rather than replacing imported water.

The DEIR relies heavily on the assumption that desalinated water will replace imported water, arguing that the significant impacts of the West Basin Project can therefore by justified if compared to the impacts of imported water. This argument fails because the experts agree that:

> Ocean desalination will not, in the foreseeable future, significantly reduce stress on freshwater resources—particularly freshwater ecosystems. Even the highest total projected production of potable water from ocean desalination in California is so low that it will not meaningfully reduce stress on freshwater systems …[54]

Finally, the DEIR asserts that the Project will offset the increased energy and emissions impacts of the Project by using renewable energy, where possible. This approach ignores the superior alternative of

[51] NRDC et al. PROCEED WITH CAUTION II: CALIFORNIA'S DROUGHTS AND DESALINATION IN CONTEXT, (2016), https://www.nrdc.org/sites/default/files/california-drought-desalination-2-ib.pdf
[52] DEIR at 5.7-38.
[53] DEIR at 5.7-37.
[54] Leon Szeptycki, et al., MARINE AND COASTAL IMPACTS OF OCEAN DESALINATION IN CALIFORNIA, Water in the West, Center for Ocean Solutions, Monterey Bay Aquarium, The Nature Conservancy, (2016), available at http://stanford.io/2axdXE7.

using renewable energy to offset the GHG emissions of a less energy intensive water source, rather than offsetting new emissions and thereby maintaining current GHG levels.[55]

IV. Potentially significant climate change impacts have not been sufficiently analyzed.

A. The Project has failed to account for sea level rise and climate change impacts.

West Basin's Project would require massive investment in new infrastructure a few feet above sea level. The DEIR's assessment of sea level rise concludes that "portions of the ESGS Site would be vulnerable to flooding from future coastal flood hazards, including from strong wave surge and tsunami inundation under future sea-level flood hazard conditions."[56] The DEIR acknowledges that "operation of the Project on either the ESGS North Site or South Site would result in potentially exposing people or structures to risk of loss, injury or death … due to sea-level rise."[57] The DEIR claims that the impacts would be less than significant with mitigation, but what this mitigation would entail is to be determined by future study and recommendations.[58] This future study is listed as a mitigation measure, but it is unreasonable to conclude that impacts can be reduced to less than significant levels based on information that is not yet available.

V. The alternatives analysis has inappropriately eliminated feasible alternatives based on arbitrary criteria. The analysis should be revised to more broadly consider alternative water supply options, as well as site, design and technology required by the California Ocean Plan.

A. The DEIR's alternatives analysis uses narrow screening criteria to unreasonably remove feasible alternatives from consideration.

The analysis of the feasibility of a project alternative should be based upon consideration of:

> "site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)."[59]

Rather than assessing the broader set of alternatives against these characteristics of feasibility outlined in the CEQA Handbook and the Project objectives, West Basin has applied a set of narrowly drawn "screening criteria" to justify elimination of reasonable, feasible alternatives from consideration.[60] The initial screening of alternatives" was arbitrarily narrow in requiring that precisely 21,500 AFY average annual additional water supply be generated, as is discussed in Los Angeles Waterkeeper's comment letter and incorporated by reference herein.[61]

---

[55] *See*, Heather Cooley, *Key Issues in Seawater Desalination in California: Energy and Greenhouse Gas Emissions*, Pacific Institute (2013), http://pacinst.org/publication/energy-and-greenhouse-gas-emissions-of-seawater-desalination-in-california/
[56] DEIR 5.9-75. *See also,* Appendix 5B. Technical Memorandum: Coastal Hazards Analysis of the West Basin Municipal Water District Ocean Water Desalination Project for Sea Levels at Year 2100.
[57] DEIR 5.9 -76.
[58] DEIR 1-21.
[59] CEQA Guidelines §15126.6(f)(1).
[60] DEIR at 7-5.
[61] DEIR at 7-6.

Among the alternatives that could reduce environmental impacts and meet basic project objectives, the DEIR has failed to consider a blend of those water supply options such as increased conservation, stormwater capture and increased non-potable recycling.[62] West Basin should also consider the possibility of a smaller project that would be capable of utilizing subsurface intakes and powered by renewable energy.[63]

B. The alternatives analysis should incorporate requirements of the Desalination Amendment

The Desalination Amendment "provides a uniform, consistent process for permitting of seawater desalination facilities statewide."[64] The Project's site, design and technology, and the DEIR's assessment of the Project, have necessarily been directed by the requirements of the Desalination Amendment and the requirements of Water Code Section 13142.5(b).[65] However, the DEIR has separated the alternatives analysis from the Desal Amendment's requirements for evaluating project alternatives based on feasible site, design and technology.

Under CEQA, public agencies have a duty to avoid or minimize environmental damage where feasible, including pursuing feasible alternatives that would "substantially lessen any significant effects that the project would have on the environment."[66] The Desal Amendment should be integrated into the DEIR's evaluation of alternatives.[67]

1. Co-location with once-through cooled power plants does not minimize impacts and should be avoided.

Co-location with the El Segundo once-through cooled (OTC) power plant runs counter to reduction of impacts to marine life, because these sites do not use the best available site, design or technology.[68] West Basin project would potentially prolong the use of the outdated, unnecessarily harmful intake and other infrastructure that is being phased out at the OTC power plants.[69]

- Water quality benefits of co-location for availability of mixing with wastewater will be unavailable, because plant will soon be inoperable, hence the use of questionable wedgewire screens, rather than the design of a project that could utilize subsurface intakes.

---

[62] DEIR at 7-8.
[63] Stanford University's Water in the West Program states that "sustainable seawater desalination projects are those that are smaller; that provide supply to meet a specific, clear local demand; that are located away from sensitive and valuable marine areas; and that are powered by renewable energy sources." Leon Szeptycki, et al., MARINE AND COASTAL IMPACTS OF OCEAN DESALINATION IN CALIFORNIA, Water in the West, Center for Ocean Solutions, Monterey Bay Aquarium, The Nature Conservancy, (2016), available at http://stanford.io/2axdXE7.
[64] ST. WATER RESOURCES CONTROL BOARD, DESALINATION FACILITIES AND BRINE DISPOSAL, https://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/ (last visited April 23, 2018).
[65] DEIR at 2-22.
[66] CEQA Guidelines § 15021(a)(2)
[67] Water Quality Control Plan, Ocean Waters of California, State Water Resources Control Board, ("California Ocean Plan"), III. M. Implementation Provisions for Desalination Facilities at 34.
[68] Desal Amdt Final Staff Report at 76.
[69] *See*, Desal Amdt Final Staff Report at 75.

- Other waste generated in operation – approx. 500,000 gallons of waste per year will be held in tanks, "neutralized", then pumped either to the El Segundo or the Manhattan Beach local sanitary sewer lines.[70]

…

2. The intake feasibility analysis did not include reasonable options that could reduce environmental impacts of the project.

Subsurface intakes are the Desal Amendment's preferred technology to "minimize intake and mortality of all forms of marine life".[71] Seawater desalination owners or operators shall "evaluate a reasonable range of nearby sites, including sites that would likely support subsurface intakes."[72] The Project was designed first and foremost to produce 20 MGD, with the possibility of being expanded to 60MGD. West Basin rejected any Project alternatives that would not produce this volume of water. If this flow rate is changed, then the preferred intake technology of subsurface intakes could be considered. Rather than leading with a set volume of water that is to be produced, the Project should be designed at the outset to utilize best available site, design and technology.

…

C. Alternatives analysis omits consideration of significant impacts.

West Basin asserts that construction-related air quality and noise impacts are the only significant and unavoidable impacts for which alternatives must be considered.[73] In analyzing project alternatives, West Basin's analysis is deficient in that it fails to consider the additional significant impacts described above, for which there are reasonable alternatives that could eliminate the impacts, such as those discussed in Los Angeles Waterkeeper's comment letter and incorporated by reference herein. In particular, West Basin has not accounted for the significant unavoidable impacts to marine biological resources, water quality, energy, greenhouse gas emissions and climate change dynamics. Those impacts were incorrectly dismissed as less than significant, or the acknowledged significant impacts were dismissed with general claims that future mitigation will address their impacts. The alternatives analysis fails to give sufficient consideration to alternatives that reduce a number of significant impacts. By failing to consider alternatives that address those impacts, West Basin has not made a "reasoned choice" of alternatives.[74]

VI. A Regional Project of 60 MGD should not be permitted to tier off the DEIR for the Local 20 MGD Project.

The DEIR has made the unreasonable conclusion that, in a number of key instances, because the impacts of the 20 MGD Local Project are less than significant, the impacts of a 60 MGD Regional Project would also be less than significant. For example, in evaluating the water quality impacts of the Regional Project, the DEIR states:

[70] DEIR at 3-8.
[71] CA Ocean Plan at Chapter III.M.2.d.
[72] CA Ocean Plan at Chapter III.M.2.b.
[73] DEIR at 7-3 to 7-4.
[74] CEQA Guidelines § 15126.6(f).

> As with the Local Project, the brine discharge would not contribute contaminants or increase their concentration significantly over ambient levels beyond the mixing area …Therefore, impacts [of the Regional Project] to ocean water quality would be less than significant.[75]

It is scientifically indefensible to extrapolate assessment of impacts of the Local Project to the Regional Project, on a linear basis. … Even if a conclusion of less than significant impact for the Local Project is correct, this finding cannot be applied without caveat to a project three times the size. At a minimum, the DEIR fails to account for one-to-one increase in impacts; more likely, it has failed to acknowledge that the impacts are likely to be multiplied, potentially exponentially.

In other significant instances, the DEIR fails to assess how certain impacts would increase between the Local and Regional level. Most notably, the DEIR provides no discussion of how the three-fold increase in intake volume through wedgewire screens would impact water quality.[76] Further, as described in Section I.F.1, above, the evaluation of intake impacts on even the Local Project is faulty, because it is based on a demonstration project that would intake 89 times less water.

The DEIR has attempted to establish that nearly all assessments of impacts at the 20 MGD Local Project level should apply to projects at the 60 MGD Regional level, essentially asserting that the Regional Project should be allowed to tier off the Local Project. CEQA allows for tiering of environmental impact reports when the first EIR is prepared at the larger, more general level, "prepared and certified for a program, plan, policy, or ordinance".[77] The DEIR has taken the opposite approach: it asserts that a more narrow project could be used to tier approval of a project three times the size. If the 60 MGD project is the actual goal of this development, all assessment of impacts should be based on the impacts of a project of that size.

VII. Conclusion: the DEIR should be revised and re-circulated.

West Basin has prepared a lengthy DEIR, but there are significant gaps in the analysis. We are concerned that a number of the significant impacts have not been accounted for, and we request that the DEIR be revised and recirculated. Key issues with the DEIR include:
[INSERT SUMMARY]

We also encourage West Basin to consider reconfiguring the Project so that it can utilize subsurface intakes, operate entirely on renewable energy, and at a flexible, scaled-down level, tailored to meet demand.

[75] DEIR at 5.9-60.
[76] DEIR at 5.9-58.
[77] CEQA § § 21094(a)(1); CEQA Guidelines § 15152.