

# Comment Summary and Responses

Staff Report and Work Plan for 2019 Review of the Water Quality Control Plan for Ocean Waters of California

Comment Deadline: 12:00 Noon on August 8, 2019

October 18, 2019

No.	Commenter
1.	American Chemistry Council
2.	CalDesal
3.	California Coastal Commission
4.	California Coastkeeper Alliance
5.	California Stormwater Quality Association
6.	Central Coast Long-Term Environmental Assessment Network
7.	City of Los Angeles
8.	County of San Diego
9.	DeepWater Desal
10.	Fred Krieger
11.	Heal the Bay
12.	IDEXX
13.	The Metropolitan Water District of Southern California
14.	Ocean Protection Council
15.	Orange County Sanitation District
16.	Pacific EcoRisk
17.	Poseidon Water
18.	San Francisco Public Utilities Commission
19.	United States Environmental Protection Agency
20.	William Bourcier

Organization	No.	Issue	Comment	Response
<b>American Chemistry Council</b> Representatives: Brett Howard and Steward Harris	1.01	Issue U	Microplastics issues are necessarily intertwined with concerns—and solutions—regarding marine debris. ACC believes that policies to address concerns about microplastics in the environment should begin first with a focus on comprehensive waste management approaches and policies. Managing plastic waste so that it does not enter the aquatic environment in the first place is step one to avoiding the generation of secondary microplastics from this waste. Many of ACC’s member companies have joined the Alliance to End Plastic Waste, a new CEO led, cross-sector, not-for-profit organization with a clear mission to develop, accelerate and deploy solutions, catalyze public and private investment, and engage communities to help end plastic waste in the environment. The Alliance to End Plastic waste has committed to raise and spend \$1.5 billion over the next 5 years to address plastic waste in the environment globally. Projects will focus on four key pillars, including infrastructure, innovation, education and engagement, and cleanup. ACC would be pleased to facilitate a discussion between the OPC and the Alliance to End Plastic Waste, if there is interest within OPC to engage in global actions to address plastic waste in the environment.	Comment noted. Public Resources Code (Pub. Resources Code) §35635, adopted in 2018, directs the Ocean Protection Council (OPC), in collaboration with the State Water Resources Control Board (State Water Board), the Office of Environmental Health Hazard Assessment, and other interested entities to develop a comprehensive prioritized research plan to better understand the impacts of microplastics on California’s marine environment, and identify policy options to prevent and reduce microplastic pollution. This initiative is underway and will provide the information needed to increase the understanding of the scale and risks of microplastic materials on the marine environment and identify proposed solutions to address the impacts of microplastic materials, to the extent feasible. The commenter may seek to engage with the OPC as they develop the Statewide Microplastics Strategy for California.
	1.02	Issue U	To better understand the presence of microplastics in aquatic environments, as well as their environmental fate or any risk that might be presented, it is first necessary to develop standardized test methods that allow for their detection and quantitation. Test methods also need to be	Issue U of the 2019 Ocean Plan Review recommends continuing to follow microplastics research and consulting with the appropriate agencies and organizations, including the ongoing standard development work and consideration of a definition of “microplastic.” Additionally, the definition required pursuant to

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			<p>validated. California has recognized the importance of this first step as outlined in SB 1422 (Chapter 902, 2018) which requires the State Water Board adopt a standard methodology to be used in the testing of drinking water for microplastics. ACC supports the development of standard test methods, and encourages technical and other experts to participate in ongoing standard development work in ASTM committee D19.06, which has a standard on Infrared (IR) and Raman spectroscopy now in the draft stage.</p> <p>The State Water Board’s schedule reflects that statutory requirement to adopt a standard methodology for testing of microplastics in drinking water on or before July 1, 2021. Unfortunately, the law requires the development of a definition of “microplastics” before the test method is completed. For the final test method to have credibility and utility, the test must actually measure and quantitate in a manner consistent with the definition. If, for example, the completed test method has limitations with respect to detecting a certain size or type of plastic, the definition should not extend beyond those limitations. If a test method cannot distinguish between naturally occurring polymers and synthetic plastics, this will need to be reflected in the definition. We note this because it may ultimately be necessary either to adopt the definition of “microplastic” that can actually be tested and validated in the regulation, or to update the definition to conform to the realities of what can actually be tested by a standardized method.</p>	<p>Health and Safety Code §116376 will be developed by the State Water Board’s Division of Drinking Water.</p>

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	1.03	Issue U	<p>We request several specific corrections to the Microplastics and Microfibers narrative at pp. 42-43.</p> <p><b>1. A correction to the statement that the size and the stability of microplastics make them “especially difficult” to remove during the wastewater treatment process.</b></p> <p>ACC agrees that more needs to be done at the wastewater treatment step to remove foreign particles and debris of all materials and origin. It is unclear, however, that plastic particles are any more difficult to filter from wastewater than any other solid particle of equivalent size. In fact, in a recent study, the authors noted that</p> <p style="padding-left: 40px;">...researchers could not definitively corroborate the correlation between [wastewater treatment plants] and microplastic pollution found in rivers. There is an ongoing debate about whether discharged effluents substantially contribute to [microplastic buildup, and] there is a lack of certainty about how such pollutants function during the wastewater treatment facilities’ transport processes.</p> <p>Various studies have reported a high removal of microplastics in small capacity wastewater treatment plants, and on the efficiency of low-cost and energy-efficient membrane bioreactor systems to remove microplastics by wastewater treatment facilities. Another</p>	<p>Issue U in Section 7 of the Staff Report has been revised to state that modern wastewater treatment plants may encounter difficulties filtering out microplastics. However, municipal sewage contains high levels of microplastics and microfibers. Although wastewater treatment plants effectively remove microplastic through treatment options, wastewater treatment plants represent a significant source of microplastic when large volumes of wastewater discharges are released. Furthermore, studies have found higher removal efficiency at wastewater treatment plants that employ primary clarification, suggesting that retrofitting secondary wastewater treatment plants with primary clarifiers could improve microplastic removal and may also improve treatment for other constituents of emerging concern (CEC).<sup>1</sup></p>

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			<p>concluded that conventional wastewater treatment removed 98.3% of microplastic load.</p> <p>We suggest modifying this statement to simply note that modern wastewater treatment plans may encounter difficulties filtering very small solid particles as part of the removal of suspended or settling solid particles. In the alternative, the statement could be omitted.</p>	
	1.04	Issue U	<p>We request several specific corrections to the Microplastics and Microfibers narrative at pp. 42-43.</p> <p><b>2. A correction to the statement that microplastics in ocean waters “can persist for thousands of years.”</b></p> <p>Many plastics are highly valued for their durability. However, the environmental fate (breakdown) of plastics in the ocean environment is very much under study, and it is unclear that any particular kind of microplastic (and of course there could be thousands of discrete polymer compounds at issue) can or would “persist for thousands of years” in the ocean as the Draft Staff Report states.</p> <p>For better accuracy, we suggest a simple correction to note that “microplastics may degrade slowly in oceanic conditions.”</p>	Issue U in Section 7 of the Staff Report has been revised to state that microplastics may degrade slowly.
	1.05	Issue U	<p><b>3. Removal of the mischaracterization that microplastics are “pervasive” in the environment.</b></p> <p>Contrary to the characterization made in the second paragraph of the Issue U discussion of the Draft Staff</p>	Recent research suggests that microplastic pollution is found in a variety of environments, including marine waters. <sup>ii,iii,iv,v,vi,vii</sup> Additionally, pilot studies conducted in San Francisco Bay have shown widespread contamination of microplastic pollution at higher levels than the Great Lakes and Chesapeake Bay. <sup>viii</sup>

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			<p>Report, microplastics are not “pervasive” in the environment. Burns and Boxall concluded, based upon their extensive scientific review, that microplastics concentrations detected in the environment are “...orders of magnitude lower than those reported to affect endpoints such as biochemistry, feeding, reproduction, growth, tissue inflammation and mortality in organisms.” Moreover, for the microplastics that are consumed by animals studies have shown microplastics to be benign, passing through fish digestive tracts with comparable ingestion and egestion rates. Similar removal rates have been seen for very small particles capable of passing through the gut epithelium into the bloodstream. Thus, rather than showing a pervasive risk, the current science indicates low environmental microplastic levels, and the vast majority of microplastics that are present pass through animals without deleterious effects.</p> <p>As noted below, we recommend the removal of the second paragraph under the Issue U discussion outright.</p>	<p>Although the referenced Burns and Boxall study finds that microplastic concentrations are “orders of magnitude lower than those reported to affect endpoints such as biochemistry, feeding, reproduction, growth, tissue inflammation and mortality in organisms,” it also concludes that “microplastics do occur in surface water and sediments,” without specifying the degree to which they occur. The referenced study also notes that there is “a mismatch between the particle types, size ranges, and concentrations of microplastics used in laboratory tests and those measured in the environment,” suggesting limitations in available data that may impact results.</p> <p>While the statement that microplastic pollution may pose a threat to marine life has been retained, the second paragraph of Issue U in Section 7 has been revised to reflect other potential threats of microplastic pollution.<sup>ix, x, xi, xii, xiii</sup> The referenced Burns and Boxall study concludes that “based on the current evidence, it is impossible to conclude that microplastics do or do not cause harm to the environment.” Additionally, recent research suggests varying degrees of impacts on marine organisms associated with microplastic pollution.<sup>xiv, xv, xvi</sup></p>
	1.06	Issue U	<p><b>4. Removal of the second paragraph, beginning with “these particles are pervasive and may pose a threat to marine life.”</b></p> <p>We are concerned with the misleading and unfounded statements made in this paragraph and recommend it be removed in its entirety. It is not necessary to advance the purposes of the Draft Staff Report, and the statements are unsupported, inconsistent with the current state of the</p>	<p>See responses to comments 1.02 and 1.05. Furthermore, while microplastics are generally unlikely to be a significant source of exposure for adsorbed persistent organic pollutants to aquatic biota, plastic may be a significant source of plastic-associated toxicants such as endocrine-disrupting plastic additives (BPA, 4-<i>tert</i>-octylphenol, etc.) and flame retardants (PBDEs)<sup>xvii, xviii</sup>.</p> <p>Human health effects of microplastic consumption are poorly characterized. However, seafood has been identified as significant source of exposure of microplastics to humans.<sup>xix</sup></p>

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			<p>scientific literature, and unnecessarily inflammatory. We can all agree that plastic waste does not belong in the ocean, and acknowledge open scientific questions and concerns for which work is underway, but it is also important to characterize the state of the science accurately.</p> <p>For example, in addition to the points made above, recent literature reports have shown aquatic organism exposure to persistent organic pollutants from microplastics to be minute compared to bioaccumulation from consumption of natural prey. Thus, there is no reason to highlight microplastics as a significant vector for POPs if other, natural processes result in overwhelmingly more bioaccumulation. Additional complications arise when it is considered that the POPs would need to desorb while in an animal's gut to provide the amplified toxicity that some commentators have suggested – something that has yet to be demonstrated.</p> <p>This paragraph also states that “[m]icroplastics may also affect human health through the ingestion of marine species.” But humans very likely pass microplastics through their systems without absorption akin to the marine species that have been studied. The few reports that have been performed indicate as much. The report should not prematurely suggest that microplastics present an immediate or significant threat to marine species or to human health.</p>	<p>While it is known that humans ingest microplastics, more research is needed to understand the potential impacts to human health.<sup>xx</sup> Issue U has been revised to clarify that human health effects of microplastics are poorly characterized.</p>
CalDesal	2.01	Issue O	CalDesal is pleased to submit the following comments in response to the State Water Resources Control Board's	The current desalination provisions are resource-intensive and are taking an extended period of time to implement. For



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<p>Representative: Paul Kelley</p>			<p>(State Water Board) publication and invitation to provide comment on the Draft Staff Report and Work Plan for the 2019 Ocean Plan Review. CalDesal provided input on the projects related to the Triennial review of the Ocean Plan during the State Board’s stakeholder workshops in January 2019.</p> <p>CalDesal members generally find the Desalination element of the Ocean Plan, approved in mid-2015, to be an adequate regulatory road map for seawater desalination projects, and would urge that the State Water Board not open this portion of the plan to a long amendment process. We would also mention a note of context in the staff report that the Board adopted the desalination Amendment to the Ocean Plan in May of 2015 and it took effect in January of 2016. That process took over 5 years with many expert panels, interagency meetings and workshops. The result was a complex technical document to achieve the State Water Board’s objectives and this Staff work plan identifies administrative issues that don’t warrant the high level of priority to become a long staff initiative. We recognize there are desalination element implementation issues for applicants, but feel that they can be resolved by staff and applicants.</p> <p>CalDesal is a nonprofit association that advances the use of desalination and salinity management as important options for developing new sources of high-quality and sustainable water supplies for local and regional water reliability. CalDesal actively participated in the State Water Board’s California Ocean Plan Amendment process from the start. During that process the Board accepted</p>	<p>example, facilities not proposing to use the preferred technologies take significantly longer to permit, require additional analyses, and require extensive resources from the state permitting agencies. Project-specific scoping meetings will assist staff in determining if a proposed amendment or administrative correction is the most appropriate option. Therefore, Issue O of the 2019 Ocean Plan Review recommends the State Water Board review the desalination provisions in the Ocean Plan and consider substantive areas to streamline the current permitting process, and to better ensure a timely application review.</p> <p>If the State Water Board directs staff to review the desalination provisions in the Ocean Plan in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation requirements.</p>



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			<p>many of our comments and suggestions as it eventually adopted the Desalination Ocean Plan Amendment in 2015.</p> <p>The Desalination Ocean Plan Amendment recognizes the beneficial use of seawater desalination, and establishes environmental protections when desalination projects are constructed and in operation. Considering the current Ocean Plan’s environmental protections, the importance of good water portfolio planning, and the impacts of droughts and climate change, the effort should now be focused on planning, designing, building and operating critical desalination water supply projects.</p>	
	2.02	Issue O	<p>In this draft work plan Issue “O” has a summary description of “... implementation provisions and proposing an amendment to the Ocean Plan to clarify and streamline implementation”. This is a laudable goal and CalDesal supports administratively clarifying, streamlining, expediting the permitting process and improving interagency coordination. CalDesal feels that Issue O is an administrative cleanup initiative and should be evaluated as such in the issue priority ranking system and there are no compelling reasons for doing a full amendment of the desalination element of the Ocean Plan. We suggest this issue would be better described as medium priority to be monitored in preparation for the next triennial review.</p>	<p>See response to comment 2.01.</p> <p>In addition, the Governor recently issued Executive Order N-10-19, which directs state agencies to develop a comprehensive strategy to build a climate-resilient water system. In order to support this order, new and underutilized water supply options should be explored and potentially permitted in a timely manner. Consequently, a process to review substantive aspects of the desalination regulatory framework and, potentially, a proposed amendment to streamline and expedite the permitting process should be a high priority.</p>
	2.03	Issue O	<p>Our reasoning for this request includes, but is not necessarily limited to, the following:</p>	<p>See response to comments 2.01 and 2.02. Point values were assigned to issues based on an assessment of available information and factors that reflect the scope and authority of the State Water Board and the potential for successful completion of</p>

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			<p>1. In the staff report there is an issue evaluation matrix on page 50 and as it addresses Issue O: Desalination Implementation Provisions we suggest there are some ratings that could be reduced based on the Staff rating criteria.</p> <p>a. In Criteria 1 – we believe the 15 out of 15 points for Issue O is too high and doesn't factor in that the 2015 Desalination Ocean Plan amendment goes a long way to accomplishes this goal. This score should be changed to 5 out of 15 points</p> <p>b. In Criteria 2 – we suggest that again the 2015 Desalination Ocean Plan Amendment goes a long way to accomplish the goal of Aligning Statewide needs to align water quality plans. This score should be changed to 5 out of 10 points.</p> <p>c. In Criteria 6 – noted as “Potential for Completion” underestimates the challenge of a complex element in the Ocean Plan being opened up for a full-scale amendment process. As mentioned above the 2015 Desalination Ocean Plan Amendment took five years. The score for this criterion should be reduced to 3 out of 10 points.</p> <p>Based on these adjustments to the evaluation matrix, Issue O should be modified to a medium score in the priority ranking.</p>	<p>a project. The assigned points to this issue are representative of this comprehensive assessment.</p> <p>Finally, a large number of issues identified in this 2019 Ocean Plan Review received high and very high priority rankings. As referenced in Section 4 of the Staff Report, State Water Board staff will be dedicated to one or more higher priority projects due to limited resources for the purpose of potential future amendments to the Ocean Plan. The high number of issues that received high and very high priority rankings reflect the importance of a wide range of projects. Additionally, as referenced in Section 6 of the Staff Report, lower priority issues are kept on record, may be staffed in the future should priorities change, and may be revisited in future reviews.</p>
	2.04	Issue O	2. There is limited experience issuing permits under the current rules adopted in 2015. Experiences from the	See responses to comments 2.01 and 2.02.

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			<p>issuing of permits provide the best insight into what needs to be clarified to streamline the process, and the State Board should not go through a formal Ocean Plan Amendment process but, rather, consider the applicant's input on the process and provide direction to staff.</p> <p>3. There are projects currently going through the permitting process and any amendment to the rules and regulations at this point would be technically obstructive. Plus, these projects informed the staff and industry on how to handle the issues identified on page 36 of the staff report, and can be better classified as medium priority. These could also be monitored over the subsequent 3 years and may then rise in priority during the next triennial review.</p> <p>4. It's been a short 4 years since the adoption of the Ocean Plan and, with an already lengthy project permitting process and planning timeline, a formal process for changing the rules now -- via a full-on Ocean Plan Desalination Amendment process -- would be counterproductive.</p>	<p>Should the State Water Board direct staff to proceed with reviewing the desalination provisions, one of the first steps will be to review substantive aspects of the desalination regulatory framework. It may be appropriate to provide direction to staff separate from an amendment to the Ocean Plan, or an amendment may be necessary.</p> <p>Any proposed changes to the Ocean Plan would require public scoping. The State Water Board will work with project applicants currently applying for permits to limit the impact of any proposed changes to the Ocean Plan desalination provisions.</p>
	2.05	Issue O	<p>5. If by some remote chance that Issue O becomes a Desalination Ocean Plan amendment, all applicants in the pipeline should get pipeline status and be processed under the rules/Ocean Plan requirements in place at the time of the application.</p>	<p>See response to comment 2.04. Should the State Water Board direct staff to proceed with reviewing the desalination provisions, any projects with pending applications would be considered on a case-by-case basis.</p>
	2.06	Issue O	<p>6. At the adoption of the current Ocean Plan Desalination Amendment, the Board determined that an MOU was to be signed and entered into between the State Water Board and other State agencies to implement and streamline the</p>	<p>Staff is developing a Memorandum of Agreement (MOA). The purpose of the MOA is to facilitate timely and effective coordination among the State Water Board and other state agencies during review of environmental documents and permits</p>

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			<p>desalination facility permitting process. This could be a key element in streamlining the permitting process and would accomplish the goals of Issue O without ranking it a “High Priority”. Nonetheless, an MOU hasn’t been signed to date and, thus, it is not necessary to amend the desalination element of the Ocean Plan until this implementing document has been active and has issued permits.</p>	<p>or lease applications for proposed seawater desalination facilities. The agreement aims to address the following main issues:</p> <ul style="list-style-type: none"> <li>I. Coordinating on desalination project information needs before and during California Water Code (Water Code) section 13142.5(b) determinations, permitting or leasing application reviews, and environmental reviews under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act;</li> <li>II. Developing and requesting the information necessary to conduct review of proposed desalination projects.</li> <li>III. Maintaining confidentiality of communications, discussions, and records; and</li> <li>IV. Conducting supplemental agency review for proposed changes to permitted facilities.</li> </ul> <p>Additionally, prior to MOA development, the State Water Board has been working with interagency partners throughout the development and implementation of desalination provisions in the Ocean Plan. This collaboration occurs for projects with and without pending applications.</p>
	2.07	Other	<p>7. There are at least three other Ocean Plan issues identified as “High Priority” on the issues list, and since the stated staff capacity is capable of handling one to three of these issues – the board could focus staff resources on those higher priority Ocean Plan issues during the next three years and let staff concentrate on processing applications under the current desalination element of the Ocean Plan.</p>	<p>Although finite resources will limit the number of projects that can be staffed and/or completed in the coming years, the number of selected projects is not predetermined. As stated in Section 6 of the Staff Report, to facilitate limited resources and time efficiently, State Water Board staff will generally focus on the highest priority issues. While the Work Plan in Section 8 of the Staff Report identifies the five highest priority issues, these five issues are not predetermined to be selected as projects. Furthermore, lower priority projects are kept on record, may be</p>

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				staffed in the future should priorities change, and may be revisited in future reviews.
	2.08	Issue T Issue H	In particular Issue T – Tribal Beneficial Uses gets a Very High priority ranking and the board could be well served to allocate staff resources on this element. The other is Issue H – Shellfish Harvesting Beneficial uses gets a Very High priority and considering the broad community issues and impacts this of this amendment on multiple communities and areas in California – the board would be well served to focus staff resources on this issue.	Comment noted.
	2.09	Other	Lastly, we feel that the State Board staff should be directed to do a triennial review in the three-year timeframe (2023) to make sure that issues in this work plan that aren't tasked as projects or amendments during this staff work plan, can be monitored and brought to attention at the next triennial review for prioritization and work plan implementation.	As referenced in Sections 1 and 2 of the Staff Report, the State Water Board conducts reviews of the Ocean Plan periodically and intends to conduct the next review process in three years. Additionally, see response to comment 2.07.
<b>California Coastal Commission</b> Representative: Tom Luster	3.01	Issue O	Thank you for the opportunity to comment on proposed changes the State Water Quality Control Board (“Board”) is considering to the state’s Water Quality Control Plan for Ocean Waters of California (“Ocean Plan”). Of the 17 issue areas Board staff identified in its June 24, 2019 Draft Staff Report and Work Plan for 2019 Review of the Water Quality Control Plan for Ocean Waters of California, we are commenting on just one- a recommended change to the Ocean Plan’s requirements for seawater desalination facilities (Issue O). As detailed below, we recommend the Board modify the Ocean Plan to require that applicants conduct new entrainment studies rather than allowing	See responses to comment 2.01. Additionally, in the review of the desalination provisions of the Ocean Plan, State Water Board staff may consider the appropriateness of using existing or new entrainment studies when determining the best available site. Staff may also consider other comments submitted as part of the 2019 Ocean Plan Review record.

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			<p>Regional Boards to rely on the available existing studies. These existing studies are out-of-date and cannot be used to determine the best available site for minimizing the intake and mortality of marine life.</p>	
	3.02	Issue O	<p>Background</p> <p>The Board’s 2015 adoption of the Ocean Plan’s desalination provisions provided the Regional Boards and Coastal Commission a valuable tool for evaluating proposed seawater desalination facilities. Given the potential for these facilities to cause extensive adverse effects on marine life and ocean water quality, we recommend the Board maintain the Plan’s current comprehensive and protective requirements, with just one modification – to require new or updated entrainment studies instead of allowing the use of past studies.</p>	See response to comment 3.01.
	3.03	Issue O	<p>One of the Ocean Plan’s key requirements, and one that is highly protective of marine life, is that desalination facilities are to use subsurface intakes where feasible. These types of intakes completely avoid or reduce to <i>de minimis</i> levels the intake and mortality of marine life. When a Regional Board determines that subsurface intakes are infeasible, the Ocean Plan allow for approval of intakes within the water column, but only when the intakes are screened and only when the Board determines that the screened, water column intake would be sited and designed to minimize the intake and mortality of marine life. To determine where to site this type of intake to achieve that requirement, the Ocean Plan requires the project applicant to demonstrate through a number of analyses, including use of the</p>	See response to comment 3.01.

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			<p>Empirical Transport Method ("ETM") and Area of Production Foregone ("APF") approach, that when compared to a reasonable range of alternative feasible sites, the intake is located where it will minimize the intake and mortality of marine life. The current Ocean Plan allows the Regional Boards to use existing entrainment studies in this determination.</p> <p>However, it has become clear during reviews conducted since adoption of the desalination provisions that these existing studies, which were previously used to identify the entrainment effects of power plant once-through cooling systems, are not adequate to determine whether a proposed desalination intake will be at the best feasible site to minimize entrainment. The available studies have two main shortcomings:</p> <ul style="list-style-type: none"> <li>• First, they were designed to identify expected entrainment impacts at just a single location - an existing power plant outfall - and the data collected as part of these studies were focused on that one purpose. The studies were not meant to identify or compare expected entrainment rates at multiple potential intake locations, as the Ocean Plan requires.</li> <li>• Second, the entrainment data for these existing studies were collected during the late 1990s and the 2000s. These data are now a decade or two old and likely do not characterize the biological community now present in California's coastal waters.</li> </ul>	



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			<p>As an example, during the agencies' recent review of the proposed Poseidon Huntington Beach desalination facility, we agreed to use a 2006 entrainment study conducted to determine entrainment effects at the Huntington Beach Power Plant, whose intake Poseidon now proposes to use for its desalination facility. The 2006 study collected data from some nearby locations, but collected the full set of data needed to calculate ETM/APF results from just the location of the power plant intake. Although several of these nearby locations appeared to provide sites that would have had much lower entrainment rates than the existing intake location, the lack of adequate data collected for that study made those determinations inconclusive. To our knowledge all of the other existing entrainment studies have this same lack of data, thereby making them unsuitable for determining conformity to this component of the Ocean Plan.</p>	
	3.04	Issue O	<p>We continue to support the Plan's requirement that these marine life impacts be characterized using the ETM/ APF approach, as this approach provides us with the clearest and most comprehensive understanding of the type and extent of an desalination intake's entrainment effects and provides a useful tool to help determine the type and amount of mitigation needed to make up for the marine life productivity lost due to the intake. To be effective, however, this approach requires new entrainment studies that collect adequate data from multiple locations to allow for a comparison among potential intake sites.</p> <p>We recognize that conducting an updated entrainment study that will adequately characterize several locations</p>	See response to comment 3.01.

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			<p>would cost more than those earlier studies that characterized just one location. However, because the new studies presumably could identify the sites where an intake could feasibly be located to cause fewer entrainment impacts, the applicant would be responsible for providing less mitigation than might otherwise be required. In the above-referenced Poseidon Huntington Beach review, for example, Poseidon's overall entrainment impacts at the existing intake site have an APF of more than 400 acres. Had adequate data been available to support the possibly lower entrainment seen at other locations, Poseidon could have had an intake location with up to about 40% less entrainment and a similar reduction in required mitigation.</p>	
	3.05	Issue O	<p><b>Proposed Modifications</b></p> <p>Based on the above, we recommend that the Board modify the Ocean Plan as follows:</p> <ul style="list-style-type: none"> <li>• Section III.M.2.a.(1): Modify the third sentence of this section as follows: "The regional water board in consultation with the State Water Board staff <del>may</del> <b>shall</b> require an owner or operation to provide additional studies or information <del>if needed</del>, including any information necessary to identify and assess other potential sources of mortality to all forms of marine life."</li> <li>• Section III.M.2.d.(1)(c)iii: Delete the last sentence of this section, which states:</li> </ul>	See response to comment 3.01.

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			<p>"At their discretion, the regional water boards may permit the use of existing entrainment data to meet this requirement."</p>	
<p><b>California Coastkeeper Alliance</b> Representative: Sean Bothwell</p>	4.01	<p>Issue F Issue H Issue I Issue O</p>	<p>The State Water Board’s Ocean Plan is a key tool in efforts to protect the health of our coast and ocean, and to protect our investment in California’s statewide network of marine protected areas (MPAs). We thank and applaud State Water Board staff for considering and prioritizing CCKA’s previous input on the Ocean Plan Triennial Review. We strongly encourage the State Water Board Members to adopt a Triennial Review workplan that prioritizes the following projects scored “very high” and “high” by your staff:</p> <ul style="list-style-type: none"> <li>(1) Project I – Exceptions to the Ocean Plan for Discharges into ASBS [Total Score 46; Very High]</li> <li>(2) Project O – Desalination Implementation Provisions [Total Score 46; Very High]</li> <li>(3) Project F – Ocean Acidification, Hypoxia, and Climate Change Impacts [Total Score 45; High]</li> <li>(4) Project H – Shellfish Harvesting Beneficial Uses and WQOs [Total Score 44; High]</li> </ul> <p>Given the State Water Board’s resource constraints, the above four projects are desperately needed and should be prioritized above all other potential projects.</p>	<p>Comment noted. See responses to comments 4.02 through 4.10.</p>

Organization	No.	Issue	Comment	Response
	4.02	Other	<p>While we feel that these four issues most urgently necessitate amendments to the Ocean Plan, we also strongly recommend the State Water Board evaluate and provide guidance to Regional Boards for creating water quality protections for marine protected areas. Seven years after the State Water Board's 2012 adoption of amendments to create a process to designate new State Water Quality Protected Areas (SWQPA), the protections have not been utilized by Regional Water Boards. State Water Board review of the SWQPA process, as currently described, is needed to consider whether procedural obstacles have precluded designation and whether an alternative process would better facilitate state-regional coordination and implementation. We urge the Board to consider these and other coastal water quality and ocean health issues in its Triennial Review Process.</p>	<p>The Ocean Plan includes two types of State Water Quality Protected Areas (SWQPA): Areas of Special Biological Significance (ASBS or SWQPA-ASBS) and General Protection (SWQPA-GP). Appendix IV of the Ocean Plan describes the procedures for nominating and designating ocean waters as SWQPA-ASBS or SWQPA-GP. As stated in Appendix IV, any person may nominate areas of ocean waters for designation as SWQPA-ASBS or SWQPA-GP, including the State Water Board and the Regional Water Boards. Nominations shall be made to the appropriate Regional Water Board and must meet the criteria listed in paragraph 1 of Appendix IV. These criteria reflect the minimum information necessary to determine the need for designation of ocean waters as either category of SWQPA and for the Regional Water Board to prepare a Draft Nomination Report supporting the nomination.</p> <p>The State Water Board will continue to engage with the Regional Water Board and interested parties and communicate the procedures for nomination and designation of SWQPA described in Appendix IV. The State Water Board may consider the need to amend the procedures in Appendix IV during a subsequent review of the Ocean Plan, if found necessary.</p>
	4.03	Issue F	<p>The State Water Board should not delay development of an ocean acidification and hypoxia (OAH) Water Quality Objective. Rather, the State Water Board should move forward with the development of an Objective as the research continues to assess the proper parameters and threshold levels. The science clearly demonstrates that land-based anthropogenic sources are contributing to OAH hot spots and those hot spots are having an impact on marine life. While we agree with staff's assessment that more research is needed to develop appropriate water</p>	<p>As stated in Section 7, Issue F of the Staff Report, the State Water Board is engaged with the Southern California Coastal Water Research Project (SCCWRP) in the development and validation of models evaluating the localized impacts of land-based sources of nutrients on ocean acidification and hypoxia in California's coastal waters focusing on the Southern California Bight. The State Water Board will continue to participate in this and other ocean acidification and hypoxia (OAH) working groups and workshops, and will continue to explore which indicators and thresholds would be appropriate for the development of</p>

Organization	No.	Issue	Comment	Response
			<p>quality objective parameters and threshold levels to address OAH, that research can be done concurrently with the State Water Board's development of an Objective. For example, the State Water Board didn't know the proper way to calculate the marine life impact of ocean desalination prior to the development of the Desalination Ocean Plan Amendment. That did not prevent the State Water Board from moving forward with the Amendment while appointing expert panels necessary to determine the proper calculation for marine life impacts and thus how to calculate a mitigation fee (water recycling regulations is another good example of developing standards while completing the science). The same should be done here with the OAH Water Quality Objective. Given the serious nature of OAH, the State Water Board should not delay in setting a standard, but rather begin the development of the Objective now while holding the necessary expert panels to ensure the best available science is used to determine parameters and thresholds.</p>	<p>proposed water quality objectives in the Ocean Plan addressing OAH.</p> <p>Additionally, the State Water Board is in the process of establishing a subcommittee to provide guidance in determining how current water quality objectives for pH and dissolved oxygen in the Ocean Plan could be used to evaluate the findings from the OAH modeling study led by SCCWRP for the Southern California Bight and how to address impacts of OAH to coastal waters, such as establishing water quality objectives.</p> <p>These research-focused steps are necessary in order to determine the scope of a potential amendment to the Ocean Plan, including potential water quality objectives, for OAH.</p>
	4.04	Issue I	<p><i>1. The State Water Board Members should prioritize addressing the pervasive non-compliance with the Areas of Special Biological Significance program [Project I; Score 46; 'Very High' Staff Recommendation].</i></p> <p>The Areas of Special Biological Significance (ASBS) program was developed in the 1970s to protect the water quality of California's most special, biologically diverse marine ecosystems. However, at the time the program was developed and the first ASBSs were designated in 1974, the extent of stormwater pollution, and the impact it has on coastal water quality, was not fully understood.</p>	<p>Issue I in the 2019 Ocean Plan Review is a very high priority issue. The State Water Board recognizes the difficulties dischargers encountered in complying with the Special Provisions established in Resolution No. 2012-0012, referred to as the ASBS General Exception. The State Water Board also recognizes the need for a programmatic review to determine discharger compliance and whether additional requirements are necessary to ensure protection of water quality in ASBS. As resources become available, the State Water Board may review the provisions in the Special Protections, Compliance Plans, and the monitoring data collected by dischargers to evaluate if the</p>

Organization	No.	Issue	Comment	Response
			<p>Subsequent efforts by the State Water Board to update the Ocean Plan to address pervasive discharges and administer monitoring programs to assess and meet “natural water quality” have largely failed. This failure is in large part due to rampant non-compliance throughout the network.</p> <p>A 2015 analysis by CCKA of ASBS Compliance Plans revealed evidence of widespread non-compliance and dysfunction with the ASBS program. CCKA submitted a Public Records Act (PRA) request to the State Water Board to obtain the monitoring and compliance documentation required by the Ocean Plan ASBS Exception Policy for permittees in San Diego, Los Angeles, Orange County, Monterey, and Humboldt. A review of the Board’s response to the PRA, in addition to draft compliance reports subsequently made available online, showed a series of Draft Compliance Plans in various stages of incompleteness. Permittees generally failed to submit complete monitoring results or propose best management practices (BMPs) and, in many cases, included sample results that demonstrated violations of the ASBS Exception.</p> <p>According to CCKA’s review, none of the permittees had even acknowledged that their discharges were altering natural coastal water quality, and so were not undertaking measures to address those violations. The monitoring results also showed that none of the permittees used, applied, or demonstrated compliance with the standards for pollution control set out in the ASBS Exception. In addition, none of the plans proposed BMPs beyond those</p>	<p>measures required to assure maintenance of natural water quality in the ASBS are appropriate.</p> <p>In addition, if the State Water Board directs staff to review the exceptions to the Ocean Plan for discharges into ASBS in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation requirements. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.</p>

Organization	No.	Issue	Comment	Response
			<p>already required under other existing programs. This review confirmed that non-compliance is widespread throughout the ASBS network, and that the exemptions allowing stormwater discharges that do not alter natural water quality are technically difficult to evaluate for compliance. The State Water Board should direct non-compliant dischargers to install BMPs to address exceedances, and to require additional monitoring to demonstrate BMP effectiveness and compliance with natural water quality.</p> <p>For these reasons, the State Water Board Members should prioritize addressing the pervasive non-compliance issues with the ASBS Exception Policy in the Triennial Review workplan.</p>	
	4.05	Issue O	<p><i>2. The State Water Board Members should prioritize amending the Desalination Implementation Provisions to ensure marine life mortality is minimized to the 'best available' degree while providing timely review of project proposals [Project O; Total Score 46; 'Very High' Staff Recommendation].</i></p> <p>The State Water Board should revise the Desalination Ocean Plan Amendment (OPA) to be centered around best available technology to minimize marine life mortality. The current Desalination OPA allows numerous exemptions, loopholes, and ambiguities, which have led to project proposals that will perpetuate the significant harm once thought to be addressed by the Once-Through Cooling (OTC) Policy – significant marine life mortality from the intake of seawater. The Desalination OPA was</p>	<p>See responses to comment 2.01. Additionally, in the review of the desalination provisions of the Ocean Plan, State Water Board staff may consider best available technology and these and other comments submitted as part of the 2019 Ocean Plan Review record.</p>



Organization	No.	Issue	Comment	Response
			<p>developed – in a time of extreme drought – with enormous pressure from a private corporation with significant financial incentive to continue the use of open-ocean intakes from antiquated coastal power plants and reflects that view rather than the public interest. The State Water Board should have adopted a desalination policy consistent with the OTC Policy, which set a clear best available technology standard and unambiguous implementation requirements for ensuring compliance. Instead, the current Desalination OPA provides for Regional Boards to undertake, in the course of each new permitting process, a complex legal and factual balancing analysis that includes, confusingly, both separate and simultaneous analysis of several different terms of Water Code § 13142.5(b). The result is difficult to understand and apply and does not provide for consistent application of the law to protect the marine environment, as was its original intent.</p> <p>As the Desalination OPA is currently drafted, project proponents will continue to propose open ocean intakes as demonstrated by the proliferation and advancement of multiple proposals for projects that would use open ocean intakes, including those that would perpetuate the use of power plant intake facilities that were otherwise slated for decommissioning under the OTC policy. If the Desalination OPA signaled clear and consistent standards to industry, such proposals would have been discarded in favor of those using subsurface intakes – a method that is proven to significantly reduce marine life mortality. The current Desalination OPA is unworkable, will fail to achieve the purpose of protecting marine life, and must be revised to</p>	

Organization	No.	Issue	Comment	Response
			effectively advance the goals of state law. In the meantime, the Regional Boards must strictly interpret and enforce the regulations to maximize the intended marine life protections until the textual ambiguities are amended.	
	4.06	Issue F	<p><i>3. The State Water Board Members should be leaders in, and prioritize, addressing changing ocean conditions, including setting an Ocean Acidification and Hypoxia Water Quality Objective with an implementation plan for ensuring we eliminate OAH hot spots along the California coast [Project F; Score 45; 'High' Staff Recommendation].</i></p> <p>Ocean acidification and hypoxia (OAH) are increasingly present in coastal waters, as global carbon dioxide emissions have rapidly increased. The fundamental changes we are seeing in the chemical composition of seawater threaten the health of coastal ecosystems and the communities and industries that depend on the marine environment. Research suggests that the West Coast of North America will face some of the earliest and most severe changes in ocean chemistry, underscoring the need for the state to take immediate and effective action to mitigate OAH.</p> <p>The problem is not only caused by global carbon emissions, but other land-based sources of pollution that contribute to localized OA hot spots. Runoff and wastewater discharges are often laden with nutrients, particularly nitrogen, which trigger algal blooms. When the algae die, they are eaten by bacteria that release CO2 into the water as they respire, increasing regional acidity. To add further stress to the marine ecosystem, polluted runoff</p>	See response to comment 4.03.

Organization	No.	Issue	Comment	Response
			<p>can also contribute to hypoxia, or low oxygen conditions, which is often associated with OAH and can cause “dead zones”, decimating local fisheries.</p> <p>In 2015, an unprecedented toxic bloom of the marine diatom <i>Pseudo-nitzschia</i> stretched from central California to the Alaskan Peninsula and had significant impacts on coastal economies and marine resources and wildlife, costing crab fisherman a total of \$100 million. OA is particularly damaging to shellfish, including mussels, oysters, and abalone, which are important mariculture species. Shellfish farms operate up and down the California coast, and new efforts like the Ventura Shellfish Enterprise aim to significantly increase mariculture in Southern California. However, the industry is at risk from OA and the water quality issues associated with pollution that causes OA hot spots.</p> <p>The Southern California Bight is one of the most densely populated coastal regions in the United States. Twenty-three publicly owned treatment works (POTWs) discharge millions of gallons of effluent into the Southern California Bight each day. The Bight is also home to important fisheries species, as well as 50 of the state’s marine protected areas (MPAs). While MPAs can bolster marine environments against the impacts of climate change, they can also co-occur with OA hotspots.</p> <p>OA has a myriad of impacts on marine life, and OA levels are expected to grow nearly 150 percent by the year 2100 if high CO2 emissions continue. While decreasing carbon emissions is a necessary next step to combating OAH, it</p>	

Organization	No.	Issue	Comment	Response
			<p>requires global action. California can act now to protect its coastline from the harmful effects of OAH by controlling the sources of pollution that feed its growth. The 2016 West Coast OAH Science Panel Report outlines a number of “no-regrets” actions the State Water Board and other agencies can take. Specifically, the OAH Panel recommends prioritizing mitigating local water quality inputs that exacerbate acidic conditions and undertaking habitat protection and restoration to make the ocean ecosystem more resilient to OAH impacts.</p>	
	4.07	Issue F	<p>The State Water Board Members should prioritize setting a new OAH water quality objective using the best available science. As the foundation of management activities, water quality criteria set by the State and Regional Water Boards provide managers with thresholds to objectively determine the condition of a water body and set targets for clean-up efforts. New criteria are needed as existing standards, created four decades ago, are not up to date with the best available science related to seawater chemistry and are no longer scientifically valid for assessing OAH conditions. For example, even if existing water quality criteria for seawater pH are met, studies have shown that a wide range of severe biological impacts of acidification are still observed.</p> <p>California can set an international precedent for addressing local OAH hot spots by setting an OAH water quality objective, treating wastewater through denitrification (removing nitrogen), and encouraging the elimination of ocean wastewater discharges altogether. Removing nitrogen and harmful pollution has multiple</p>	See response to comment 4.03.

Organization	No.	Issue	Comment	Response
			benefits beyond minimizing OA hot spots, including enhancing water quality and preventing HABs and hypoxic events. This strategy, in combination with blue carbon strategies and protecting and restoring coastal wetlands, can set California's ocean ecosystems on the path toward a more resilient future.	
	4.08	Issue F	At present, the State Water Board is working with the Ocean Protection Council, the Ocean Science Trust, the Southern California Coastal Water Research Project (SCCWRP), and others to better understand three questions associated with OAH. Two of the three questions have been modeled and answered in the affirmative that OAH is causing hot spots. The first question: "what is the relationship between ocean acidification and hypoxia and impacts to marine life?" Answer: OAH is having a detrimental impact on marine life. The second question: "are land-based, anthropogenic sources contributing to impacts? Yes. The last question: "what parameters and threshold levels are appropriate water quality objectives to address climate change and local stressor effects on marine ecosystems?" This research is still underway.	Comment noted. Additionally, please see response to comment 4.03.
	4.09	Issue F	The State Water Board should not delay development of an OAH Water Quality Objective. Rather, the State Water Board should move forward with the development of an Objective as the research continues to assess the proper parameters and threshold levels. The science clearly demonstrates that land-based anthropogenic sources are contributing to OAH hot spots and those hot spots are having an impact on marine life. While we agree with	See responses to comment 4.03.

Organization	No.	Issue	Comment	Response
			<p>staff's assessment that more research is needed to develop appropriate water quality objective parameters and threshold levels to address OAH, that research can be done concurrently with the State Water Board's development of an Objective. For example, the State Water Board did not know the proper way to calculate the marine life impact of ocean desalination prior to the development of the Desalination Ocean Plan Amendment. That did not prevent the State Water Board from moving forward with the Amendment while appointing expert panels necessary to determine the proper calculation for marine life impacts and thus how to calculate a mitigation fee (water recycling regulations is another good example of developing standards while completing the science). The same should be done here with the OAH Water Quality Objective. Given the serious nature of OAH, the State Water Board should not delay in setting a standard, but rather begin the development of the Objective now while holding the necessary expert panels to ensure the best available science is used to determine parameters and thresholds.</p> <p>We recommend staff make the following change to its Ocean Plan Triennial Review OAH recommendation for Project F:</p> <p>More research is needed to develop water quality objectives and a program of implementation that would improve resiliency of coastal environments. Therefore, State Water Board staff recommends continuing to participate in ongoing research, <u>while concurrently and</u> undertaking a project to consider</p>	

Organization	No.	Issue	Comment	Response
			<p>water quality objectives and a program of implementation associated with ocean acidification and hypoxia. <u>The project should be adopted</u> once sufficient scientific information is available.</p>	
	4.10	Issue H	<p><i>4. The State Water Board Members should prioritize the development of a commercial shellfish harvesting water quality objective [Project H; Score 44; 'High' Staff Recommendation].</i></p> <p>The Water Boards' objectives for protecting shellfish harvesting are sorely outdated and not in line with current science. Chapter II of the 2009 Ocean Plan lays out bacterial water quality standards for areas where the designated beneficial uses of water include contact recreation and shellfish harvesting. However, the existing Ocean Plan does not include form standards in waters where mariculture is a beneficial use and shellfish are harvested for human consumption.</p> <p>Adopting a fecal coliform standard for shellfish harvesting areas was identified as a high priority in Issue 5 of the Ocean Plan Triennial Review Workplan in 2011. This issue was also highlighted in the Triennial Review Workplan in 2005, but little progress has been made towards that goal in the interim. This effort seems to have been lost as the Oceans Unit focused increasingly on developing the Ocean Desalination and Trash Amendments. Now that the Oceans Unit is no longer working on the development of those amendments, and their work on implementing the OTC Policy is winding</p>	<p>Comment noted. As stated in the Staff Report, Issue H ranked as a high priority. Issue H includes considering revising the water quality objectives for shellfish harvesting to effectively protect human health related to commercial and recreational shellfish harvesting. The State Water Board may also consider developing beneficial uses and water quality objectives distinctive to recreational, commercial, and tribal shellfish harvesting. Should resources be dedicated to addressing this issue, the scope and extent of such an amendment would be determined during project scoping.</p> <p>As stated in Section 4 of the Staff Report, staff resources available to work on issues identified in the 2019 Ocean Plan Review are primarily within the Division of Water Quality's Ocean Standards Unit, although resources from other units within the Division of Water Quality may also be available. Resources to address issues identified in the 2019 Ocean Plan Review are limited and will be dedicated to working on one or more higher priority issues in the coming years.</p>



Organization	No.	Issue	Comment	Response
			<p>down, the State Water Board should reactivate its work to modernize bacterial standards for SHELL beneficial uses.</p> <p>The State Water Board has made some progress toward this goal, primarily by funding the Southern California Coastal Water Research Project (SCCWRP) for technical assistance and by recognizing the inherent difficulties in achieving existing bacteria standards in locations where shellfish habitat exists. The State Water Board has also announced they are developing beneficial use alternatives to address the differences between Regional Boards in the definition of the SHELL beneficial use, which is the use of water that supports habitat suitable for the collection of shellfish for human consumption, commercial, or sport purposes.</p> <p>California needs bacterial standards for SHELL beneficial uses. We urge the State Water Board Members to prioritize adoption of a new standard for shellfish harvesting areas using the best available science.</p>	
<p><b>California Stormwater Quality Association</b> Representative: Daniel Apt</p>	5.01	Issue H Issue N Issue S	<p>CASQA has worked extensively with the State Water Resources Control Board (State Water Board) through the development of the recently adopted Bacteria Water Quality Objectives and is particularly supportive of projects related to Issue N (Bacteria Objectives for Water Contact Recreation), Issue H (Shellfish Harvesting Beneficial Uses and Water Quality Objectives), and Issue S (Natural Source Exclusion). These projects have the potential to further our understanding of water quality issues related to bacteria and to improve regulation reflective of the most</p>	Comment noted.

Organization	No.	Issue	Comment	Response
			<p>recent scientific studies and should be prioritized. The comment submitted herein are focused on improvements to the scope of Issues N and H, as presented within the Draft Staff Report and Work Plan.</p>	
	5.02	Issue N	<p><b>Comment #1: Issue N – Bacteria Objectives for Water Contact Recreation. State Water Board staff should be allocated the time necessary to effectively engage in a statewide process to address bacteria-related issues.</b></p> <p>In mid-2018, CASQA undertook a prioritization process to identify the highest priorities from its Vision and Strategic Actions for Managing Stormwater in the 21<sup>st</sup> Century (December 2017), as well as key water quality-related concerns/priorities of the CASQA leadership and membership. Through this process, CASQA identified bacteria as a mission-critical priority, primarily based on input from CASQA members regarding the challenges associated with attaining bacteria objectives. Stormwater permittees through California, especially in Southern California, have identified bacteria as a high priority in their watershed planning efforts. Additionally, significant resources are being invested in developing new science and information to support the identification of more effective mechanisms to protect beneficial uses. CASQA and its members are leading a statewide process where water quality standards related to bacteria can evolve based on this new science and information to ensure that implementation efforts are properly focused on the protection of recreational beneficial uses and will lead to compliance for stormwater Permittees.</p>	<p>The estimated resources required for Issue N: Bacteria Objectives for Water Contact Recreation in the Staff Report was changed from 2 PYs to 3 PYs to reflect likely staff effort to coordinate with stakeholders, including those associated with storm water discharges and the Division of Water Quality’s Strategy to Optimize Resource Management of Storm Water. In addition, if the State Water Board directs staff to review bacteria objectives in accordance with the recommendation in the 2019 Ocean Plan Review, the resources required to complete the project will be reassessed and considered during the project scoping phase.</p>

Organization	No.	Issue	Comment	Response
			<p>Additionally, there are a number of other related efforts throughout the state to address technical and regulatory challenges associated with bacteria objectives including:</p> <ul style="list-style-type: none"> <li>• The State Water Board has been revitalizing and coordinating a Safe to Swim Network as a forum for discussing technical topics and, as a result, has identified bacteria related issues and recommendations in the Ocean Plan triennial review;</li> <li>• Technical researches, such as scientists at the Southern California Coastal Water Research Project, Dr. Ali Boehm, and Dr. Rachel Nobel, are responding to the high level of interest in bacteria with separate microbial research plans; and</li> <li>• United States Environmental Protection Agency (EPA) is in the process of developing a new recommended coliphage criterion.</li> </ul> <p>In order to support these various efforts, CASQA has undertaken a new project (Statewide Bacteria Effort) with the goal of working with the State Water Board to establish and implement a statewide effort to address technical and regulatory issues related to bacteria, similar to the effort implemented to develop and adopt the Sediment Quality Objectives (SQOs). The statewide effort will include a broad range of stakeholders (State Water Board, Regional Water Boards, EPA, stormwater permittees, wastewater permittees, non-governmental organizations), working collaboratively through a unified process. It will replace</p>	

Organization	No.	Issue	Comment	Response
			<p>the existing scenario where stormwater programs are addressing bacteria-related issues of statewide or national significance on a permit-by-permit (or even permittee-by-permittee) basis. The final, desired outcome is to collaboratively resolve the technical and regulatory challenges related to bacteria in order to sustainably and pragmatically achieve water contact recreation beneficial uses.</p> <p>The CASQA priority project was initiated based on the recognition that effectively addressing risk associated with water contact recreation will require resources and coordination to best consider and incorporate the latest science and information. CASQA is committed to engaging with the State Water Board staff and other stakeholders to support the requested expansion of the scope of Issue N outlined in Comment #2 as one piece of this broader priority project. The Ocean Plan Triennial review prioritization process provides an opportunity for the State Water Board to obtain resources to work with CASQA on this priority project. As a result, CASQA requests that the recommendation includes sufficient resources for engagement of State Water Board staff in this statewide effort.</p> <p><b>CASQA Recommendation:</b></p> <ul style="list-style-type: none"> <li>• <i>Include additional time within the recommendation for Issue N for State Water Board staff to effectively engage in the statewide process led by CASQA. It</i></li> </ul>	

Organization	No.	Issue	Comment	Response
			<i>is suggested that at least 1 Person Year (PY) be added to Issue N to support the statewide process.</i>	
	5.03	Issue N	<p><b>Comment #2: Issue N - Bacteria Objectives for Water Contact Recreation. Modify the Recommendation to include continued assessment of pathogen indicators and their implementation, accounting for risk, salinity, and California-specific studies.</b></p> <p>CASQA supports the recommendations related to Issue N (Bacteria Objectives for Water Contact Recreation) as they will further efforts to address longstanding issues with recreational water quality objectives.</p>	Comment noted.
	5.04	Issue N	<p>However, it is important to continually advance our thinking and make sure these projects move towards supporting more sustainable stormwater management. As was noted in our comment letter and testimony on the Statewide Bacteria Provisions, the science and methods for evaluating the risk to human health is rapidly evolving. As a result, the proposed projects related to bacteria objectives should be broad enough to consider alternatives to fecal indicator bacteria objectives, if warranted, to effectively protect people recreating in California's waterbodies.</p> <p>As drafted, the State Water Board acknowledges in Issue N that "(I)n adopting the amendment to the water contact standards, the State Water Board directed staff to review the fecal coliform objective, including the duration and magnitude metrics, and continue to assess pathogen indicators and their implementation, accounting for risk</p>	The recommendation for Issue N in Section 7 of the Staff Report was revised to be representative of the direction provided by the State Water Board in directive 3 of Resolution No. 2018-0038, which includes the continued assessment of pathogen indicators and their implementation, accounting for human health risk, salinity, and California-specific studies. When scoping the project, the State Water Board may consider risk-based approaches to developing and implementing water quality objectives related to water contact recreation, and alternatives to fecal indicator bacteria, including alternative bacteria and pathogen indicators.

Organization	No.	Issue	Comment	Response
			<p>and California-specific studies." (Draft Staff Report, page 35). CASQA is supportive of this direction, but it appears that the recommendation in the Draft Staff Report is limited to review of the epidemiology studies (brought to bear to support the inclusion of the fecal coliform water quality objective) and potentially revising the fecal coliform objective.</p> <p>While CASQA is supportive of the recommendation, it is important to not only consider the fecal coliform objectives, but also assess other pathogen indicators and other methods of assessing risk from water contact recreation as part of the triennial review project. As stated in the Resolution adopted to incorporate the updated Bacteria Provisions into the Ocean Plan, a primary purpose of conducting a triennial review is to ensure water quality standards are based on current science and methodologies, and address U.S. EPA mandates, recommendations, and guidance. As a result, the assessment should not be limited to fecal indicator bacteria. To fully carry out the direction of the State Water Board, as included in the Resolution, the recommendation pertaining to Issue N should include continued work to further our understanding of risk-based approaches to managing water quality related to the water contact recreation beneficial use and considerations of alternatives to the fecal indicator bacteria objectives, including both enterococci and fecal coliform. The path forward should acknowledge that the fecal coliform objectives do not reflect the latest science and epidemiology and alternatives to fecal indicator bacteria (FIB) may provide a</p>	

Organization	No.	Issue	Comment	Response
			better mechanism for protecting recreational beneficial uses.	
	5.05	Issue N	Additionally, CASQA supports Issue N as a "very high" priority as designed in the matrix in Appendix 1. However, this scoring differs from the results presented in Table 3. Understanding that the rankings will be revised based on public comments, CASQA agrees with the scoring in the matrix and recommends Issue N as one of the Top 3 projects as discussed in Section 8.	Comment noted. Additionally, the ranking for Issue N has been revised in Table 3 of the Staff Report and Work Plan to reflect the very high prioritization results in Appendix 1.
	5.06	Issue N	<p><b>CASQA Recommendation:</b></p> <ul style="list-style-type: none"> <li> <i>Modify the recommendation under Issue N to be consistent with State Water Board Resolution No. 2018-0038 as follows:            "As staff resources become available, State Water Board staff recommends reviewing the California-specific epidemiological studies and duration and magnitude metrics and amending the Ocean Plan if appropriate to revise <u>or remove</u> the fecal coliform and enterococci objective, <u>including consideration of objectives or implementation provisions for the objectives based on pathogen indicators or other alternative indicators of risk.</u>"</i> </li> </ul>	See response to comment 5.04.
	5.07	Issue H	<b>Comment #3: Issue H - Shellfish Harvesting Beneficial Uses and Water Quality Objectives. Include consideration of risk in the evaluation of Shellfish Harvesting beneficial uses and related Bacteria Objectives.</b>	Comment noted.



Organization	No.	Issue	Comment	Response
			<p>CASQA supports the recommendations related to Issue H (Shellfish Harvesting Beneficial Uses and Water Quality Objectives) as they will further efforts to address longstanding issues with shellfish harvesting water quality objectives.</p>	
	5.08	Issue H	<p>However, like Issue N, it is important to continually advance our thinking and make sure these projects consider the evolving science regarding protecting the health of people consuming shellfish harvested from California's waters.</p> <p>Similar to Issue N, CASQA recommends an evaluation and consideration of risk to human health associated with shellfish consumption when looking at related beneficial uses and water quality objectives. As drafted, the recommendation in the Draft Staff Report addresses separation of the shellfish harvesting beneficial use into at least two categories and potentially revising the fecal indicator bacteria-based water quality objectives. In consideration of recent scientific progress and with the goal of better public health protection, a risk-based approach should also be evaluated and considered with respect to the shellfish harvesting beneficial uses. The project should consider that objectives based on FIB may not be the most appropriate way to ensure that beneficial uses related to shellfish harvesting are protected and that other indicators may be more effective.</p> <p><b>CASQA Recommendation:</b></p>	<p>The staff recommendation for Issue H: Shellfish Harvesting Beneficial Uses and Water Quality Objectives in Section 7 of the Staff Report was changed to recommend undertaking a project to consider amending the Ocean Plan to (1) separate the shellfish harvesting beneficial use into recreational shellfish harvesting, commercial shellfish harvesting beneficial uses, and potentially tribal shellfish harvesting beneficial uses; and (2) revise the existing shellfish harvesting total coliform objective, develop a fecal coliform objective, or both; and (3) assess alternative pathogen indicators to best account for risk to human health as related to shellfish harvesting and consumption, commercial, or sport purposes.</p> <p>Adding the words “or remove” is not necessary as revising the existing shellfish harvesting total coliform objective does not preclude consideration of its removal. It is also not necessary to restate under (2) the need to consider the appropriateness of developing a fecal coliform objective as the recommendation begins with the statement that the project will consider the stated components.</p>

Organization	No.	Issue	Comment	Response
			<ul style="list-style-type: none"> <li>Modify the recommendation under Issue H to include a consideration for risk to human health as follows:  <i>"State Water Board staff recommends undertaking a project to consider amending the Ocean Plan to (1) separate the shellfish harvesting beneficial use into recreational shellfish harvesting, commercial shellfish harvesting beneficial uses, and potentially tribal shellfish harvesting beneficial uses; (2) revise or remove the existing shellfish harvesting total coliform objective, consider the appropriateness of and potentially develop a fecal coliform objective, or both; and (3) assess pathogen and other alternative indicators as alternatives to the fecal and total coliform objectives, to best account for risk to human health as related to shellfish harvesting and consumption."</i> </li> </ul>	
<b>Central Coast Long-Term Environmental Assessment Network</b> Representative: Dane Hardin	6.01	Other	In response to a Board staff request that comments be directed at the process of selecting and prioritizing issues, we focus our comments on three areas: 1) the use of input received at scoping meetings, 2) the criteria used in the rankings and, 3) the numerical scores assigned to each criterion for each proposed issue. Regarding the input received at scoping meetings, was any other use made of that input, other than refining the draft list of issues in the Work Plan? Specifically, did input from scoping meetings inform any of the scores assigned to each criterion for each proposed issue?	Information and informal comments provided during public outreach was considered in developing and revising the Staff Report, including evaluation of relative scores assigned to each criterion and resulting issue prioritization.
	6.02	Other	Group 1 criteria, especially criterion #1, are those that help the Water Board do a better job of protecting and	See response to comment 2.03. The criteria in Section 6 of the Staff Report were established to evaluate each issue to consider

Organization	No.	Issue	Comment	Response
			<p>enhancing the quantity and quality of California waters. High summed scores for Group 1 criteria should prioritize an issue to receive the resources necessary to move it forward toward resolution. Criterion #4 is suitable for inclusion in the ranking process so that previously expended resources are not wasted. Nevertheless, the likely availability of resources (criterion #5) should not be included as a criterion for the reason stated above. Moreover, the controversy or technical difficulty associated with an issue that is highly important for the protection and enhancement of California ocean waters should not affect the attention it receives. Low scores for criterion #6 should not doom an issue to never being addressed.</p>	<p>its alignment with the State Water Board’s mission, such as protection of beneficial uses and water quality, as well as the potential to successfully prepare an amendment to the Ocean Plan addressing the issue statewide. Scores were assigned for each criterion relative to other potential projects to which State Water Board staff may devote resources.</p> <p>In addition, the technical difficulty of an issue does not preclude it from being selected as a project. This criterion was considered as one part of the comprehensive analysis used to evaluate which issues the State Water Board may direct limited staff resources to.</p>
	6.03	Other	<p>We appreciate the amount of work that went into the staff report; however, we find it difficult to provide specific comments about the ranking process because there appears to be no way to evaluate the score assigned to each criterion for each proposed issue. It would be very helpful to provide a rationale for the scores for each criterion on each issue in the staff report. For example, with the information provided, we cannot share our insights on whether providing uniform monitoring methods for contaminants of emerging concern and development of objectives to address ocean acidification, hypoxia, and climate change impacts should be assigned 1 and 5 points, respectively, for providing improved customer service by the Water Board.</p>	<p>See responses to comments 2.03 and 6.02.</p>
	6.04	Other	<p>In addition to the specific comments provided above, we also offer an illustration of how sensitive the final rankings are to the criteria included and the scores assigned to</p>	<p>See responses to comments 2.03 and 6.02. The six criteria in Section 6 of the Staff Report allow for a comprehensive, prescribed assessment of the issues in the 2019 Ocean Plan</p>

Organization	No.	Issue	Comment	Response
			<p>each criterion. The attached figure shows the rankings created using the scores previously assigned and a subset of the criteria. If only criteria 1–4 are used, issues F (ocean acidification), N (Rec1 WQOs), O (desal implementation), and U (microplastics, microfibers) receive the highest ranks, with each receiving 35 out of 35 points. Issue I (ASBS exceptions), Issue J (nutrient numerical WQOs), and Issue T (tribal beneficial uses) are tied for fifth with 33 out of 35 points. A reasonable delineation of very high priority issues under this scoring scenario could include either the four issues tied with scores of 35, or all seven of these issues.</p>	<p>Review to determine their relative priority. Criterion 5 is included to consider the resources likely available, which could augment State Water Board staffing to help complete complex or controversial projects that otherwise might not have adequate staffing. Criterion 6 is included to assess the potential for completing a project that addresses the issue. Both criterion 5 and criterion 6 are important considerations when assessing if a project, such as an amendment to the Ocean Plan addressing an issue, could successfully be completed and where the State Water Board should direct limited staff resources.</p>
	6.05	Issue G Issue N Issue U	<p>Finally, CCLEAN recognizes the importance of the staff report and workplan and their utility to modify and prioritize water quality standards in the Ocean Plan and we therefore generally agree with the following prioritizations:</p> <ul style="list-style-type: none"> <li>• ‘very high’ priority accorded the Bacteria Objectives for Water Contact Recreation (REC-1); and</li> <li>• ‘high’ priority rankings for Microplastics and Microfibers and for Toxicity Objectives (TST).</li> </ul>	<p>Comment noted.</p>
	6.06	Other	<p>In summary, although we subscribe to the relatively high rankings for these three items, we see the need to provide more information to stakeholders on the process of ranking issues. In particular, the criteria used for ranking, and the methods of assigning scores for each criterion on each possible issue should be more fully explained. This additional information should be provided in future staff</p>	<p>See responses to comments 2.03, 6.01, and 6.02.</p>

Organization	No.	Issue	Comment	Response
			reports, on which there would be an opportunity for additional comment.	
	6.07	Issue J	Regarding Issue J (Nutrients and Objectionable Aquatic Growth Water Quality Objectives), there is continually evolving research about harmful algal blooms (HABs) and related implications for ocean toxicity. The predominant findings show that macroscale conditions, including changing climate, are the key factor in HAB formation with some anthropogenic contribution related to non-point source discharges, such as storm water and dry weather run off. In Monterey Bay, where upwelling is the predominant source of nutrients to ocean water, wastewater discharges are not a stressor that has been found to result in the formation of HABs, as stated on page 24 of the staff report, which emphasizes the difficulty of developing statewide numerical objectives.	<p>The reference to wastewater in Section 7 Issue J of the Staff Report is only intended as one example of potential local stressors that increase the occurrence and compound the effects of harmful algal blooms (HABs), and has been retained in the Staff Report.</p> <p>Furthermore, U.S. EPA states that HABs need sunlight, slow-moving water, and nutrients (nitrogen and phosphorous), and that nutrient pollution from human activities makes the problem worse. U.S. EPA also states that primary sources of nitrogen and phosphorous are agriculture, stormwater, wastewater, fossil fuels, and commercial products intended for home use.<sup>xxi</sup></p>
	6.08	Other	We hope that the SWRCB continues to consider and present analyses of the operational and compliance costs of any changes to the Ocean Plan to dischargers and to SWRCB and RWQCB staff in comparison to the benefits of the changes for public health, sustainability, climate resiliency, and the environment. This additional information should be provided in a future staff report(s), on which there would be an opportunity for additional comment.	Selected issues may result in additional research or proposed amendments to the Ocean Plan, at which time available information will be reviewed, including science, research, and technology. Those issues that result in potential regulatory action, such as a proposed amendment to the Ocean Plan, will be carried out in accordance with state and federal requirements, including an analysis of economic impacts in accordance with Water Code section 13241.
<b>City of Los Angeles</b> Representative: Enrique C. Zaldivar	7.01	Other	LASAN supports the State Water Board's effort to review, update, and improve the Staff Report and Work Plan for the 2019 Ocean Plan. Participating in the review process by providing input on the draft priority issues proposed by	Comment noted.

Organization	No.	Issue	Comment	Response
			the State Water Board also help LASAN prepare to align its available resources towards critical issues that could impact its operations.	
	7.02	Issue F	<p><b>Issue F</b> (Ocean Acidification and Hypoxia (OAH) and Climate Change Impacts): The Regional Ocean Modeling (ROM) model used to understand OAH and climate change impacts used data from the time period of 1997-2000, which had higher wastewater discharge and nutrient concentrations than current discharge conditions. LASAN recommends the model input data be consistent with current discharge conditions, including flow and effluent-strength characteristics. Effects of the current discharge conditions should be evaluated against the normal variations in habitat. Currently, the State Water Board is leading a subcommittee of the Southern California Coastal Water Research Project (SCCWRP) modeling effort to evaluate whether the current dissolved oxygen and pH objectives in the Ocean Plan are sufficient to address climate change and local stressor effects. In relation, LASAN recommends that any new water quality objectives be developed in compliance with sections 13241 and 13242 of the State Water Code. In addition, the implementation of the objectives should be evaluated against future ocean conditions.</p>	<p>As stated in Issue F of the Staff Report, State Water Board staff recommend continuing to participate in research and undertaking a project to consider water quality objectives and a program of implementation associated with OAH once sufficient scientific information is necessary. Potential regulatory action, such as a proposed amendment to the Ocean Plan, will be carried out in accordance with state and federal requirements, including those found in Water Code sections 13241 and 13242. In additional, please see response to comment 4.03.</p> <p>The State Water Board’s subcommittee on OAH will consider the interpretation of existing water quality objectives in the Ocean Plan and may also explore other indicators and thresholds that may be considered if an amendment to the Ocean Plan to address OAH is prepared, including interpretations of biological indicators and metabolic index rates.</p>
	7.03	Issue M	<p><b>Issue M</b> (Mixing Zones and Dilution Implementation Provisions): LASAN suggests that the State Water Board consider accounting for ocean currents in the dilution calculations, which would result in a higher dilution factor and a more flexible transition to increasing reuse of the effluent. Assuming that ocean currents do not influence</p>	<p>Issue M in Section 7 of the Staff Report states: “because receiving water characteristics are fluid, the Ocean Plan relies on conservative assumptions to ensure that beneficial uses are protected.” Furthermore, this section of the Staff Report states that accounting for ocean currents in mixing calculations “would likely reduce the Ocean Plan’s ability to protect beneficial uses.”</p>

Organization	No.	Issue	Comment	Response
			<p>dilution calculations is to take a highly conservative approach to ensure that beneficial uses are protected. Instead, modeling ocean currents into the proposed method of dilution calculation would be a more realistic approach for accurately protecting beneficial uses.</p>	<p>As such, the medium priority ranking that this issue received is reasonable, given current mixing zone calculations are adequate in protecting beneficial uses.</p>
	7.04	Issue U	<p><b>Issue U</b> (Microplastics and Microfibers): Currently, LASAN is actively participating in continued efforts in developing the modeling method with SCCWRP. Specifying the monitoring methods for microplastics and microfibers to understand the chemical fate and transport in the environment is a very important issue. LASAN recommends that the research efforts proceed once the standardized methods to measure and quantify types of plastics is developed. Moreover, the State Water Board should address the commercial and industrial sectors' concerns that would be impacted once water quality objectives are established.</p>	<p>See response to comment 1.02.</p>
	7.05	Other	<p>In addition, LASAN supports the prioritized issues identified by the State Water Board. LASAN's comments are provided in Attachment A.</p>	<p>See responses to comments 7.06 through 7.13.</p>
	7.06	Issue A	<p><b>A. Contaminants of Emerging Concern Monitoring Procedures</b></p> <p>SCCWRP is currently involved in developing standardized methods to monitor contaminants of emerging concern (CECs) in wastewater and recycled water matrices. Currently, LASAN's interests are represented in SCCWRP's Commission's Technical Advisory Group (CTAG) meetings. LASAN supports the State Water</p>	<p>Should a project be initiated to amend the Ocean Plan to include direction for monitoring CECs, the scope of the proposed amendment would be determined at that time. Staff may consider these comments submitted as part of the 2019 Ocean Plan Review record. Additionally, comments were shared with State Water Board staff managing the statewide CEC Initiative.</p>



Organization	No.	Issue	Comment	Response
			<p>Board's approach of developing a multi-phased CECs Initiative by compiling existing regional monitoring information. LASAN recommends that the State Water Board consider a regional monitoring survey to standardize CECs monitoring methods and also the selection of CECs to be monitored in NPDES permits or in ocean water. Additionally, the State Water Board should develop a statewide CECs management strategy to carry out research related to CECs in California's aquatic ecosystems.</p>	
	7.07	Issue C	<p><b>C. Suspended Solids Effluents Limitations</b></p> <p>LASAN supports State Water Board's staff recommendations to update the suspended solids effluent limitations to be consistent with U.S. EPA secondary wastewater treatment requirements.</p>	Comment noted.
	7.08	Issue D	<p><b>D. Water Quality Objectives for Dioxin and Related Compounds</b></p> <p>LASAN supports State Water Board's recommendation that the Ocean Plan use the latest Toxicity Equivalency Factors (TEF) values used by the U.S. EPA and also the California Toxics Rule. LASAN recognizes that this approach could simplify the dioxin TEF calculation in California.</p>	Comment noted.
	7.09	Issue E	<p><b>E. Sediment Quality Objectives</b></p> <p>LASAN supports developing applicable Sediment Quality Objectives (SQOs) for the Ocean Plan such as those</p>	Comment noted.



Organization	No.	Issue	Comment	Response
			adopted in the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE) that would improve consistent implementation for Ocean dischargers.	
	7.10	Issue H	<p><b>H. Shellfish Harvesting Beneficial Uses and Water Quality Objectives</b></p> <p>LASAN supports a complete stakeholder process to be employed if the State Water Board proposes to proceed to amend the Ocean Plan to include separate beneficial uses for recreational, commercial, or tribal shellfish harvesting. In addition, the revision of the total coliform objective(s) or development of a new fecal coliform objective(s) corresponding to beneficial uses should follow the complete processes set forth in the State Water Code.</p>	Comment noted. Additionally, if the State Water Board directs staff to prioritize shellfish harvesting beneficial uses and water quality objectives in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of the project would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including state and federal public participation requirements.
	7.11	Issue J	<p><b>J. Nutrients and Objectionable Aquatic Growth Water Quality Objectives</b></p> <p>LASAN supports the State Water Board's recommendation to do more research to develop numeric water quality objectives for nutrients, objectionable aquatic growths, and other biostimulatory substances and conditions.</p>	Comment noted.
	7.12	Issue N	<p><b>N. Bacteria Objectives for Water Contact Recreation</b></p> <p>LASAN supports the State Water Board's recommendation to review the fecal coliform objective, including the duration and magnitude metrics, and continue to assess pathogen indicators and their implementation, accounting for risk and California-specific studies. LASAN</p>	Comment noted. See response to comment 5.02 and 5.04. .

Organization	No.	Issue	Comment	Response
			recommends that the fecal coliform objectives be reviewed and modified through a stakeholder process.	
	7.13	Issue S	<p><b>S. Natural Source Exclusion</b></p> <p>LASAN supports State Water Board's staff recommendation to identify constituents that are prone to exceedances of water quality objectives due to natural sources.</p>	Comment noted.
<p><b>County of San Diego</b> Representatives: Todd Snyder</p>	8.01	Issue H Issue N Issue S	<p>Over the last decade, the County has made significant investments in scientific studies that further our understanding of illness risk related to water-contact recreation in the San Diego region, and effective approaches for reducing that risk. These studies include the Surfer Health Study, The San Diego River Bacteria Wet Weather Quantitative Microbial Risk Assessment (San Diego River QMRA), and the Wet Weather Bacteria Total Maximum Daily Load Cost Benefit Analysis (Cost Benefit Analysis). While findings from these studies have already been used to inform the County's implementation actions, the scientific information has not resulted in any regulatory change. Several of the high priority issues identified within the Draft Staff Report and Work Plan should utilize the San Diego region studies and other California-specific information, to improve how pathogens are managed and regulated statewide. The County is supportive of highly prioritizing these issues and expanding the resource commitment to them to ensure the full implications and findings of the San Diego region studies are considered when the projects are conducted. The supported projects include Issue N (Bacteria Objectives for Water Contact</p>	Comment noted.

Organization	No.	Issue	Comment	Response
			Recreation), Issue H (Shellfish Harvesting Beneficial uses and Water Quality Objectives), and Issue S (Natural Source Exclusion)	
	8.02	Issue H Issue N	Based on the findings of these studies, the County has identified some recommended changes to the scope of Issue N and Issue H. The County respectfully submits the comments and suggestions below to provide our support for key projects within the Draft Staff Report and Work Plan, and to propose improvements to the recommendations and projects within the Draft Staff Report and Work Plan.	Comment noted. See responses to comments 8.03 through 8.13.
	8.03	Issue N	<p><b>Comment #1: Issue N – Bacteria Objectives for Water Contact Recreation. Modify the recommendation to include continued assessment of pathogen indicators and their implementation, accounting for risk, salinity, and California-specific studies.</b></p> <p>The County supports the prioritization of Issue N (Bacteria Objectives for Water Contact Recreation) as the project will further efforts to improve recreational water quality objectives by focusing on the risk to human health from pathogens.</p>	Comment noted.
	8.04	Issue N	The science and methods for evaluating the risk to human health is continuously evolving and has been improved through several California-specific studies, including the San Diego region studies, which unfortunately were not considered in developing the recently adopted Statewide Bacteria Provisions. It is important that relevant and evolving information and science be considered in the	See response to comment 5.04.

Organization	No.	Issue	Comment	Response
			<p>project. In particular, the scope of the proposed projects related to bacteria needs to be broad enough to consider alternatives to fecal indicator bacteria (FIB)-based water quality objectives to more effectively protect people recreating in California’s waterbodies.</p> <p>As drafted, Issue N acknowledges that “[I]n adopting the amendment to the water contact standards, the State Water Board directed staff to review the fecal coliform objective, including the duration and magnitude metrics, and continue to assess pathogen indicators and their implementation, accounting for risk and California-specific studies.” (Draft Staff Report, page 35). The County is supportive of this direction, but it appears that the <i>recommendation</i> in the Draft Staff Report is limited only to review of the epidemiology studies (brought to bear to support the inclusion of the fecal coliform water quality objective) and potentially revising the fecal coliform objective. The County is concerned that the scope of Issue N, as drafted, will not allow consideration of alternative objectives and indicators that could result from full consideration of the key findings of the San Diego region studies, as discussed in the following paragraphs.</p>	
	8.05	Issue N	<p>As part of the 2014 Triennial Review of the Water Quality Control Plan for the San Diego Basin, the stakeholders in the Region and the San Diego Regional Water Quality Control Board (San Diego Water Board) identified the “Evaluation of Contact Water Recreation (REC-1) Water Quality Objectives and Methods for Quantifying Exceedances” as a top tier issue. As stated in the adopted resolution, “[T]he goal of the project was to determine</p>	<p>If the State Water Board directs staff to develop an amendment to the Ocean Plan for bacteria objectives for water contact recreation in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of the proposed amendment would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation</p>

Organization	No.	Issue	Comment	Response
			<p>whether and to what extent data supports amending the [bacteria] objectives, implementation provisions for applicable [bacteria] TMDLs, or the TMDLs themselves.” The San Diego Water Board included the following objective for the project: “adopting new and updating existing regulations based upon the latest technical findings and scientific understanding”.</p> <p>With support from the County and regional stakeholders, several important studies were conducted, including epidemiology studies and QMRAs, to better understand illness risk associated with water contact recreation, upstream sources assessments and tracking, and a Cost Benefit Analysis. Each of these individual studies was conducted as part of, or as follow-up to, the Surfer Health Study conducted in the winters of 2013/2014 and 2014/2015. All were conducted to further our understanding of the use of FIB as indicators of impaired water quality and health risks associated with water contact recreation at various locations and under multiple conditions.</p> <p>Based in part on the Surfer Health Study, several key conclusions were developed from the 2014 Triennial Review Project in San Diego. In part, these include:</p> <ul style="list-style-type: none"> <li>• The allowable risk level associated with the FIB objectives should specifically be acknowledged and further investigation should be performed to explore how new water quality criteria or targets could be used for compliance that achieves the same level of protection.</li> </ul>	<p>requirements. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.</p>

Organization	No.	Issue	Comment	Response
			<ul style="list-style-type: none"> <li>• Investment in the development of improved indicators of human health risk, such as human specific indicators or direct pathogen measurements is needed.</li> <li>• Efforts to achieve REC-1 WQOs and the TMDL targets by focusing on human sources of FIB and pathogens should be supported.</li> <li>• Stormwater permit compliance options should be updated to allow for the use of alternative compliance pathways using human-specific fecal indicators in conjunction with existing indicators.</li> </ul>	
	8.06	Issue N	<p>Based on these conclusions, it is important to not only consider the fecal coliform objectives, but also consider the source of the FIB, assess pathogen indicators as alternatives to FIB, and evaluate other methods of assessing risk from water contact recreation as part of this triennial review project. As stated in the Resolution adopted to incorporate the updated Bacteria Provisions into the Ocean Plan, a primary purpose of conducting a triennial review is to ensure water quality standards are based on current science. Methodologies, and U.S. EPA mandates, recommendations, and guidance. To fully carry out the direction of the State Water Board, as included in the Resolution, the recommendation pertaining to Issue N should be focused on identifying risk-based approaches to protecting the water contact recreation beneficial use and include consideration of alternatives to both the enterococci and fecal coliform FIB objectives.</p>	See responses to comments 5.04 and 8.05.

Organization	No.	Issue	Comment	Response
	8.07	Issue N	<p>In addition, the County supports Issue N as a “very high” priority as designed in the matrix in Appendix 1. The scoring in Appendix 1 differs from the results presented in Table 3. Understanding that the rankings will be revised based on public comments. We agree with the scoring in the matrix and would prefer to see Issue N as one of the Top 3 projects as discussed in Section 8.</p>	See response to comment 5.05.
	8.08	Issue N	<p><b><i>Recommendation: Modify the recommendation under Issue N to be consistent with State Water Board Resolution No. 2018-0038. See suggested revisions below.</i></b></p> <p><i>“As staff resources become available, State Water Board staff recommends reviewing the California-specific epidemiological studies and duration and magnitude metrics and amending the Ocean Plan if appropriate to revise <u>or remove the fecal coliform and enterococci objective, including consideration of objectives or implementation provisions for the objectives based on pathogen indicators or other alternative indicators of risk.</u>”</i></p>	See response to comment 5.04.
	8.09	Issue H	<p><b>Comment #2: Issue H – Shellfish Harvesting Beneficial Uses and Water Quality Objectives. Include consideration of risk in the evaluation of shellfish harvesting beneficial uses and related bacteria objectives.</b></p> <p>The County supports the recommendations related to Issue H (Shellfish Harvesting Beneficial Uses and Water Quality Objectives) as they will further efforts to address</p>	Comment noted.

Organization	No.	Issue	Comment	Response
			longstanding issues with shellfish harvesting water quality objectives.	
	8.10	Issue H	However, like Issue N, the County suggests that it is important to continually advance our thinking and ensure that these projects consider the evolving science regarding protection of the health of people consuming shellfish harvested from California’s waters. The County recommends an evaluation and consideration of risk to human health associated with shellfish consumption when looking at related beneficial uses and water quality objectives. As drafted, the recommendation in the Draft Staff Report addresses separation of the shellfish harvesting beneficial use into at least two categories and potentially revising the fecal indicator bacteria-based water quality objectives. In consideration of recent scientific progress and with the goal of better public health protection, a risk-based approach should also be evaluated and considered with respect to the shellfish harvesting beneficial uses.	See response to comment 5.08.
	8.11	Issue H	The County supports the evaluation of Issue H and the high priority ranking as indicated in Appendix 1.	Comment noted.
	8.12	Issue H	<p><b><i>Recommendation: Modify the recommendation under Issue H to include a consideration for risk to human health. See suggested revisions below.</i></b></p> <p><i>“State Water Board staff recommends undertaking a project to consider amending the Ocean Plan to (1)</i></p>	See response to comment 5.08.



Organization	No.	Issue	Comment	Response
			<p><i>separate the shellfish harvesting beneficial use into recreational</i></p> <p><i>shellfish harvesting, commercial shellfish harvesting beneficial uses, and potentially tribal shellfish harvesting beneficial uses; (2) revise the existing shellfish harvesting total coliform objective, develop a fecal coliform objective, or both; and (3) assess pathogen and other alternative indicators as alternatives to the fecal and total coliform objectives, to best account for risk to human health as related to shellfish harvesting and consumption. “</i></p>	
	8.13	Issue S	<p><b>Comment #3: Issue S – Natural Source Exclusion. Include language within Chapter III of the Ocean Plan to address natural sources of constituents that enter ocean waters of California.</b></p> <p>The County supports the recommendations related to Issue S (Natural Source Exclusion) as the inclusion of such language would align the Ocean Plan with Bacteria TMDL regulations currently in plan in the San Diego region. Specifically, the change would provide consistency with the Water Quality Control Plan for the San Diego Basin. The County supports the evaluation of Issue S and the high priority ranking as indicated in Appendix 1.</p>	Comment noted.
<p><b>DeepWater Desal</b> Representative: Brent R. Constantz, Ph.D.</p>	9.01	Issue O	<p>At the outset I'd like to say that my colleagues and I, as well as the Mayor of Salinas Joe Gunter and State Senator Bill Monning, are surprised and disappointed that although Issue O – revision of the Desalination Implementation Provisions of the Ocean Plan ranked as 'HIGH' priority, it</p>	<p>See response to comment 2.07. Issue O is identified as a very high priority issue in the 2019 Ocean Plan Review. Additionally, as stated in Section 4 of the Staff Report, the State Water Board will dedicate resources to one or more very high or high priority issues. While the Work Plan in Section 8 of the Staff Report identifies the four highest priority issues, these four issues are</p>

Organization	No.	Issue	Comment	Response
			did not rank among the top 3 work projects and hence will not be dealt with during next 3 year cycle.	not predetermined to be selected as projects. Section 8 of the Staff Report has been revised to provide this clarification.
	9.02	Issue O	As you recall, we participated in the January 9, 2019 Scoping meetings for the triannual review of the Ocean Plan in San Luis Obispo, CA. At that meeting we presented our concerns regarding the disastrous implementation of the 2015 Desal Amendments to the Ocean Plan, and its potential to scuttle indefinitely efforts to move forward with the construction of desal project to serve the desperate need for additional water supply in the Monterey Bay Region and the unique advantages of providing that water from sea water drawn from deep offshore canyons near Moss Landing.	See responses to comments 2.01 and 3.01.
	9.03	Issue O	Notwithstanding the language of the Desal provisions of the Ocean Plan, experience with implementation of the Plan over the past five years shows that subsurface seawater intakes are not just the preferred method of taking seawater for desalination, but the only method which will be seriously considered by regulatory staff. Failure to consider any alternative to subsurface seawater intake eliminates the ability to consider deep water intakes which, unlike subsurface intakes, have been scientifically proven to reduce larval entrainment, and avoid negative aesthetic impacts of construction, operation maintenance and replacement of large scale well fields with and beach wellhead arrays. Likewise, failure to consider any alternative to subsurface seawater intake condemns us to suffering the negative effects of release of green house	The Ocean Plan requires subsurface intakes and does include a path forward for surface water intakes when the Regional Water Board determines that subsurface intakes are infeasible. The intake technologies are considered on a site-specific basis. Additionally, since 2015, one seawater desalination facility has received a permit. This facility does utilize surface intakes.  Greenhouse gas (GHG) emissions were considered as part of the 2015 adoption of the desalination provisions. The Final Staff Report Including the Final Substitute Environmental Documentation for the 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 (Desalination Amendment Staff Report) confirms that there are no potentially significant effects from GHG emissions resulting from the use of subsurface

Organization	No.	Issue	Comment	Response
			gases (GHG) inherent in the desalination of carbon dioxide and methane saturated subsurface seawater.	intakes (Staff Report: Appendix H Response to Public Comments on the Proposed Desalination Amendment and Staff Report with Substitute Environmental Documentation, pages H-421 – H-422).
	9.04	Issue O	Finally, failure to consider any alternative to subsurface seawater intake requires the use of intellectual property which is patented (e.g., US Patent 8,479,815 B2, 'DESALINATION SUBSURFACE FEEDWATER SUPPLY AND BRINE DISPOSAL') by GEOSCIENCE Support Services Inc., who collaborated with the State Water Resources Control Board on the development on the desal amendments to the Ocean Plan identifying subsurface intakes as the 'Preferred' method of seawater intake.	The Ocean Plan does not require a specific patented subsurface technology. The Ocean Plan defines subsurface intakes as “an intake withdrawing seawater from the area beneath the ocean floor or beneath the surface of the earth inland from the ocean” (Ocean Plan Appendix I, page 61). The Desalination Amendment Staff Report contains an analysis of subsurface intake technology. Section 8.3.2.1 of the Desalination Amendment Staff Report discusses “Types of Subsurface Intakes,” including vertical intake wells, slant wells, horizontal beach wells/radial collector systems, and infiltration galleries. None of the multiple subsurface intake technologies mandate a particular patented technology. Finally, as noted in response to comment 9.03, the Ocean Plan does allow for surface intakes under certain conditions.
	9.05	Issue O	<p>I have attached as an Appendices 1-4 the following materials for the public record:</p> <p>Appendix 1 – Letter of DeepWater Desal to the SWRCB outlining our concerns regarding the inclusion of a “subsurface intake preference” in the Desal Amendments and its effective mandate under the Water Boards current implementation. As outlined, in the letter, the risks associated with implementation of unproven subsurface intake technologies and the regulatory body’s insistence on endless subsurface geology testing in the Monterey</p>	See response to comment 2.01. Additionally, in the review of the desalination provisions of the Ocean Plan, State Water Board staff may consider the appropriateness of subsurface geology testing and other comments submitted as part of the 2019 Ocean Plan Review record.

Organization	No.	Issue	Comment	Response
			<p>Marine Sanctuary, renders the project economically infeasible.</p> <p>Appendix 2 – Letter of John Steinbeck, President of Tenera Environmental and member of the initial Expert Panel for the Desal Amendments. His report concludes that the Desal Amendments as drafted fly in the face of the recommendations of the expert panels and the language must be modified in order to produce sound regulatory and permitting policy.</p> <p>Appendix 3 – A handout presented at the Scoping Meetings by William Bourcier, a leading expert in the field of greenhouse gas emissions, noting the potential for massive GHG releases from subsurface intakes and a failure under the current regulatory scheme to consider these environment impacts under a prescriptive policy favoring only use of subsurface intakes.</p> <p>Appendix 4 - US Patent 8,479,815 B2, 'DESALINATION SUBSURFACE FEEDWATER SUPPLY AND BRINE DISPOSAL'.</p> <p>Collectively, these materials make the strong case that the prescriptive “mandate” requiring use of subsurface intakes is wrong-headed and potentially motivated by improper considerations.</p>	
	9.06	Issue O	<p>We ask that the staff reconsider the priority of Issue O based principally on the following:</p>	<p>See responses to comments 2.01, 3.01, 9.01, and 9.03.</p>

Organization	No.	Issue	Comment	Response
			<ul style="list-style-type: none"> <li>• Implementation of a requirement that requires demonstration of technical infeasibility of subsurface intakes prior to consideration of alternative technologies and their comparative impacts (considering all relevant environment impacts) is nonsensical. There is, in fact, no path to approval of a desalination project which does not employ a subsurface intake.</li> <li>• The Ocean Plan should provide for maximum flexibility in the selection and development of the best available intake technology so that permitting decisions can be made based on sound science and not be limited to decisions based on unproven assumptions.</li> <li>• The potential impacts of greenhouse gas releases from subsurface intakes must be considered under CEQA along with all other environmental impacts, including impacts on aesthetic resources.</li> </ul>	
	9.07	Issue O	<p>The need for potable water in the greater Salinas area is well known as seawater intrusion has reduced availability from traditional wells. There is documented evidence of the social justice issue involving a very large portion of the City of Salinas population living in extremely dense conditions with houses serving 3 – 6 times more people than those houses were designed and built to accommodate. There are no new sources of water and for the housing these citizens. In order to improve their standard of living, it is essential to develop a new source of potable water.</p>	<p>Chapter III.M.2.b.(2) of the Ocean Plan requires the Regional Water Board to consider identified need for desalinated water. Additionally, see responses to comments 2.02 and 3.01.</p>

Organization	No.	Issue	Comment	Response
	9.08	Issue O	Appendix B attached to our January letter contains our suggested changes to the Desal provisions of the Ocean Plan in a redline format.	See responses to comments 3.01 and 9.05.
<b>Member of the Public</b> Representative: Fred Krieger	10.01	Issue P	This comment pertains to the water quality objective for polynuclear aromatic hydrocarbons (PAHs). This objective is applied to the sum of thirteen different PAHs based on presumed risk to human health due to carcinogenicity. However, six of these thirteen PAHs are no longer considered carcinogenic by U.S. EPA and other agencies. Consequently, stormwater and wastewater discharges monitored for PAHs may potentially be considered in violation of water quality standards, although no risk is present. The State Water Board should consider updating the PAH objective. Alternatively, individual objectives for each PAH could be promulgated similar to the approach used in the California Toxics Rule (CTR) for inland waters, bays, and estuaries.	Comment noted. The water quality objective for polynuclear aromatic hydrocarbons (PAHs) are listed in Table 3 and are defined in Appendix I of the Ocean Plan. As recommended in Issue P of the 2019 Ocean Plan Review, as resources become available, water quality objectives in Table 3 of the Ocean Plan may be reviewed and revisited as needed. If resources are directed to review the water quality objectives in Table 3 of the Ocean Plan, the water quality objectives, relevant provisions in the program of implementation, and definitions for PAHs may be reviewed and available information will be considered at that time. The Staff Report has been revised to state that the water quality objective for PAHs in Table 3 and its definition in Appendix I may need to be evaluated and revised to ensure compounds identified as carcinogenic are appropriate.
	10.02	Issue P	The 1990 California Ocean Plan introduced PAHs (sum of thirteen individual PAHs) with an objective based on the 10-6 cancer risk level. The objective is 8.8 ng/L or 0.0088 ug/L. The listing of these thirteen PAHs within the definition of carcinogenic PAHs apparently resulted because they were all considered potentially carcinogenic in 1990 when the Ocean Plan was reissued. Fluoranthene is a PAH identified individually in the Ocean Plan with a separate objective and was not considered carcinogenic.  By 1992, U.S. EPA had determined that three of the PAHs listed in the Ocean Plan in 1990 were not carcinogenic and	See response to comment 10.01.

Organization	No.	Issue	Comment	Response
			<p>consequently did not include them in the 1992 National Toxics Rule:</p> <p><i>Criteria for three pollutants included in the matrix of the proposed rule are not included in the final rule for (A) acenaphthylene, (B) benzo(ghi)perylene, and (C) phenanthrene. The criteria for these pollutants were removed because they are not recognized by the Agency as carcinogenic compounds...</i></p> <p>Table 1 identifies the thirteen PAHs identified as carcinogenic in the Ocean Plan. The table also identifies which of the thirteen are considered carcinogenic by U.S. EPA and the National Toxicology Program.</p> <p><b>Table 1</b></p> <p><b>California Ocean Plan Carcinogenic PAHs</b></p> <p>An extensive monitoring program by USGS in Madison, Wisconsin, indicated that measurable PAHs may occur relatively frequently in urban stormwater (see Table 2). This frequent occurrence includes PAHs included within the Ocean Plan objective for carcinogenic PAHs. Several of the PAHs not considered carcinogenic were also present.</p>	
	10.03	Other	<p>Water quality objectives apply in the receiving water and NPDES permittees may receive credit for the dilution achieved by the discharge. The Ocean Plan identifies a <i>zone of initial dilution</i>. Effluent limitations generally apply such that the water quality objectives will not be exceeded</p>	See response to comment 10.01.

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			<p>in the receiving water upon completion of initial dilution. Dilution for submerged discharges can be calculated using the U.S. EPA Plumes mixing zone modeling application or a similar model.</p> <p>However, for shallow water submerged discharges:</p> <p><i>Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant* mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.</i></p> <p>Stormwater discharges may be submerged, but may also be discharged at the surface or above the low water line. Consequently, these discharges may not receive credit for dilution, and the discharge may be required to comply with PAH and other objectives at the point of discharge (i.e., end-of-pipe).</p> <p>Table 3 includes an expanded list of PAHs compared with the criteria (objectives) established by the California Toxics Rule and also U.S. EPA's Recommended Water Quality Criteria.</p>	
	10.04	Issue P	<p><b>Related issues:</b></p> <p><b>Other carcinogenic PAHs:</b> The Ocean Plan should include individual objectives for all PAHs considered</p>	See response to comment 10.01.



Organization	No.	Issue	Comment	Response
			carcinogenic. See the National Toxicology Program list of 15 PAHs reasonably anticipated to be human carcinogens.	
	10.05	Other	<b>Days of no discharge:</b> It is not clear from the Ocean Plan the appropriate approach for days of no-discharge for intermittent discharges. Should they be added in as zero for the 30-day average Ocean Plan objective? See page 15: <i>“For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.”</i> This statement appears to apply only to the 6-month median objectives.	This comment is outside of the scope of the 2019 Ocean Plan Review. However, the referenced provisions found in Chapter III.C.4.f. of the Ocean Plan applies to the calculation of effluent limitation for the six-month median water quality objectives in Table 3 of the Ocean Plan.
	10.06	Issue P	<b>Other objectives to be updated:</b> Several of the other Ocean Plan Table 1 objectives are out of date and no longer very helpful, particularly the grouped pollutants: phenolic compounds (non-chlorinated), chlorinated phenolics, halomethanes (summed together). The objectives for phenolic compounds were first established in the 1972 Ocean Plan.	As stated in the recommendation for Issue P in Section 7 of the Staff Report, as resources become available, the State Water Board may review the water quality objectives in Table 3, formerly Table 1, in the Ocean Plan and revise water quality objectives as necessary.
	10.07	Other	<b>Detected, not quantifiable (DNQ):</b> It would be useful to clarify in the Ocean Plan how DNQ values should be addressed, i.e., should they be added into the sum of PAHs when using the grouped PAH objective.	See response to comment 10.01.
	10.08	Other	<b>Summary</b>  The detected presence of any one of the thirteen Ocean Plan-named PAHs is likely to result in an exceedance at the point of discharge of the Ocean Plan objective for the sum of the PAHs (0.0088 ug/L). This will occur even though the PAH involved may not be recognized as a	See response to comment 10.01.

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			carcinogen by U.S. EPA or other agencies. The preferable approach would be for the Ocean Plan to include individual objectives for the potentially carcinogenic PAHs (including those not currently listed), based on EPA's recommended criteria, similar to the California Toxics Rule.	
<b>Heal the Bay</b> Representative: Emily Parker, Luke Ginger, and Annelisa Ehret Moe	11.01	Other	A review of the Ocean Plan is necessary and long overdue, as this Triennial Review should have been initiated in 2015. We support the commitment that the State Water Resources Control Board (State Board) has taken in conducting a comprehensive review of ocean standards. As we have stated previously, this review is necessary to ensure that both changing and emerging ocean conditions and issues are addressed, and to ensure that the state meets legal requirements pursuant to the Clean Water Act (CWA) and the California Water Code (CWC).	Comment noted. Additionally, see response to comment 2.09.
	11.02	Issue F Issue G Issue I Issue N Issue O	While we support all of the proposed projects listed in the 2019 Ocean Plan Review, we would like to highlight five projects as the highest priority due to significant environmental and human health implications. We recommend that the State Board prioritize the following projects: <ol style="list-style-type: none"> <li>1) Issue F: Ocean Acidification, Hypoxia, and Climate Change Impacts</li> <li>2) Issue I: Exceptions to the Ocean Plan for Discharges into Areas of Special Biological Significance (ASBS)</li> <li>3) Issue O: Desalination Implementation Provisions.</li> </ol>	Comment noted. Issues F, G, I, N, and O rank as high or very high priority in the 2019 Ocean Plan Review. See response to comment 2.07.

Organization	No.	Issue	Comment	Response
			<p>4) Issue N: Bacteria Objectives for Water Contact Recreation, and 5) Issue G: Toxicity Quality Objectives</p> <p>We have listed these projects in order of priority from 1 to 5, starting with 1 as the highest priority for Heal the Bay. These priorities are discussed in further detail below along with suggested evaluation scores and justifications for each item's priority listing.</p>	
	11.03	Issue F	<p><b>1. Issue F: Ocean Acidification, Hypoxia, and Climate Change Impacts</b></p> <p><b><i>Suggested Evaluation Score/Priority Level: Very High</i></b></p> <p>Since the 2011 Ocean Plan Triennial Review, Heal the Bay has consistently communicated to the State Board the importance of prioritizing ocean acidification and other climate-change related ocean impacts in the Ocean Plan.</p>	<p>Comment noted. The six criteria in Section 6 of the Staff Report allow for a comprehensive, prescribed assessment of the issues in the 2019 Ocean Plan Review to determine their relative priority. Upon evaluation, Issue F received 45 points out of 50 points possible and was categorized as a high priority. The assigned points to this issue are representative of this comprehensive assessment. Additionally, these scores are relative and do not reflect an issue's level of importance; rather, the prioritization is intended to assist the State Water Board in determining where to focus limited resources for the purpose of potential future amendments to the Ocean Plan. The priority ranking for Issue F has not been changed. Additionally, see responses to comments 2.03 and 2.07.</p>
	11.04	Issue F	<p>In recent years, ocean acidification has emerged as one of the major threats of climate change. Increased absorption of carbon dioxide from the atmosphere, exacerbated by local anthropogenic impacts such as nutrient runoff, results in reduced pH levels which decreases the amount of available calcium carbonate and aragonite in ocean waters. The California Current System is particularly susceptible to these changes because the natural</p>	<p>See response to comment 4.03.</p>

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			<p>upwelling in our coastal waters already contains a low carbonate saturation state. As a result, scientists have predicted that California coastal waters will experience some of the earliest and most severe changes from ocean acidification, with predictions of aragonite levels dropping rapidly by 2050 and habitats along the sea floor experiencing constant under saturation levels year round. Additionally, emerging research is showing a possible connection between more localized anthropogenic impacts, such as nutrient runoff, and increased ocean acidification and deoxygenation. At present, we do not fully understand what this means for our marine ecosystems, our unique habitats, and our valuable fisheries, and therefore continued focused research on the impacts of discharge on ocean acidification is crucial.</p> <p>The state currently recognizes ocean acidification as a climate change driven phenomenon that is “accelerating rapidly, with enormous implications for the health and productivity of California’s coastal and ocean ecosystems and the communities and industries that depend on them”. Ocean acidification, hypoxia, and other climate related impacts are emerging issues of the highest concern, but the current Ocean Plan standards are almost 40 years old. Increased attention to research and adjustments of current chemical standards for both dissolved oxygen and pH levels is critical to ensuring minimal impact on marine ecosystems.</p> <p>At present, the State Board is working with the Ocean Protection Council, the Ocean Science Trust, the Southern California Coastal Water Research Project (SCCWRP)</p>	

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			<p>and others to better understand the major questions associated with ocean acidification and hypoxia. We support the Water Board's contribution to and role in that research. At this time, SCCWRP is developing a coupled biogeochemical-physical model to determine the extent of land-based anthropogenic sources exacerbating the effects of ocean acidification, and is conducting biological research to better understand the impacts of ocean acidification and hypoxia on marine life. Additionally, the Ocean Protection Council has prioritized direct investment through partnerships in building the scientific foundation for understanding and projecting ecosystem impacts of ocean acidification in connection with other processes, and anthropogenic impacts such as nutrient runoff.</p>	
	11.05	Issue F	<p>We believe that the staff recommendation to score this project as a High priority instead of Very High due to concern with the potential for success is an oversight. We agree with the staff recommendation that this project priority is consistent with the Water Board's mission to improve water quality conditions; however, we also believe that this project has very high potential for success due to the high amount of resources that have already been invested by the state, the high likelihood for available resources in the future through partnership with state agencies and research institutions, and a high potential for completion due to already existing partnership frameworks. <i>As such, we highly recommend that staff increase the project rating for Issue F from High to Very High to ensure this project receives the highest priority for completion.</i> Ocean acidification, hypoxia, and other climate change related impacts have great potential to</p>	<p>See response to comment 4.03. The State Water Board recognizes the importance and time-sensitive nature of climate change impacts to coastal waters and agrees that there is potential for available resources through current and future partnerships. However, the additional research, modeling, and consensus of scientific interpretation that is needed to inform how the State Water Board will address ocean acidification impacts in coastal waters limited the likely potential for completion of an Ocean Plan amendment in the next three to five-year timeframe.</p>

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			negatively affect our marine ecosystems and fisheries, on which California is highly dependent, and it is imperative that the Water Board place this project at the highest priority level.	
	11.06	Issue I	<p><b>2. Issue I: Exceptions to the Ocean Plan for Discharges into Areas of Special Biological Significance (ASBS)</b></p> <p><b><i>Suggested Evaluation Score/Priority Level: Very High</i></b></p> <p>Areas of Special Biological Significance (ASBS) are designated areas that support an unusual variety of aquatic life and often host unique individual species. These areas are “basic building blocks for a sustainable, resilient coastal environment and economy” and their protection is critical to the marine habitats and life that are present there. Unlike other designated areas, such as the California Network of Marine Protected Areas, which are monitored for take, the 34 ASBS are specifically monitored and maintained for water quality. ASBS are considered a subset of the State Water Quality Protected Areas (SWQPA) and have been in place for decades; however, a new designation or update has not occurred since 1975. In the Ocean Plan, the implementation provisions for Marine Managed Areas state that SWQPAs consist of both ASBS and general protection areas that are specifically designed to protect water quality in Marine Protected Areas, but the designation of an ASBS in conjunction with newly designated marine reserves of the Marine Life Protection Act has not occurred.</p>	<p>Comment noted. See responses to comments 4.02 and 4.04. Additionally, Issue I is ranked as a very high priority in the issue description in Section 7 and in Appendix 1 of the Staff Report. The priority ranking for Issue I has been updated to very high in Table 3 in Section 8 for consistency.</p>

Organization	No.	Issue	Comment	Response
			<p>There currently exists an exception program that allows discharge of wastewater, stormwater, and nonpoint source discharges into an ASBS. Under this program, the Water Board may grant an exception permit to an applicant as long as certain requirements are met. For permitted exceptions, a NPDES permit must be issued and the discharges must meet certain special requirements (such as wet weather only discharge, stormwater only discharge, or discharge that is preventing erosion). At present, there are 13 Ocean Plan exception permits granted by the Water Board, including an ASBS general exception permit granted to a total of 27 applicants.</p> <p>The proposed project for reviewing the ASBS Discharge Prohibition General Exception permit states that a number of permittees have had difficulty meeting their monitoring requirements due to drought weather and that, as a result, the general exception permit needs to be reviewed. We strongly agree that the ASBS general exception permit needs to be reviewed, in addition to the entire ASBS program, as no new designations have been created in nearly half a century, and current permits are outdated.</p>	
	11.07	Issue I Issue V	<p>In addition to reviewing the general exception permit to add requirements that ensure water quality is maintained inside ASBS, we strongly urge the State Board to consider reviewing the entire SWQPA-ASBS program, renewing the standards for designation and the requirements for exception. This project has been proposed by the California Coastkeeper Alliance multiple times in the past; we agree that the ASBS program has become outdated and degraded over time, and is in need of revision. This</p>	See responses to comments 4.02 and 4.04.

Organization	No.	Issue	Comment	Response
			<p>program has seen widespread non-compliance issues that need to be addressed, and the SWQPA program has not been updated since the Marine Life Protection Act designation and is therefore in need of review to align with the new MLPA protected areas.</p>	
	11.08	Issue I	<p>The mission of the State Board is to preserve, enhance, and restore the quality of California’s water sources. The designation of Areas of Biological Significance aims to advance that mission, but it cannot do so with outdated designations and a failing exception permit system. Therefore, we strongly agree with the Water Board staff’s recommendation that this project should be rated as a High Priority and that staff should allocate significant resources to enhancing the caliber of this program.</p>	<p>Comment noted. See responses to comments 2.07 and 11.06.</p>
	11.09	Issue O	<p><b>3. Issue O: Desalination Implementation Provisions</b></p> <p><b><i>Suggested Evaluation Score/Priority Level: Very High</i></b></p> <p>We would like to thank staff for ranking Issue O as a Very High priority issue, as we are in agreement with this ranking.</p>	<p>Comment noted.</p>
	11.10	Issue O	<p>However, the current staff recommendation is to review the desalination requirements and propose amendments to clarify and streamline the permitting process. This categorizes Issue O as an “R” item for reasonableness. However, the amendment to the Water Quality Control Plan for the Ocean Waters of California to address effects associated with the construction and operation of seawater desalination facilities (Desalination Amendment) must be</p>	<p>The categories “Reasonableness,” “Protection,” and “Housekeeping” were used in the Draft Proposed List of Projects released by the State Water Board on January 4, 2019, to facilitate discussions at the scoping meetings held in January and February 2019. These identifiers for projects were not retained in the Staff Report.</p>



Organization	No.	Issue	Comment	Response
			<p>strengthened in order to achieve the intent of the CWA and Porter-Cologne Act, uphold the Once Through Cooling (OTC) Policy, encourage more sustainable local water use, and protect and restore California’s marine ecosystems. It is critical to strengthen the Desalination Amendment before projects are implemented to ensure that any resources spent on a desalination project are based on real need and on the best available technology. Therefore, we recommend that Issue O be prioritized as a “P” item, for protection, and that the review of Issue O focus on the following three priorities: 1) The use of ocean water desalination must be based on actual water supply needs; 2) Ocean water desalination facilities must use the best available technology; 3) There must be clear guidelines for when the best available technology is deemed infeasible. These priorities are described in detail below.</p>	<p>In regard to the suggested three priorities for the desalination implementation provisions, see response to comment 2.01.</p>
	11.11	Issue O	<p><i>The use of ocean water desalination must be based on actual water supply needs.</i></p> <p>An analysis of an existing desalination facility in Southern California, completed by the UCLA Luskin School of Innovation, concluded that the facility provides water to households that already have a reliable supply, and that the additional cost of desalination may actually make water less affordable for disadvantaged households. It is imperative that permitting for new desalination facilities only occur when ocean water desalination is absolutely necessary (i.e. when all other local water sources are</p>	<p>See responses to comments 2.01 and 9.07.</p>

Organization	No.	Issue	Comment	Response
			<p>being used to the maximum extent feasible, but water supply needs persist).</p> <p>Fortunately, in California, many other local water supply options are still available to us, including recycled wastewater, stormwater capture, and groundwater remediation. Each of these alternative options is much more environmentally friendly and cost effective than ocean water desalination. Additionally, these alternatives provide multiple benefits (at a minimum both pollution remediation and water supply), while desalination provides only one (water supply). Implementation of additional conservation efforts is another alternative that will cost very little to rate payers, if it does not reduce monthly costs.</p> <p>Due to the capital costs of building a desalination facility, the potential cost increase to rate payers, the known environmental impacts, and the single benefit that this approach accomplishes, desalination must be considered the last water supply option. We recommend that a thorough analysis of actual water supply needs be made prior to consideration of permitting for a new ocean water desalination facility. This process must be done in coordination with key stakeholders including, but not limited to, local nongovernmental organizations and community based organizations to allow for peer review of the identified need for additional water supply.</p>	
	11.12	Issue O	<i>Ocean water desalination facilities must use the best available technology.</i>	See responses to comments 2.01 and 3.01. Additionally, in the review of the desalination provisions of the Ocean Plan, State Water Board staff may consider the appropriateness of revising

Organization	No.	Issue	Comment	Response
			<p>Once actual need is determined, a desalination facility must be built using the best available standard for each factor. Currently, a subsurface infiltration gallery is the best available technology for intake operations. If implemented correctly, it can minimize marine life mortality, and is designed to replace natural substrate with an engineered substrate that allows for high design capacity. Spray-brine diffusers are the best available technology for waste discharge operations. Additionally, fine mesh screens are not the best available technology. The consideration of screen efficacy in the Desalination Amendment needs to be consistent with the adopted approach in the OTC Policy to eliminate the use of open ocean intake. Additionally, the best available technology will change with time as new technology is developed. The definition of best available technology must reflect these updates.</p>	<p>the best available technology threshold. Staff may also consider other comments submitted as part of the 2019 Ocean Plan Review record.</p>
	11.13	Issue O	<p><i>There must be clear guidelines for when the best available technology is deemed infeasible.</i></p> <p>The Desalination Amendment does not contain a definition of “not feasible,” but rather a laundry list of criteria to be evaluated. These factors are vague and open-ended, allowing project proponents to excuse themselves from the best available technology standard. The State Board should properly define “not feasible” under the best available technology analysis, and revise the best available site analysis to accommodate the best available technology and minimize impacts to Marine Protected Areas and other important ecological areas. The best available design must not be based on design capacity.</p>	<p>See response to comment 11.12.</p>

Organization	No.	Issue	Comment	Response
			Additionally, the State Board should prohibit after-the-fact restoration as in-lieu mitigation for the best available technology.	
	11.14	Issue N	<p><b>4. Issue N: Bacteria Objectives for Water Contact Recreation</b></p> <p>Heal the Bay appreciates that Issue N is a high-priority issue for review in the Ocean Plan. Stringent and robust bacteria objectives help keep the public safe and the ocean free of harmful bacteria pollution.</p>	Comment noted.
	11.15	Issue N	<p>We agree that the bacteria objectives in the Ocean Plan should be further assessed, and we recommend the following for doing so:</p> <p><i>Objectives should consist of a geometric mean, statistical threshold value, and single sample maximum</i></p> <p>To protect people from harmful levels of pathogens, it is imperative to use metrics that incorporate short term and long term measurements of fecal indicator bacteria (FIB). There are three different metrics used for recreational water quality: single sample maximum (SSM), geometric mean (GM), and statistical threshold value (STV). Each of these metrics has advantages and disadvantages as outlined below:</p> <p>a) <b>SSM:</b> Regulatory action occurs based on the most recent water quality measurement. This metric is useful because it captures the current water quality conditions at a monitoring site. One drawback is</p>	If the State Water Board directs staff to review the bacteria water quality objectives for water contact recreation in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation requirements. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.

Organization	No.	Issue	Comment	Response
			<p>that FIB concentrations can be highly variable throughout the day, so one sample may not reflect the ambient water quality at a monitoring site.</p> <p>b) <b>STV:</b> For STV metrics, there is regulatory action if 10% of samples in the last calendar month exceeded the objective. STV metrics are highly protective of public health because they take into account the most recent <i>poor</i> water quality samples (just as SSM objectives do). However, the drawback is that STV standards can be avoided by increasing the sample rate. Collecting more samples in a month can mask sample exceedances by keeping the proportion of exceeded samples below 10%.</p> <p>c) <b>GM:</b> This metric averages the most recent samples collected at a site while controlling for high variability in the sample readings. Geometric means are effective when assessing the ambient water quality and effective at reducing the uncertainty that comes with high temporal variability in FIB concentrations. However, geometric means do not adequately take into account the most recent water quality measurements. Also, geometric means can dampen the large spikes in FIB that occur after rainfall events or sewage spills.</p> <p>When used in tandem, these three metrics provide more accurate information on water quality than any single metric can. We recommend that GM, SSM, and STV objectives are adopted for both <i>Enterococcus</i> and <i>E. coli</i>. Using all three metrics can be accomplished with minimal effort as it does not require extra field work or additional</p>	

Organization	No.	Issue	Comment	Response
			<p>calculations. All that is required is changing the STV standard to state that regulatory action is triggered when 10% of the samples in a calendar month are exceeded OR the most recent sample exceeds the SSM objective (resamples occurring on the same day as an exceedance should not be taken into account). This will ensure that exceedances are identified and addressed.</p>	
	11.16	Issue N	<p><i>A 6-week geometric mean with mandated weekly sampling is the best geometric mean option</i></p> <p>Heal the Bay agrees that there should be continuity between the bacteria objectives for <i>Enterococcus</i> and <i>E. coli</i>. The 30-day GM of the last five samples is effective because it mandates a certain rate of sampling. A 6-week GM is more protective as it provides a more long-term metric on FIB concentrations than the 30-day GM. The downside to the 6-week GM, as written, is that there is no sample number requirement. The current 6-week GM standard allows a permittee to conduct minimal sampling over a longer period and still be in compliance. We recommend adopting a rolling 6-week GM that mandates weekly sampling. This would ensure that permittees do not pick and choose when sampling takes place and ensures there is an adequate number of samples for an accurate GM.</p>	See response to comment 11.15.
	11.17	Issue N	<p><i>California epidemiological study should not be overlooked</i></p> <p>We appreciate that the fecal coliform objective was retained based on the findings of California-specific epidemiological studies. We also appreciate that staff will</p>	See responses to comments 5.04 and 11.15.

Organization	No.	Issue	Comment	Response
			<p>review these studies for further insight. We recommend that staff also review the epidemiological study by Haile et al 1999. This study was conducted in California and provides empirical evidence that the total coliform to fecal coliform ratio is correlated with higher rates of illness. Using this ratio is not supported by the U.S. EPA Recreational Water Quality Criteria (2012) because total coliform and fecal coliform are thought to be outdated indicators. However, the three studies used to discount these two indicators actually found significant correlations between total and fecal coliforms and rates of illness. These three studies conclude that <i>Enterococcus</i> and <i>E. coli</i> are more <i>strongly</i> correlated with illness. This may have led to the incorrect conclusion that fecal coliform and total coliform are not accurate indicators of pathogens and illness risk.</p> <p>In addition, the ratio of total to fecal coliforms is, on the whole, different from the ratio's individual constituents. The ratio indicates an interaction between total coliform and fecal coliform that is informative when it comes to health risk. The results of Haile's 1999 study should not be ignored, but should be considered equivalent to other California epidemiological studies. We recommend adding an objective for the total coliform to fecal coliform ratio to the Ocean Plan.</p>	
	11.18	Issue N	<p><i>The state should invest in pathogen research</i></p> <p>U.S. EPA Recreational Water Quality Criteria (2012) identifies knowledge and data gaps in fecal indicator bacteria. It also encourages states to conduct research</p>	See responses to comments 5.04 and 11.15.

Organization	No.	Issue	Comment	Response
			<p>into new pathogen indicators. We recommend conducting this research in accordance with the seven requirements set forth by Boehm et al 2009:</p> <ol style="list-style-type: none"> <li>1) Health based, anchored in results from epidemiology studies.</li> <li>2) Compatible with all Clean Water Act needs including beach advisories and closures, TMDL development, and NPDES permitting.</li> <li>3) Scientifically defensible for application in a wide variety of geographical locations and water types.</li> <li>4) Protective of individuals exposed to recreational waters impacted by all sorts of pathogen sources including animal feces, stormwater, and sewage.</li> <li>5) Protective of children as a more exposed and susceptible life-stage.</li> <li>6) Based on indicators that can be quantified reliably, robustly, and reproducibly.</li> <li>7) Equally protective of all recreation users including those using freshwater and saltwater, regardless of geographic locale.</li> </ol> <p>Currently, there is not enough research to meet all seven requirements above. There are enormous data and knowledge gaps that must be filled before new indicators and objectives can be formed. We recommend focusing on novel indicator research that includes California-specific epidemiological studies.</p>	
	11.19	Issue G	<b>5. Issue G: Toxicity Water Quality Objectives</b>	See response to comment 2.03. The six criteria in Section 6 of the Staff Report allow for a comprehensive, prescribed assessment of the issues in the 2019 Ocean Plan Review to



Organization	No.	Issue	Comment	Response
			<p><b><i>Suggested Evaluation Score/Priority Level: Very High</i></b></p> <p>A statewide toxicity plan to address both chronic and acute toxicity is desperately needed, and is long overdue. We are encouraged that the State Board is moving forward with the Proposed Establishment of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California; and Toxicity Provisions. We agree with the goals of the State Board to (1) adopt consistent statewide numeric objectives, (2) adopt a program of implementation, and (3) require consistent monitoring and analysis methodology. We support the prioritization of Issue G to address toxicity in the Ocean Plan during this Triennial Review, in order to employ the momentum from the update to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.</p>	<p>determine their relative priority. Upon evaluation, Issue G received 42 points out of 50 points possible and was categorized as a high priority. The assigned points to this issue are representative of this comprehensive assessment. Additionally, these scores are relative and do not reflect an issue's level of importance; rather, the prioritization is intended to assist the State Water Board's in determining where to focus limited resources for the purpose of potential future amendments to the Ocean Plan. The priority ranking for Issue G has not been changed.</p>
	11.20	Issue G	<p><i>We support numeric toxicity effluent limits and the Test for Significant Toxicity analytical approach.</i></p> <p>The Test for Significant Toxicity (TST) statistical approach provides an unambiguous "pass" or "fail" measurement of a test concentration's toxicity, and its low false positive and false negative rates provide more statistical power to correctly identify a test concentration as toxic or non-toxic. Although the TST analytical approach is not promulgated, there is United State Environmental Protection Agency (USEPA) guidance on the TST analytical approach, which has withstood vigorous peer review and legal challenges. We strongly support the role of the reversed acute and chronic null hypotheses to provide dischargers with an</p>	<p>Comment noted.</p>

Organization	No.	Issue	Comment	Response
			<p>incentive to improve the precision of test results by improving laboratory procedures and/or by increasing the number of replicates used in a given toxicity test. Considering the pace at which policy changes can be made at a federal level, we applaud the State Board for moving forward with statewide implementation of an analytical method that is scientifically robust and protective of California aquatic ecosystems within the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. We strongly support the staff recommendation to revise toxicity water quality objectives, program of implementation, and monitoring procedures or requirements to replace the toxicity unit statistical approach with the test of significant toxicity.</p>	
	11.21	Issue G	<p><i>We do have some lingering concerns about the Proposed Establishment of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California; and Toxicity Provisions that must be taken into consideration if Issue G is prioritized.</i></p> <p>As written, the current Proposed Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California; and Toxicity Provisions are not sufficient to meet the goal of the State Board to implement consistent statewide objectives in order to protect ecological health. Numeric toxicity effluent limitations and monitoring requirements should apply to all dischargers regardless of any reasonable potential analysis findings. The Draft Provisions should also include more stringent enforcement mechanisms, and require immediate compliance with the numeric toxicity limits and monitoring</p>	<p>If the State Water Board directs staff to revise the toxicity provisions in the Ocean Plan in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation requirements. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.</p> <p>Furthermore, public input and concerns regarding the proposed toxicity provisions for inland surface waters, enclosed bays, and estuaries are being addressed through the public process, response to comments process, and State Water Board consideration process.</p>

Organization	No.	Issue	Comment	Response
			<p>requirements. These are issues that still must be addressed in the Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, but they must also be taken into consideration during an update to the Ocean Plan, as well.</p>	
<p><b>IDEXX</b> Representative: Jody Frymire</p>	12.01	Issue N	<p>Recommend changing the contact recreational bacteria criteria for marine water to enterococci and remove the inclusion of fecal coliforms.</p> <p><u>Rational:</u> Enterococci are more protective indicators of fecal contamination versus fecal coliforms.</p> <p>Fecal coliform bacteria are commonly identified as being thermotolerant bacteria (able to grow at 44.5°C). Thermotolerant bacteria consists of <i>E. coli</i>, Klebsiella, Enterobacter, and Citrobacter species. When testing for fecal coliforms, the population of the bacteria present can affect the fecal coliform results, for example: Klebsiella, Enterobacter, &amp; Citrobacter species are false-positive indicators of fecal contamination as they are from nonfecal origin. It has been found, up to 15% of Klebsiella (nonfecal origin) are thermotolerant and up to 10% of <i>E. coli</i> are not thermotolerant, thus potentially causing an error rate of 25% when testing for fecal coliforms.</p> <p>Within marine waters, studies show enterococci, as compared to other fecal contamination indicators, have a higher survival rate and show a direct association with risk of swimmer's illness. The European Union (EU) uses enterococci as an indicator of fecal contamination for recreational waters, as well as in drinking water.</p>	See responses to comments 5.04 and 11.15.

Organization	No.	Issue	Comment	Response
			<p>Additionally, enterococci are recommended by the U.S. EPA in the 2012 Recreational Water Quality Criteria and included by the World Health Organization (WHO) as recommended bacteria indicator for fecal contamination for recreational water.</p> <p>The State's Ocean Plan explains, on page 35, that due to several California based epidemiological studies, "fecal coliforms may be a better indicator of gastrointestinal illness than enterococci," even though this is contrary to conclusions made from agencies like the EPA, WHO, and EU. From the California epidemiological studies that were presented, it would be important to verify if the fecal coliform data was confirmed as being from bacteria of fecal origin, since there are bacteria from nonfecal origin that can lead to fecal coliform false-positives. Additionally, in the Arnold et al. (2017) study that was used by the State, it was noted that some of the illnesses self-reported could have been due to noninfectious causes associated with swimming.</p>	
<b>Metropolitan District of Southern California</b> Representative: Brad Coffey	13.01	Issue O	The purpose of this letter is to express the Metropolitan Water District of Southern California's (Metropolitan) comments on the State Water Resources Control Board's (SWRCB) Draft Staff Report and Work Plan for the 2019 Review of the Water Quality Control Plan for Ocean Waters of California (2019 Ocean Plan Review) related to seawater desalination. Metropolitan urges the SWRCB to maintain the current seawater desalination regulations within the 2015 Ocean Plan by not opening it up to	See response to comment 2.01.

Organization	No.	Issue	Comment	Response
			amendments as proposed within Issue O: Desalination Implementation.	
	13.02	Issue O	<p>The severity of California’s recent drought, coupled with the extended dry period on the Colorado River and the projected long-term impacts of climate change underscores the need for continued diversification of southern California’s water resource portfolio. Metropolitan’s long-term Integrated Water Resources Plan (IRP) achieves diversification with an “all of the above” approach. This includes maintaining Colorado River Aqueduct supplies and restoring the reliability of State Water Project supplies, while developing local climate-resilient resources, including regional recycled water, water use efficiency measures, and seawater desalination to accommodate projected future growth.</p>	See responses to comments 2.02 and 9.07.
	13.03	Issue O	<p>The SWRCB adopted the current seawater desalination element in 2015 and since then there have been no permits issued under the new regulations. Several projects are currently moving through the permitting process including two in Metropolitan’s service area. Amending the seater desalination element now would create uncertainty in the permitting process and could cause costly project delays.</p> <p>An alternative approach would be to implement a memorandum of understanding (MOU) with other State permitting agencies to coordinate and improve the permitting process. The SWRCB determined an MOU with other agencies was needed when it adopted the seawater desalination element in 2015. Metropolitan recommends</p>	See responses to comments 2.01, 2.04, and 2.06.

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			that the SWRCB consider this approach over a new amendment process.	
<b>Ocean Protection Council</b> Representative: Mark Gold	14.01	Issue F Issue G Issue H Issue I Issue J Issue N Issue O Issue U	First, we were very pleased to see several the OPC's priorities ranked as high or very high priorities for Ocean Plan Review. In particular, we look forward to working closely with you on ocean acidification, hypoxia and climate change impacts (ranked high by SWRCB staff), ASBS issues (very high), nutrients and aquatic growth WQOs (high), and microplastics and microfibers (high). In addition, we would be glad to assist where appropriate on the SWRCB's very high priorities – bacterial WQOs and the desalination policy, as well as the high priorities of toxicity water quality objectives and shellfish harvesting beneficial uses and WQOs.	Comment noted.
	14.02	Issue A	And finally, even though they were listed as medium priorities, the OPC is very concerned about Constituents of Emerging Concern and contaminated sediments (the need for stronger, consistent SQOs) in ocean waters.	Comment noted. See responses to comments 14.03 and 14.04.
	14.03	Issue A	<b>Issue A: Constituents of Emerging Concern Monitoring Procedures</b>  OPC staff supports the inclusion of Constituents of Emerging Concern Monitoring Procedures in the 2019 Ocean Plan Review. In July 2018, OPC approved funding for the Science Advisory Panel referenced in Issue A, and looks forward to continued collaborations with the Water Board as the Panel develops their recommendations. OPC staff agree that Issue A is not ready for immediate implementation, but encourages Water Board staff to	The six criteria in Section 6 of the Staff Report allow for a comprehensive, prescribed assessment of the issues in the 2019 Ocean Plan Review to determine their relative priority. Upon evaluation, Issue A received 29 points out of 50 points possible and was categorized as a medium priority. The Staff Report and Work Plan have been revised to increase Issue A's assigned points for criteria 1 and 3 by two points each. The revised point total for Issue A is 33 points out of 50, which brings the issue to the top of the medium priority group. Additionally, please see responses to comments 2.03 and 2.07.

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			<p>increase the points assigned to Issue A under criteria 1 and 3. A statewide, standardized monitoring structure or set of procedures to detect, quantify and address CECs would provide the consistency needed to better protect beneficial uses statewide, rather than only on a region-by-region basis.</p>	
	14.04	Issue E	<p><b>Issue E: Sediment Quality Objectives</b></p> <p>OPC staff supports the development of sediment quality objectives for the Ocean Plan to protect benthic communities, human health, and marine wildlife. Sediment of all types and size (e.g., sand, fine-grained material) is an essential component of wetland and beach restoration projects along the state's 1,100-mile coastline. Because of sea-level rise and other climate change factors, it is foreseeable more projects of this nature will be constructed to replace lost coastal habitat and provide protection from increasingly energetic storms. However, local governments and state agencies are already experiencing significant challenges in sourcing sediment that is free of contaminants for their projects. Established sediment quality objectives consistent with the approach from the recently adopted SQOs in the Enclosed Bays and Estuaries Plan could help alleviate this situation by making available additional sediment supplies that can pass regulatory scrutiny. In developing these objectives, we encourage to Water Board staff to work with and solicit input from the state-federal Coastal Sediment Management Working Group (CSMW). The CSMW is co-chaired by the OPC and the South Pacific Division of the U.S. Army Corps of Engineers and its membership</p>	<p>Comment noted. If the State Water Board directs staff to develop sediment quality objectives in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including coordination with other state and federal agencies. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.</p> <p>Additionally, development of sediment quality objectives (SQOs) for the Water Quality Control Plan for Enclosed Bays and Estuaries required extensive data from bays throughout the state. Fortunately, through a variety of regional programs, enough data were available to develop and validate each of the three lines of evidence that support the SQOs for bays and estuaries. Monitoring coastal sediments is not as common or as extensive, so additional data may be needed.</p>



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			consists of, but is not limited to, staff from the Coastal Commission, State Lands Commission, Department of Fish and Wildlife, U.S. Environmental Protection Agency, National Park Service, and the U.S. Geological Survey.	
	14.05	Issue F	<p><b>Issue F: Ocean Acidification, Hypoxia, and Climate Change Impacts</b></p> <p>OPC staff strongly supports the State Water Resources Control Board's inclusion of ocean acidification, hypoxia, and other climate change impacts into the 2019 Ocean Plan Review. An amendment to include ocean acidification is essential to meeting the State Water Board's Resolution No. 2017-0012, requiring a proactive approach to climate change in state actions. It is critical that ocean acidification, hypoxia, and climate change impacts are included in the Ocean Plan in order to minimize harmful impacts to our ocean resources and to ensure the State Water Resources Control Board's ability to act as swiftly as possible in addressing these issues as new scientific information becomes readily available.</p>	Comment noted.
	14.06	Issue F	The three questions posed in the draft Ocean Plan review (What is the relationship between ocean acidification and hypoxia and impacts to marine life? Are land-based, anthropogenic sources contributing to impacts? What parameters and threshold levels are appropriate water quality objectives to address climate change and local stressor effects on marine ecosystems?) are essential considerations for creating water quality standards (either or both effluent or receiving water standards). The good news is that a California Current modeling effort, as well as	<p>Comment noted. Additionally, see responses to comments 4.03 and 11.05.</p> <p>The State Water Board may undertake a project to consider water quality objectives and a program of implementation associated with OAH once sufficient scientific information is available. If a project resulting in a regulatory action is undertaken, such as a proposed amendment to the Ocean Plan, it will be carried out in accordance with state and federal</p>



Organization	No.	Issue	Comment	Response
			<p>a downscaling approach for the Southern California Bight has been underway for about four years. OPC has funded two projects with the purpose of answering these questions, including the coupled biogeochemical-physical model developed by the Southern California Coastal Water Research Project (SCCWRP) and the University of California, Los Angeles (UCLA). Preliminary results from this modeling effort has demonstrated that anthropogenic nutrient inputs likely cause or exacerbate regional impacts on Southern California Bight DO and acidity. As more modeling runs are completed in the next year using different discharger scenarios, we will have a much greater understanding of the temporal and spatial impacts of POTW and runoff discharges on OAH.</p> <p>Another OPC funded project with SCCWRP is working to define the scope of work to develop the foundation science for chemical assessment endpoints for ocean acidification. Such endpoints will provide a consistent framework for communicating to managers, policy makers, and the public on ocean acidification status, trends and drivers. This work is considered to be the precursor to water quality policy development, an explicit recommendation of the West Coast Ocean Acidification Science Panel (2016), and has a current project completion date of December 31<sup>st</sup>, 2019. With the final results from these two ongoing projects just around the corner, we are significantly closer to having the tools needed to develop statewide water quality objectives (either or both numeric effluent limits or receiving water quality objectives) and implementation provisions in order to stem or reduce the effects of ocean acidification, hypoxia, and other climate change impacts to</p>	<p>requirements, including public participation. This process in its entirety may take longer than three to five years to conclude.</p>

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			<p>California’s marine resources. OPC staff are committed to continuing to fund the science necessary to develop a nutrient water quality objective that addresses nutrients as drivers of ocean acidification, hypoxia, and harmful algal blooms (see our comments on Issue J below). Also, we will continue to work closely with SWRCB staff on these critical issues with the goal of establishing WQOs within the next 3-5 years.</p>	
	14.07	Issue G	<p><b>Issue G: Toxicity Water Quality Objectives</b></p> <p>OPC staff supports the SWRCB recommendation to revise the toxicity WQOs, program of implementation and monitoring procedures or requirements. This effort would make the toxicity section of the Ocean Plan consistent with the approach that the SWRCB will soon adopt for inland waters and enclosed bays and estuaries. The test of significant toxicity approach has been discussed at the SWRCB for over 15 years and California is long overdue in moving forward to adopt this approach for all its receiving waters.</p>	Comment noted.
	14.08	Issue H	<p><b>Issue H – Shellfish Harvesting Beneficial Uses and Water Quality Objectives</b></p> <p>The OPC agrees that the shellfish harvesting beneficial uses and WQOs are both woefully out of date. A shift from a total coliform standard to a fecal coliform WQO approach makes sense because fecal coliform is a much better indicator of health risk and warm-blooded animal or human sewage contamination than total coliforms. The need for standards that better reflect health risks and different</p>	See responses to comments 4.10 and 5.08.

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			beneficial uses (recreation, commercial and Tribal) is important. Also, CDFW, CDFG and the OPC have been discussing the future of California aquaculture a great deal, and clarification and updating of shellfish harvesting beneficial uses and WQOs could help further these discussions greatly.	
	14.09	Issue I	<p><b>Issue I: Exceptions to the Ocean Plan for Discharges into ASBS</b></p> <p>OPC staff was pleased to see that the issue of exceptions to the Ocean Plan for discharges into ASBS remains a very high priority. We agree that ASBS are important management tools that can safeguard the water quality of biologically significant coastal areas. Therefore, we were deeply concerned to see that many dischargers of storm water and other non-point sources were unable to meet the conditions imposed upon them under the ASBS General Exception. While recognizing that some of this non-compliance was a result of the drought conditions preventing the agreed upon monitoring from occurring, we encourage the State Water Resources Control Board to address this issue in a timely fashion. We support the recommendation to conduct a review of the ASBS General Exception to determine if revisions are needed. We hope that staff time can be prioritized to accomplish this review within the next three years.</p>	Comment noted. See responses to comments 2.03 and 4.04.
	14.10	Other	Also, we encourage the SWRCB to work with the OPC to undertake a study to determine the overlap of boundaries between ASBS and the Marine Protected Area (MPAs) network, the sources of discharges to MPAs, water quality	Comment noted. Efforts to map and research water quality in ASBS and marine protected areas may be visited in the future

Organization	No.	Issue	Comment	Response
			in MPAs, and the level of water quality protection in MPAs. With the SWRCB investing millions of dollars every year on MPAs through the once through cooling policy mitigation program, it makes sense for California to better understand whether there are water quality problems in any of the state's MPAs. Ideally, MPAs should receive similar water quality protection than ASBS, because the state has determined that they are biologically significant.	as resources are available, but are outside of the scope of the 2019 Ocean Plan Review.
	14.11	Issue J	<p><b>Issue J: Nutrients and Objectionable Aquatic Growth Water Quality Objectives</b></p> <p>OPC staff supports the Water Board developing a quantitative nutrient water quality objective.</p>	Comment noted.
	14.12	Issue F Issue J	As mentioned above, recent research has determined that nutrient loading into the marine environment is increasing the impacts of Ocean Acidification and Hypoxia on state marine waters. Although the impacts of nutrients on OAH are not the focus of Issue J, it provides an additional reason to revisit the nutrient water quality objective. The SWRCB may even want to link the OAH and harmful algal bloom (HAB) issues as part of their Ocean Plan review because nutrients are potential causal factors leading OAH and HABs.	Issue F in Section 7 of the Staff Report lists HABs as an impact of climate change and recognizes the connection between HABs and OAH. However, HABs are induced by a variety of environmental factors aside from climate change impacts and are more directly linked with Issue J, which considers the water quality objectives for objectionable aquatic growths. Therefore, HABs is considered separately from OAH for the purposes of the 2019 Ocean Plan Review, although HABs, nutrients, and OAH may be addressed at the same time if appropriate. Additionally, see response to comment 4.03.
	14.13	Issue J	Additionally, the frequency, duration and detrimental impacts of harmful algal blooms are likely to increase with the changing ocean conditions caused by climate change. OPC approved funding for two projects in October 2018 that examine different aspects of how <i>pseudo-nitzschia</i> responds to nutrient loading and changing ocean	Comment noted. See response to comment 14.12.

Organization	No.	Issue	Comment	Response
			<p>conditions. The results from these projects will be available at the end of 2022, and may be informative for the Water Board staff. OPC staff looks forward to continued collaboration on research that would enable the Water Board to develop a quantitative nutrient water quality objective that accounts for nutrients as the driver of harmful algal blooms, ocean acidification, and hypoxia.</p>	
	14.14	Issue N	<p><b>Issue N – Bacteria Objectives for Water Contact Recreation</b></p> <p>OPC staff supports updating the fecal coliform standard to better reflect the results of California water contact epidemiology studies.</p>	Comment noted.
	14.15	Issue N	<p>Also, the regulatory and monitoring approach for fecal coliform densities in recreational waters should be similar to the approach recently adopted for enterococcus in order to better clarify the state’s regulatory approach to protect the public health of the over 100 million people that enjoy California’s beaches annually.</p>	See response to comment 5.04.
	14.16	Issue O	<p><b>Issue O – Desalination Implementation Provisions</b></p> <p>OPC staff agrees with SWRCB staff that clarification of the desalination implementation provisions is a high priority.</p>	Comment noted.
	14.17	Issue O	<p>Although a one size fits all approach to desalination implementation is not preferable, there are numerous parameters such as impacts to marine life from intakes and siting, and brine disposal that need to be clarified and perhaps even strengthened. By a point of comparison, the</p>	See response to comment 2.01.

Organization	No.	Issue	Comment	Response
			<p>SWRCB's policy for reducing the impacts of Once Through Cooling power plants, with larger, but similar impacts to marine life through seawater intakes, was much clearer. Also, the results and implementation of the OTC policy, including a robust mitigation program, has served as a model for the rest of the nation. The desalination implementation provisions should be similarly effective.</p>	
	14.18	Issue U	<p><b>Issue U: Microplastics and Microfibers</b></p> <p>OPC staff supports the inclusion of Microplastics and Microfibers in the Ocean Plan Review, and supports the assessment included in the Draft Staff Report and Work Plan. OPC is required by SB 1263 to develop and implement a microplastics strategy (strategy), and we will coordinate with the Water Board throughout the strategy development and implementation process. We hope this effort will result in a standardized monitoring approach and, potentially, monitoring and regulatory requirements as needed to reduce existing and potential impacts from microplastics and microfibers.</p>	<p>Comment noted. If the State Water Board directs staff to amend the Ocean Plan to address microplastics and microfibers in accordance with the recommendation in the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation requirements. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.</p>
<p><b>Orange County Sanitation District</b> Representative: Ron Coss</p>	15.01	Other	<p>Overall, OCSD supports the proposed priority rankings and ask for continued collaboration on the stakeholder process for many of the high priority projects before determining updates for beneficial uses, water quality objectives, and implementation provisions.</p> <p>We appreciate the State Board's due diligence in periodically reviewing the Ocean Plan as required by the Clean Water Act section 303(c)(1)(3) and Water Code section 13170.2, subdivision (b). This review period is a</p>	<p>Comment noted. See response to comment 15.02.</p>

Organization	No.	Issue	Comment	Response
			<p>critical mechanism to update regulatory priorities and the science/methods of existing programs. We applaud the State Board's stakeholder process to help identify the top priority projects for the state and to help guide future planning efforts to ensure transparency of the Ocean Plan review process.</p> <p>OCSD commented previously during the initial stakeholder process, providing a list of high priority projects for the state to consider related specifically to ocean discharger wastewater utilities interests. It is a difficult task for the State Board to prioritize projects among a multitude of stakeholder interests and priorities. We commend the State Board on gathering a comprehensive list of projects and prioritizing on a ranked scale all of the suggested priorities. Our agency supports the proposed draft priority projects published and now open for review.</p> <p>The details and descriptions of each project, it's ranking, and the State Boards focus in the project were of important value. OCSD is pleased to find that the project priorities for our agency were ranked at levels we felt appropriate in the draft report.</p>	
	15.02	Issue F Issue J Issue S Issue U	<p>OCSD would like to stress the importance of the stakeholder process in each of the proposed projects. As the State Board has time and resources to address each project, we encourage continued collaboration as it is still very much needed to develop appropriate tool sets and understanding of the state of the science. Specifically, OCSD looks forward to working with staff through the</p>	<p>Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping and public participation requirements.</p>

Organization	No.	Issue	Comment	Response
			<p>stakeholder process on the following projects before any updates are made to the Ocean Plan:</p> <ol style="list-style-type: none"> <li>1) Issue F: Ocean Acidification, Hypoxia, and Climate Change Impacts</li> <li>2) Issue J: Nutrients and objectionable Aquatic Growth Water Quality Objectives</li> <li>3) Issue S: Natural Source Exclusion</li> <li>4) Issue U: Microplastics and Microfibers</li> </ol>	
	15.03	Other	<p><b>Conclusion:</b></p> <ul style="list-style-type: none"> <li>• OCSD supports the prioritization list of projects that the State has identified and proposed.</li> <li>• We agree that the ranking of projects is a good <b>starting point</b> for discussions with other governmental organizations, tribes, non-governmental organizations, environmental justice groups, industry representations, and the general public.</li> <li>• We encourage the stakeholder process on all identified projects to update/develop regulatory tools, state of science, and development of objectives before adopting formally into the Ocean Plan.</li> <li>• We support administrative non-substantive changes that include conforming changes to reformat the Ocean Plan to be consistent with other Water Quality Control Plans and Basin Plans, change identification of defined terms to improve readability, and revise maps to improve clarity.</li> </ul>	Comment noted. See response to comment 15.02.



Organization	No.	Issue	Comment	Response
			<p>OCSD is an active participant collaborating with the State Board through the stakeholder process on a wide variety of projects and appreciate the collaborative relationship we have developed. We believe this prioritization list is a good starting point to identify the urgent water quality needs of the state and that through this prioritization the State Board will be working with stakeholders on specific regulatory changes before they are formally adopted into the Ocean Plan. We look forward to that ongoing process to help protect the beneficial uses of the waters of California.</p>	
<p><b>Pacific EcoRisk</b> Representative: Stephen L. Clark</p>	<p>16.01</p>	<p>Issue G</p>	<p>As a laboratory that performs whole effluent testing (WET), we are directed via NPDES permits to perform the testing cited in the Ocean Plan and per the EPA testing manual (EPA/600/R-95/136). This testing manual is not listed in 40 CFR Part 136, and was not part of an EPA process from the late 1990s – 2002 to review and updated other testing manuals (e.g., both freshwater and marine) that included revisions to various quality assurance and quality control element, among other items.</p> <p>All of these methods provide guidance on the performance of reference toxicant testing, which is a QC test to determine both the sensitivity of the test organism batch used in testing and for ongoing laboratory performance evaluations. While the updated 2002 method manuals provide flexibility for the laboratories to use any chemical for generating their reference toxicant database, it is the perspective of some Regional Water Boards and CA ELAP assessors that the 1995 West Coast manual <i>requires</i></p>	<p>Comment noted. Issue G of the 2019 Ocean Plan Review states the State Water Board may consider amending the Ocean Plan to replace toxicity unit statistical approach with the test of significant toxicity approach for acute and chronic toxicity water quality objectives and associated changes to the program of implementation and monitoring procedures. If such an amendment were pursued, the State Water Board would consider available information, including toxicity testing methods, indicator species, and references for assessing water quality.</p>

Organization	No.	Issue	Comment	Response
			<p>specific reference toxicant chemicals and includes required test acceptability criteria.</p> <p>In addition to the flexibility in selecting a chemical that works best for a laboratory, the 2002 methods provide a performance based framework for evaluating the reference toxicant test outcome (e.g., evaluate the reference toxicant test outcome to determine if within +/- 2 standard deviations or within +/- 3 standard deviations) and requires specific actions for performing additional future testing if the test is outside of +/- 3 standard deviations. The 2002 method manuals also indicate that a reference toxicant test is not to be used as a de facto justification for rejection of an effluent test outcome. In contrast, the 1995 West Coast manual has established specific test acceptability criteria that would invalidate an effluent test if the test acceptability criteria for the reference toxicant test are not met. For example, the chronic top smelt method (EPA 1006.0) requires the use of copper as the reference toxicant and requires that the following test acceptability criteria be met: reference toxicant LC50 must be <math>\leq 205</math> <math>\mu\text{g/L}</math>, &lt;25% MSD for survival, and &lt;50% for growth.</p> <p>As part of an evaluation of toxicity test methods leading up to the 2002 method manual updates, a large inter-laboratory method variability study was performed and included tests in the 1995 West Coast manual. That study demonstrated that there was greater method variability in the 'reference toxicant' (blind samples provided to the laboratories) for metals (e.g., copper) than for salts (e.g., NaCl). Our laboratory performed an internal analyses comparing the variability in metals reference toxicant tests</p>	

Organization	No.	Issue	Comment	Response
			<p>to those of salt reference toxicant tests, and also observed reduced test variability when using salts as a reference toxicant test. For this reason, as well as to reducing employee exposure to metals and reducing metals waste to our local publicly owned wastewater treatment plant, we transitioned over to salts as reference toxicant test materials following approval of the 2002 method manuals. However, regional regulatory authorities in CA will cite the method tests acceptability criteria for the 1995 West Coast methods as requiring the use of metals as reference toxicants.</p> <p>For the reasons of reducing metals waste to the environment, applying the modern science from studies (e.g., latest 2002 EPA toxicity methods), and to apply the EPA laboratory method variability measures that were selected based on salts, we reached out to the US EPA to determine if an ATP could be implemented for this issue. They indicated that since the EPA/600/R-95/136 method manual was not listed in 40 CFR Part 136 that we should reach out to the State regulators. We reached out to State Board staff member Renee Spears for and she suggested that we submit our request as part of the Ocean Plan review. What we are specifically asking for is that the Ocean Plan include a note/footnote to the reference of EPA/600/R-95/136 methods that allow for the use of salts as reference toxicants.</p>	
<b>Poseidon Water</b> Representative: Stan Williams	17.01	Issue O	Just a little over a month earlier than this draft report, the San Diego Regional Water Quality Control Board renewed a permit governing discharges from our Claude "Bud" Lewis Carlsbad Desalination Plant into the Pacific Ocean	Comment noted. See responses to comments 17.02 through 17.09.

Organization	No.	Issue	Comment	Response
			<p>that included structural and operational changes to provide greater protection for marine life and water quality (see attached press release). Significantly, this renewed permit includes environmental protections adopted by the State Water Board in its Desalination Amendment in May 2015. The Regional Board's action supported the use of ocean water as a reliable supplement to traditional water supplies.</p> <p>In addition to this recent permit approved by the San Diego Regional Board, Poseidon has submitted an application for permit renewal of the proposed Huntington Beach Desalination Project in June of 2016 to the Santa Ana Regional Water Quality Control Board. That application was deemed by the Regional Board staff to be complete in October 2018. The next step in this process is the release of the tentative draft waste discharge requirements and Water Code determination.</p> <p>Considering Poseidon's experiences with the implementation of the Ocean Plan Amendments related to both the Carlsbad and Huntington Beach projects we have developed several comments related to the draft Staff Report and Work Plan of June 24, 2019.</p>	
	17.02	Issue O	<p>As we understand it, Issue O: Desalination Implementation Provisions is a recommendation to review the desalination implementation provisions and identify proposed amendments to the Ocean Plan to clarify and streamline the permitting process. As such, this review would not be about the substantive policies included in the Desal Amendment, but would be focused on administratively</p>	See response to comment 2.01.

Organization	No.	Issue	Comment	Response
			clarifying, streamlining, and expediting the permitting process and improving interagency coordination.	
	17.03	Issue O	Poseidon supports efficient permitting that conserves resources, but comments that Issue O as an administrative cleanup initiative should be evaluated accordingly in the State Water Board staff's issue priority ranking system.	Comment noted. See responses to comments 2.01, 2.02, and 2.03.
	17.04	Issue O	<p>In Section 3 - Recent Ocean Plan Amendments there is a short summary of the recent Desalination Amendment: on Page 8:</p> <p><i>“The State Water Board adopted an amendment to the Ocean Plan to address impacts to marine life associated with the construction and operation of seawater desalination facilities. This amendment was adopted by the State Water Board on May 6, 2015, through Resolution No. 2015-003310 and took effect on January 28, 2016. This project was Issue 4 in the 2011 Ocean Plan Review.”</i></p> <p>This summary should be included in Section 7 Issues Fact Sheets related to Issue O: Desalination Implementation Provisions on Page 27 rather than the current version: <i>History: New in 2019.</i></p>	The purpose of the history section in the issue facts sheets of Section 7 of the Staff Report is to identify whether the issue was included in prior Ocean Plan reviews.” Review of the existing desalination provisions was not included in prior Ocean Plan reviews; therefore, this is a new issue as stated in Section 7.
	17.05	Issue O	The Section 7 Issues Fact Sheets related to Issue O: Desalination Implementation Provisions should be revised to note that the Desalination Amendment, for the first time, provides a uniform, consistent process for permitting of seawater desalination facilities statewide. In doing so, it provides direction for regional water boards when permitting new or expanded facilities and provides specific	The fact sheet for Issue O: Desalination Implementation Procedures states that the desalination provisions address effects associated with the construction and operation of seawater desalination facilities and provide a uniform, consistent process for permitting seawater desalination facilities statewide. Additionally, the provisions provide direction to the coastal water boards for implementation California Water code section

Organization	No.	Issue	Comment	Response
			implementation and monitoring and reporting requirements.	13142.5(b). It is unnecessary to state that the desalination provisions are first such provisions in the Ocean Plan.
	17.06	Issue O	<p>Comments related to Appendix 1 – Issue Evaluation Matrix on Page 50 as it addresses Issue O: Desalination Implementation Provisions.</p> <p>1. Criteria 1 Potential for improving Conditions Consistent with the Water Boards’ Mission is intended to give issues that have the potential to improve the preservation, enhancement, and restoration of California’s water quality and beneficial uses of water higher scores, while issues that result in little or no direct improvement will be given lower scores. The draft staff report assigns 15 out of 15 points for Issue O for this Criteria, which does not appropriately recognize that the Desal Amendment itself improved conditions and Issue O is merely clarification and streamlining the implementation of the Desal Amendment. Since this cleanup initiative would not substantially change the substance of the Desal Amendment <u>the score for Criteria 1 should be changed to 5 out of 15 points.</u></p>	See responses to comments 2.02 and 2.03.
	17.07	Issue O	<p>2. Criteria 3 - Aligning Statewide Needs is intended to recognize issues that would either align water quality control plans and provide consistency or address needs in more than one region. This criterion also recognizes issues that address existing Board direction and impact more than one region, such as climate change resiliency. Issues that would provide consistency statewide or between regions will receive a higher score. The draft staff report assigns 10 out of 10 points for Issue O: Desalination Implementation Provisions. As noted above,</p>	See responses to comment 2.02 and 2.03.

Organization	No.	Issue	Comment	Response
			<p>it was the Desalination Ocean Plan Amendment which, for the first time, provided a uniform, consistent process for permitting of seawater desalination facilities statewide. In doing so, it provided direction for regional water boards when permitting new or expanded facilities and provided specific implementation and monitoring and reporting requirements. Issue O as proposed would not materially change the Desalination Ocean Plan Amendment but would simply clarify and streamline the process and as <u>such the score for Criteria 3 should be changed to 5 out of 10 points.</u></p>	
	17.08	Issue O	<p>3. Criteria 6 - Potential for Completion – 10 points. This criterion recognizes that projects already close to completion, or those with lower controversy or lower technical complexity, can be completed efficiently and with fewer State Water Board staff resources. Higher scores will be assigned for non-controversial issues or for those that are considered as straightforward from a technical perspective. The draft staff report assigns 6 out of 10 points for Issue O: Desalination Implementation Provisions. While this score does reflect some of the complexity of the issue, it underestimates the impact on State Water Board staff resources and the time it will take to complete.</p> <p>The Ocean Plan amendment took over five years to complete and included:</p> <ul style="list-style-type: none"> <li>• Three expert panels,</li> <li>• Seven interagency meetings,</li> <li>• Eight public meetings/workshops,</li> </ul>	See responses to comment 2.02 and 2.03.

Organization	No.	Issue	Comment	Response
			<ul style="list-style-type: none"> <li>• Forty-seven comment letters, and</li> <li>• Two public hearings.</li> </ul> <p>The result of all that effort was the adoption of very complex technical approaches to achieve the State Water Board's objectives. Issue O, even if it is purely administrative, would still deal with subject matter that is very controversial with strong proponents of very different policies. <u>The score for Issue O for Criteria 6 should be changed to 3 points out of the possible 10.</u></p>	
	17.09	Issue O	<p>Poseidon Water supports continuous improvement in permitting processes, but in the case of Issue O: Desalination Implementation Provisions, the relative importance of the effort seems to be overrated in the draft Staff Report and Work Plan. Given the limited staff resources available to work on this periodic review of the Ocean Plan, reopening the Desal Amendment would be a poor use of those resources. There is not a need to include Issue O in the very high or high priority issues currently.</p> <p>Reopening the Desalination Ocean Plan Amendment at this time would be disruptive to desalination projects that are currently under review. Poseidon recommends that the State Water Board not proceed with revisions to the Desalination Ocean Plan Amendment. If the decision is made to proceed with revisions, any desalination project that has an Report of Waste Discharge under review or that has been approved by a Regional Water Board prior to any changes in the Ocean Plan related to desalination should be processed and approved under the Desalination</p>	See responses to comments 2.01, 2.02, 2.03, and 2.05.



Organization	No.	Issue	Comment	Response
			Ocean Plan Amendment adopted by the State Water Board in May 2015, and such projects should not be subject to any future desalination amendments to the Ocean Plan unless the project applicant requests a new water code determination	
<b>San Francisco Public Utilities Commission</b> Representative: Amy Chastain	18.01	Issue V	The San Francisco Public Utilities Commission’s Wastewater Enterprise (SFPUC) appreciates the opportunity to comment on Issue V: Exception to the Ocean Plan for San Francisco Storm Water and Wastewater Discharges as described in the <i>Draft Staff Report and Work Plan for 2019 Review of the Water Quality Control Plan for Ocean Waters of California (Draft Staff Report)</i> . The SFPUC submits these comments to correct information contained in the <i>Draft Staff Report</i> and to provide additional context for the State Water Resources Control Board (State Board) to consider when prioritizing resources to be dedicated to this issue. The SFPUC asks that the State Water Board staff engage SFPUC staff at the inception of any effort to revise or update the exception.	Comment noted. If the State Water Board directs staff to review the exceptions to the Ocean Plan for San Francisco’s wet weather storm and wastewater discharges in accordance with the 2019 Ocean Plan Review, the scope of any proposed changes would be determined at that time. Any amendment to the Ocean Plan will be developed in accordance with state and federal requirements, including project scoping requirements, public participation requirements, and engagement with other regulatory agencies. Staff may also consider these comments submitted as part of the 2019 Ocean Plan Review record.
	18.02	Issue V	<p><b>Combined sewer discharges do not occur when rainfall exceeds 0.02 inches per hour.</b></p> <p>The <i>Draft Staff Report</i> incorrectly states that combined sewer discharges (CSDs) occur when rainfall exceeds 0.02 inches per hour. The basis for this statement is the 1979 State Board Order (79-16) excepting San Francisco’s wet weather discharges from compliance with certain provisions of the 1978 Ocean Plan. Consistent with the conditions imposed by Order 79-16, San Francisco</p>	Section 7 Issue V of the Staff Report was revised to reflect current conditions.

Organization	No.	Issue	Comment	Response
			<p>implemented an approximately \$2 billion long-term control plan (LTCP) for reducing wet weather discharges Citywide. Implementation of this capital plan was completed in the mid-1990s and resulted in a massive increase in the wet weather treatment and storage capacity of the Westside system. This investment decreased the number of CSD events in a typical year from 114 to 7, and reduced the average annual volume of shoreline wet weather discharges by more than 90%. The SFPUC requests that the <i>Draft Staff Report</i> be modified to reflect the current Westside wet weather infrastructure and its performance; changes are suggested below:</p> <p>The City and County of San Francisco has a combined storm and wastewater collection system. <u>At the time the Ocean Plan exception was adopted in 1979, when rainfall exceeded 0.02 inches per hour, untreated domestic wastewater mixed with storm water runoff is was discharged into the ocean through any one or more of eight wet weather combined sewer overflow outfall diversion structures in the Richmond Sunset Sewerage Zone. Since 1979, San Francisco has increased wet weather storage and treatment, which reduced the average annual frequency of combined sewer discharges to 7 events and decreased the average annual volume discharged through nearshore outfalls by more than 90%.</u></p>	
	18.03	Issue V	<b>Shoreline monitoring demonstrates that human health is being protected.</b>	Section 7 Issue V of the Staff Report was revised to recognize the shoreline monitoring for bacteria included in the monitoring and reporting program of Order No. R2-2009-0062, to clarify the

Organization	No.	Issue	Comment	Response
			<p><i>The Draft Staff Report</i> states that neither the Ocean Plan exception nor the Oceanside Water Pollution Control Plant (OSP) National Pollutant Discharge Elimination System (NPDES) permit requires that CSDs be monitored for fecal indicator bacteria (FIB) and concludes that they are therefore not protective of human health. These statements significantly mischaracterize both the OSP NPDES permit requirements and the impacts of wet weather discharges on water quality.</p> <p>The OSP NPDES permit requires the City to perform receiving (shoreline) monitoring for FIB whenever a CSD occurs. San Francisco has fulfilled this requirement through a comprehensive shoreline monitoring program that has been in place for more than 15 years. SFPUC and the San Francisco Department of Public Health collect samples at multiple locations weekly and after every CSD. If sample FIB concentrations are elevated, the public is notified, and the sites are sampled daily until concentrations return to background levels. Analyses of shoreline data collected by the City indicates that, if FIB concentrations are elevated after a CSD, concentrations typically drop to ambient levels in less than 24 hours. In an average year, this would result in elevated FIB concentrations for approximately 7 days, or two percent of the year.</p> <p>CSD end-of-pipe FIB monitoring is impractical and would generate no useful information about receiving water quality. CSD occurrence cannot be precisely anticipated due to the unpredictability of storm intensity and location. The approved methods for FIB analysis require that</p>	<p>status of the San Francisco Bay Regional Water Board's consideration of a revised permit, and to clarify U.S. EPA's comment and the State Water Board's response associated with the Bacteria Objectives Amendment. In addition, see response to comment 18.01.</p>

Organization	No.	Issue	Comment	Response
			<p>samples be collected as grabs and analyzed within six hours of collection. End-of-pipe CSD sampling, therefore, would require staff be deployed at CSD outfalls in advance of every large storm event, and that they stay on site until a discharge occurs or the storm subsides. Not only does this present staffing challenges, it raises substantial safety issues, especially because storm events often occur at night and storm events often result in high wind and surf conditions. The limited hold times for FIB would also require that lab analysts be on-call 24 hours a day to ensure timely receipt and analysis.</p> <p>In addition to raising substantial logistical and safety concerns, the results of end-of-pipe monitoring for FIB would show what is already known: CSD discharges, like urban stormwater runoff, contain elevated FIB concentrations. Shoreline monitoring would still be necessary to determine receiving water concentrations and to provide necessary public notification. Given the level of FIB monitoring and notification required by the OSP NPDES permit, both the exception order and the permit are protective of human health. The SFPUC requests the following changes to the <i>Draft Staff Report</i>:</p> <p><del>In its current state, the exception and associated permit do not require monitoring for bacteria effluent from any of the discharge locations and are not protective of human health. However, the Monitoring and Reporting Program in <u>Order No. R2-2009-0062</u> and the Tentative Order addresses some of these concerns and requires shoreline monitoring for bacteria where water contact</del></p>	

Organization	No.	Issue	Comment	Response
			<p>recreation takes place. <u>Monitoring indicates that, on average, shoreline concentrations of bacteria are elevated for less than 24 hours after a CSD occurs.</u></p>	
	18.04	Issue V	<p><b>The Ocean Plan exception is appropriate.</b></p> <p>As summarized in the <i>Draft Staff Report</i>, exceptions to Ocean Plan provisions are appropriate when (a) the exception will not compromise protection of ocean waters for beneficial uses, and (b) the public benefit will be served. Extensive data collected by San Francisco demonstrates that CSDs are not harming beneficial uses, even if they cause receiving water FIB concentrations to be briefly elevated above numeric water quality criteria. The public continues to benefit from the multi-billion dollar upgrades to storage and treatment made by San Francisco. The result of the investment was not only to hugely reduce the frequency and volume of untreated wet weather discharges, it also ensures treatment of more than 1 billion gallons of urban stormwater generated on the Westside annually. Through its capital planning process, the SFPUC continuously evaluates opportunities to improve wet weather performance. Extensive evaluation of project options, costs and water quality benefits has demonstrated that the incremental improvements to water quality of providing additional wet weather controls would be extremely small. The performance of the current combined sewer system is effectively assuring protection of beneficial uses and providing public benefit. Accordingly, the exception issued under Order 79-16 remains appropriate.</p>	<p>Comment noted. Because there have been substantial infrastructure upgrades to the wet weather treatment and storage capacity of San Francisco's combine storm and wastewater collection system since the 1970s, and because of changes in water quality standards over the decades, it is appropriate to review the exception for San Francisco's combined sewer discharges to the ocean. As resources are available, Issue V recommends reviewing the exception to the Ocean Plan for San Francisco's combined sewer discharges to the ocean to consider whether it is appropriate to amend the existing exception or use a variance instead of an exception.</p>

Organization	No.	Issue	Comment	Response
<b>United States Environmental Protection Agency</b> Representative: Terry Fleming	19.01	Other	In general, EPA supports the State Water Board's prioritization.	Comment noted.
	19.02	Issue G	EPA understands that the State Water Board plans to consider adoption of the toxicity provisions for the Inland Surface Waters, Enclosed Bays and Estuaries (ISWEBE) Plan in December. EPA recommends that the State Water Board commit to considering the Ocean Plan toxicity provisions in the near term to ensure consistency between the Plans. The species, methods, and statistics for the marine species have already been through peer review and public review, which should minimize the work needed to consider adoption of the toxicity provisions for the Ocean Plan.	Comment noted. Issue G in the 2019 Ocean Plan Review is ranked as a high priority issue.
	19.03	Issue V	As previously expressed in our August 14, 2017 letter to you, EPA is concerned about State Board Order WQ-79-16. This 1979 Order granted the City and County of San Francisco's eight diversion structures in the Richmond Sunset Sewerage Zone an exception to the Ocean Plan's prohibition against discharge or by-pass of wastewater not conforming to the Ocean Plan standards. While discharges from the diversion structures are not required to comply with the water quality objective for bacteria, they must comply with all other applicable water quality objectives to the greatest extent practical and must not adversely affect beneficial uses. (We note that there are currently only seven diversion structures still in use.) This exception, which has	See response to comment 18.04. Section 7 Issue V of the Staff Report recommends, as resources are available, reviewing the exception to the Ocean Plan for San Francisco's combined sewer discharges to the ocean to consider if it is appropriate to amend the existing exception or issue a variance instead of an exception. If this issue is undertaken as a project, the State Water Board will engage with the public, invested parties, and other regulatory agencies at that time.

Organization	No.	Issue	Comment	Response
			<p>been in place for 40 years, has never been reviewed or updated, despite significant changes to the treatment and collection of combined sewage in the western portions of San Francisco.</p> <p>As you are aware, EPA updated regulatory requirements for variances in 2015 (see 80 Fed. Reg. 51019). A water quality standards variance strikes a balance between providing the time and flexibility needed to make incremental water quality improvements that reflect the best that can be achieved in a given time period, with accountability measures to assure the public that progress will occur. In light of the considerable age of the 1979 exception, changes to the system and to treatment technologies, and updates to regulatory requirements for variances (see 40 C.F.R. § 131.14), EPA believes this exception should be updated to be in accordance with the Clean Water Act.</p>	
<p><b>Member of the Public</b></p> <p>Representative: William Bourcier, Ph.D.</p>	20.01	Issue O	<p>I am very disappointed that the draft work plan for the California Ocean Plan issued June 24th of this year does not include any mention of the significant greenhouse gas emissions (GHG) that would take place if future seawater desalination projects are required to use subsurface feeds.</p> <p>Previously I provided information in the form of public comments and a report that quantifies the likely GHG emission for potential feed wells in the Marina Coast area based on data from measured fluid compositions from the CalAm slant wells. The analysis showed that at a minimum the use of the subsurface wells would double the carbon footprint of desalination. If methane were also considered, the GHG emissions would likely much more</p>	See responses to comments 2.01, 3.01, and 9.03.

Organization	No.	Issue	Comment	Response
			<p>than double. The methane could not be evaluated because it was not measured, and no measurement was required by regulations.</p> <p>An analysis of my findings by Trussel Technologies (via a contract let by Cal/Am Monterey Peninsula Water Supply Project. Jan 2017) validated my calculations, but made two erroneous conclusions that I document in my “Comments to the Trussel Report” of February 2017. The first comment has to do with using caustic at the treatment plant to keep carbon dioxide from degassing, the second is misrepresentation of a “conservative” release number that is simply not the case. The Trussel report does not in any way correct or revise my conclusions.</p> <p>In any event, California continues down a path towards requiring an intake method to feed seawater desalination plants that is technically not justifiable for many reasons. My point is that in addition to other problems, the GHG emissions that subsurface intakes will cause are significant and need to be included in any thoughtful plan for carrying out desalination in California. The current plan does not mention this known problem of GHG release, even with knowledge of its existence, and a significant effort to dismiss its importance via a very flawed analysis.</p> <p>California is leading the way in finding ways to reduce carbon emissions. It seems a shame to make this mistake in our plan for ocean desalination. As our climate problems intensify, we need to structure our regulations with an awareness that each method through which we can reduce emissions is important. Many emissions are</p>	



Organization	No.	Issue	Comment	Response
			either technically or politically difficult to find solutions for. Ocean desalination is one area where we have efficient technologies to carry out desalination and help offset diminishing water supplies. Why do we impede its use with unjustifiable and technically nonsensical requirements?	

<sup>i</sup> Conley, K., Clum, A., Deepe, J., Lane, H., Beckingham, B. Wastewater treatment plants as a source of microplastics to an urban estuary: Removal efficiencies and loading per capita over one year. *Water Research*. 2019; 3 (1): 100030.

<<https://www.sciencedirect.com/science/article/pii/S2589914719300647?via%3Dihub>>.

<sup>ii</sup> Allen, S., Allen, D., Phoenix, V.R., et al. Atmospheric transport and deposition of microplastics in a remote mountain catchment. *Nature Geoscience*. 2019; 12: 339-344. <<https://www.nature.com/articles/s41561-019-0335-5>>.

<sup>iii</sup> Choy, C.A., Robison, B.H., Gagne, T.O., et al. The vertical distribution and biological transport of marine microplastics across the epipelagic and mesopelagic water column. *Scientific Reports*. 2019; Volume 9, Article 7843, ISSN 2045-2322. <<https://www.nature.com/articles/s41598-019-44117-2>>.

<sup>iv</sup> Jiang, C., Yin, L., Li, Z., Wen, X., Luo, X., Hu, X., Yang, H., Long, Y., Deng, B., Huang, L., Liu, Y. Microplastic pollution in the rivers of the Tibet Plateau. *Environmental Pollution*. 2019; 249: 91-98. <<https://www.sciencedirect.com/science/article/pii/S0269749118349182>>.

<sup>v</sup> Cole, M., Lindeque, P., Halsband, C., Galloway, T.S. Microplastics as contaminants in the marine environment: A review. *Marine Pollution Bulletin*. 2011; 62 (12): 2588-2597. <<https://www.sciencedirect.com/science/article/abs/pii/S0025326X11005133>>.

<sup>vi</sup> Lusher, A.L., Burke, A., O'Connor, I., Officer, R. Microplastic pollution in the Northeast Atlantic Ocean: Validated and opportunistic sampling. *Marine Pollution Bulletin*. 2014; 88 (1-2): 325-333. <<https://www.sciencedirect.com/science/article/pii/S0025326X14005530>>.

<sup>vii</sup> Cauwenberghe, L.V., Vanreusel, A., Mees, J., Janssen, C.R. Microplastic pollution in deep-sea sediments. *Environmental Pollution*. 2013; 182: 495-499. <<https://www.sciencedirect.com/science/article/pii/S0269749113004387>>.

<sup>viii</sup> Sutton, R., Mason, S.A., Stanek, S.K., et al. Microplastic contamination in the San Francisco Bay, California, USA. *Marine Pollution Bulletin*. 2016; 109 (1): 230-235. <<https://www.sciencedirect.com/science/article/abs/pii/S0025326X16303976>>.

<sup>ix</sup> Chua, E.M., Shimeta, J., Nugegoda, D., et al. Assimilation of polybrominated diphenyl ethers from microplastics by the marine amphipod, *Allorchestes compressa*. *Environ. Sci. Technol.* 2014; 48: 8127e8134.

<sup>x</sup> Besseling, E., Wegner, A., Foekema, E.M., et al. Effects of microplastic on fitness and PCB bioaccumulation by the lugworm *Arenicola marina* (L.). *Environ. Sci. Technol.* 2013; 47: 593e600.

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