COMMENT SUMMARY AND RESPONSES
PART 3 OF THE WATER QUALITY CONTROL PLAN FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA--BACTERIA PROVISIONS AND A WATER QUALITY STANDARDS VARIANCE POLICY
AND
AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA--BACTERIA PROVISIONS AND A WATER QUALITY STANDARDS VARIANCE POLICY

COMMENT DEADLINE: 12:00 NOON ON AUGUST 16, 2017

August 7, 2018

No.	Commenter
1.	Bay Area Clean Water Agencies
2.	California Cattlemen's Association
3.	California Coastkeeper Alliance
4.	California Stormwater Quality Association
5.	Calleguas Creek Watershed Management Plan
6.	Central Sierra Environmental Resource Center
7.	Central Valley Clean Water Association
8.	Central Valley Irrigated Lands Regulatory Program Coalitions
9.	City of Los Angeles Sanitation
10.	City of Malibu
11.	City of Sacramento
12.	City of San Diego
13.	City of Watsonville
14.	County of Los Angeles and the Los Angeles County Flood Control District
15.	The County of Orange and the Orange County Flood Control District
16.	County of San Diego
17.	County Sanitation Districts of Los Angeles County
18.	Heal the Bay
19.	Karuk Tribe
20.	Klamath Riverkeeper, Pacific Coast Federations of Fishermen's Association, Institute for Fisheries Resource
21.	KMI
22.	Los Angeles Department of Water and Power
23.	Middle Santa Ana River Bacteria TMDL Task Force
24.	Monterey County Public Health Laboratory

25.	San Diego Unified Port District
26.	Quartz Valley Indian Reservation
27.	Sacramento Regional County Sanitation District
28.	Sacramento Stormwater Quality Partnership
29.	San Diego Copermittees (County of San Diego)
30.	San Francisco Public Utilities Commission
31.	Centennial Livestock
32.	U.S. EPA, Region IX
33.	Ventura Countywide Stormwater Quality Management Program
34.	Summary of Oral Comments made by Heal the Bay
35.	Summary of Oral Comments made by the Central Sierra Environmental Resource Center
36.	Summary of Oral Comments made by Centennial Livestock
37.	Summary of Oral Comments made by the California Stormwater Quality Association
38.	Summary of Oral Comments made by Larry Walker and Associates

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Bay Area Clean Water Agencies Representative: David R. Williams	1.01	BACWA supports the State Water Board reducing the health risk level to match EPA's most recent health risk level recommendations for the contact recreation beneficial use (REC-1). However, BACWA also recognizes that disinfecting wastewater effluent has ancillary environmental impacts. For agencies that use UV disinfection, higher UV doses for higher levels of disinfection require more energy. Chlorine disinfection for higher levels of bacterial indicator removal requires greater use of chemicals. This higher chlorine dosing leads to the generation of increased levels of disinfection byproducts, and requires larger doses of sodium bisulfite added to the effluent to quench the chlorine. Either UV or chlorine disinfection has a higher carbon footprint to achieve greater levels of disinfection. Because of these ancillary impacts, it raises a concern that Regional Water Boards might require agencies to disinfect beyond a level required to achieve water quality objectives. Balancing environmental and human health risks highlights the importance of using mixing zones when calculating effluent limits for municipal wastewater dischargers.	Please refer to Chapter 6, section 6.1 of the Draft Staff Report, Including Substitute Environmental Documentation For Part 3 Of The Water Quality Control Plan For Inland Surface Waters, Enclosed Bays, and Estuaries Of California—Bacteria Provisions And A Water Quality Standards Variance Policy and Amendment To The Water Quality Control Plan For Ocean Waters Of California—Bacteria Provisions And A Water Quality Standards Variance Policy (hereafter separately referred to as Part 3 and the Ocean Plan Amendment, respectively, and collectively referred to as the Staff Report) regarding the use of chlorine and ultraviolet light as disinfection methods. When chlorine is used as a disinfection method, a de-chlorination process must be maintained. As discussed in Chapter 2, section 2.7 of the Staff Report, effluent limits in permits for 95 out of 134 POTWs are based on the recycled water criteria under Title 22 of the California Code of Regulations (referred to as Title 22 in this document). The Title 22 criteria are	No

[1] Revision pertains to a change made to the Proposed Final Staff Report and/or the Proposed Final Bacteria Provisions. A revisions will be marked Yes only in the first instance the revisions is described in the responses to comments.

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			more stringent than the proposed water quality objectives as they are intended to be protective for other uses, such as agriculture beneficial uses which includes the irrigation of food crops and municipal and domestic supply beneficial uses. The Bacteria Provisions do not change the Title 22 criteria or limit a Regional Water Board's discretion in evaluating appropriate effluent limits. The Bacteria Provisions have been revised to clarify that "where a permit, WDR, or waiver of WDR contains a limit or condition that is derived from an objective or guideline that is more stringent that the proposed bacteria objectives, the proposed bacteria objectives would not be implemented in the permit, WDR, or waiver of WDR." (See Part 3 of the ISWEBE, Section IV.E.1.) In 39 cases, POTWs have effluent limits that reflect the objectives found in a Regional Water Quality Control Board's (Regional Water Board) Regional Water Quality Control Plan (Basin Plan) for the protection of water contact recreation (REC-1). In these cases the permits will need to be updated to reflect the proposed water quality objective within the Bacteria Provisions unless the Regional Water Board utilizes the Title 22 criteria. If the current technology in place cannot meet requisite standards, a compliance schedule could be afforded. Please see response to comment 23.09. See also response to comment 1.02.	
	1.02	The Draft Staff Report for the Bacteria Provisions addresses mixing zones for point sources beginning on page 16. Most NPDES dischargers in the San Francisco Bay Region have Enterococcus objectives for REC-1 applied as end-of-pipe limits, although mixing zones are allowed by the San Francisco Bay Basin Plan. The Draft Staff Report notes on page 17 that "With no statewide policy, existing Regional Water Board policies and procedures will apply. Regional Water Boards would likely continue their current practices for allowing mixing zones where appropriate." Given the impacts of excess disinfection, BACWA recommends that the State Water Board use this opportunity to encourage Regional Water Boards to use mixing zones in calculating bacterial indicator effluent limits, as allowed by their Basin Plans. BACWA suggests that the following	See response to comment 1.01 and Staff Report section 2.7. Due to the unique nature of the receiving water, effluent, and treatment facility, it is appropriate for Regional Water Boards to retain discretion in using a mixing zone to calculate bacteria effluent limitations. Adding additional language requiring the Regional Water Boards to utilize their existing authority to establish mixing zones where appropriate is unnecessary. National Pollutant Discharge Elimination System (NPDES) permittees should work with Regional Water Boards during permit renewals to ensure effluent limits are calculated and implemented appropriately.	No

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		language be added to the Bacterial Provisions, under Section IV.E.1: Bacteria effluent limits for NPDES-permitted dischargers shall be calculated using mixing zones as allowed by their Region's Water Quality Control Plans.		
California Cattlemen's Association Representative: Kirk Wilbur	2.01	CCA supports the adoption of *Escherichia coli* (*E. coli*) as the sole indicator organism for fresh waters and enterococci as the sole indicator organism for marine waters.	Comment noted. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing California Ocean Plan because California-specific epidemiological studies provide data that suggest fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposure and environmental conditions. The Water Board will consider evaluating the fecal coliform water quality objective at a later date.	No
	2.02	However, CCA urges the SWRCB to revise its Proposed Bacteria Provisions by adopting statewide bacterial objectives based on an estimated illness rate of 36 per 1,000 primary contact recreators, and to ensure that any adopted statewide bacterial provisions are no more restrictive than the status quo within each Region. Estimated Illness Rates and Corresponding Proposed Bacterial Standards CCA opposes the recommendation to base bacterial standards on the estimated illness rate of 32 per 1,000 primary contact recreators. Moreover, the estimated illness rate of 36 per 1,000 primary contact recreators reflects the appropriate level of public health protection as established by every Regional Water Quality Control Board that uses E. coli and/or enterococci as indicator organisms. Currently, only the San Francisco Bay RWQCB (Region 2), the Los Angeles RWQCB (Region 4), and the Colorado River RWQCB (Region 7) employ E. coli and/or enterococci as indicator organisms (with the remaining six RWQCBs employing only fecal coliform as indicator organisms).	As stated in Chapter 5 (section 5.2.4) of the Staff Report, the basis for most of California's current water quality objectives for bacteria were based on U.S. EPA's 1986 Recommended Water Quality Criteria and U.S. EPA's 1976 Quality Criteria for Water. The State Water Board is relying on the 2012 U.S. EPA Recreational Water Criteria report as the scientific basis for the Bacteria Provisions. The 2012 U.S. EPA Recreational Water Quality Criteria report incorporated the previous epidemiological studies from 1976 and 1986 and added an additional series of epidemiological studies. The 2012 U.S. EPA Recreational Water criteria also utilizes a broader definition of an illness to include gastrointestinal illness without a fever. The U.S. EPA recommends that states make a risk management decision regarding illness rates which determine the set of criteria values most appropriate for their waters. While the U.S. EPA found that both the 36 and 32 illnesses per 1,000 recreators illness rates were protective of public health, the 32 illnesses per 1,000 recreators illness rate affords more protection for public health based on the best science available. A more conservative illness rate is appropriate in order to better preserve, enhance, and restore the bacterial quality of California's water resources. Chapter 2 section 2.3.2 and Chapter 5 section 5.2.4 of the Staff Report was revised to further explain this justification.	Yes

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			Pursuant to Water Code section 13170, the numeric water quality objectives established by the Bacteria Provisions would supersede the numeric water quality objectives found in basin plans where a conflict exists. Narrative and site-specific water quality objectives would not be superseded by the bacteria objectives contained in the Bacteria Provisions (see chapter III.e.3 of Part 3 of the ISWEBE) and existing Total Maximum Daily Loads (TMDLs) would remain in place leaving the Regional Water Boards discretion to update those TMDLs as needed.	
	2.03	The San Francisco Bay Basin Plan sets the geometric mean for enterococci in waters designated Marine REC-1 at 35cfu/100mL and the freshwater REC-1 geometric mean for E. coli at 126cfu/100mL, in accord with the estimated illness rate of 36 per 1,000 primary contact recreators. The Los Angeles Basin Plan states that in marine water designated REC-1, "enterococcus density shall not exceed 35/100 ml," and that in fresh waters designated REC-1, "E. coli density shall not exceed 126/100 ml," also in accord with the estimated illness rate of 36 per 1,000 primary contact recreators. The Colorado River Basin Plan appears to adopt the 1986 USEPA standards for enterococci and E. coli in fresh waters designated REC-1, establishing a geometric mean of 126/100mL for E. coli and 33/100mL for enterococci. All three RWQCBs which have set an allowable geometric mean for E. coli in freshwater REC-1 waters have done so at 126cfu/100mL, and the two which have explicitly established allowable geometric means for enterococci in Marine REC-1 waters—Regions 2 and 7—have done so at 35cfu/100mL.It is also worth noting that the San Diego RWQCB's Basin Plan references USEPA's 1986 bacteriological criteria for REC-1 waters without adopting them, stating that "[t]he criteria may be employed in special studies within this Region to differentiate between pollution sources or to supplement the current coliform objectives for water contact recreation." The bacteriological criteria listed in the San Diego Basin Plan also reflect the less conservative 36 illnesses per 1,000 primary contact recreators figure—that is, they reflect the recommendation of 35cfu/100mL enterococci for saltwater samples and 126cfu/100mL E. coli for fresh water. Presumably these regulations were rationally-based and developed in review of the best science available to the RWQCBs—absent some compelling argument for altering the status quo levels for allowable quantities of E. coli in fresh waters and/or enterococci in marine waters, the limits carefully considered and established by the RWQCBs ought to be maintained.	See response to comment 2.02. The Bacteria Provisions are intended to provide consistency across the state of California and protect public health in waters designated with REC-1 using the most current epidemiological studies.	No

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	2.04	In a two-paragraph analysis of Alternative 4 (36 illnesses per 1,000 recreators), the Proposed Bacteria Provisions summarily dismiss the Alternative, noting that while this alternative "may potentially lead to fewer exceedances of the water quality objective," "the lower illness rate of 32 per 1,000 recreators is a more conservative recommendation that the State Water Board feels…would be more protective of human health." However, staff does not appear to have considered and weighed the potential impacts of choosing the 32 illnesses per 1,000 recreators standard over the 36 illnesses per 1,000 recreators standard. For instance, the increased frequency of exceedances under the more restrictive standard will burden dischargers and place additional burdens upon Regional and State Water Board resources (such burdens upon staff may additionally necessitate increases in water quality fees, further burdening dischargers). The more conservative standard also unnecessarily introduces administrative inconsistency in Regions 2, 4, and 7, which have already adopted E. coli and enterococci as indicator bacteria, but have done so at the less conservative standard. Weighed against USEPA's conclusion that both the 32 and 36 illness standards are protective of public health, an analysis of the impacts of the proposed standard and Alternative 4 clearly weigh in favor of adopting the less restrictive standard of Alternative 4. Given that (1) USEPA has recommended either an estimated illness rate of 36 per 1,000 primary contact recreators or 32 per 1,000 primary contact recreators, (2) all RWQCBs which have considered using enterococci as indicator organisms in marine waters and E. coli as indicator organisms in fresh water have set the geometric mean for those indicators at 35cfu/100mL and 126cfu/100mL, respectively, and (3) that maintaining the current geometric means for Regions 2, 4, 7, and 9 would ensure the greatest level of administrative consistency for the regulated community, CCA prefers that SWRCB adopt the U.S. EPA's estimated illness rate of 36 per 1,000 as the appropriate level of public health protection for illness rate.	See responses to comments 2.02 and 2.03. A report titled "Economic Analysis of Proposed Water Quality Objective for Pathogens in the State of California" was prepared under a U.S. EPA contract by Abt Associates to consider the economics of the Proposed Provisions. (Abt Associates., 2017.) The report informed the Staff Report's economic considerations on illness rate and is presented in Chapter 10 section 10.4 titled "Level of Public Health Protection for Illness Rate for Fresh and Marine Waters" of the Staff Report. Water Code section 13241 requires the State Water Board to consider specific factors associated with the objective under consideration and does not specifically require a cost-benefit analysis or such an analysis as it may relate to other possible objectives.	No
	2.05	Correlation Between Fecal Coliform and Proposed Bacterial Standards - In our February 20, 2015 scoping comments on the Statewide Bacterial Objectives, CCA opposed bacterial standards that would prove more restrictive that the status quo, and requested that "the SRWCB provide more definitive information that would demonstrate if switching to E. coli and enterococci as the sole indicator organism may actually result in more restrictive water quality standards than presently exist in each region." Throughout Appendix C of the Draft Bacteria Provisions (Calculations of Illness Rates), staff has estimated (without further explanation or analysis) that "E. coli is ~ 90% of Fecal Coliform." It is unclear how staff arrived at this estimate, and that estimate appears to conflict with correlative analyses between E. coli and fecal coliform conducted by other states (detailed in	Appendix C of the revised Staff Report has been removed because the application of the 0.9 fecal coliform to *E.coli* ratio, which is based on studies specific to the shoreline of southern California, to the fresh waters found in the North Coast, Central Valley, and Lahontan regions is inappropriate. The translation was not peer reviewed. Additionally, the 20 cfu/100 mL fecal coliform objective used in Appendix C for the Lahontan Region as the starting point for the translation to E. coli is not based on any risk of illness related to REC-1 uses alone, but is included in the Lahontan Basin Plan as a general objective established	Yes

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		our February 20, 2015 scoping letter). While CCA supports a shift to E. coli and enterococci as the statewide bacterial indicators, standards based on these indicators ought not to be more restrictive than the status quo, as this would cause undue burden for dischargers and the SWRCB. CCA therefore urges the SWRCB to more thoroughly examine the correlation between fecal coliform and E. coli/enterococci, and to adopt an estimated illness rate and corresponding bacterial standards which will not be more restrictive than those currently in place.	for the protection of all beneficial uses. Without the site-specific data to support a link to the risk of illness, there is no justification for the *E. coli* to fecal coliform translation for the protection of the REC-1 beneficial use. Lastly, the water quality objective for the Central Valley is a site-specific objective for Folsom Lake and would therefore not be superseded by the Bacteria Provisions and its inclusion within Appendix C was not applicable.	
California Coastkeeper Alliance Representative: Sean Bothwell	3.01	The State Water Board has a duty to ensure that Californians are protected against illnesses from polluted water. However, under the draft Bacteria Provisions, more water recreationalists could be getting sick than otherwise should.	See response to comment 2.02 and 3.08. The Bacteria Provisions are intended to provide consistency across the state of California and protect public health in waters designated with REC-1 using the most current epidemiological studies.	No
	3.02	The California coastline attracts 150 million visitors annually, with beach visitors spending over $10 billion each year in California. This results in a coastal economy valued at more than $1 trillion dollars. California's coastal economy alone is valued at more than $1 trillion dollars and provides half a million important jobs. Commercial fisheries in the state are valued at more than $7 billion annually. Recreational (coastal) fishing is valued at over $2 billion annually. Ocean-based recreation and tourism is valued at over $10 billion annually. Our coastal economy is vital to state's overall economy, and as such, the State Water Board should be adopting water quality standards that are more protective than the U.S. EPA's bare minimum standards.	See responses to comments for 3.01 and 3.08.	No
	3.03	The Draft Bacteria Provisions fail to protect against exposures to viruses, bacteria, and parasites on any given day. The prior criteria adopted in 1986 included a "single sample maximum," which was not to be exceeded. The State Water Board now proposes to allow water quality to exceed the criteria up to 10 percent of the time without triggering a violation. This approach could mask a serious pollution problem and expose families to an unnecessary risk of illness.	See response to comment 2.01. The Bacteria Provisions protect against exposure to pathogens by requiring compliance using both the geometric mean and the STV or single sample maximum (SSM) water quality objectives within permits and other regulatory programs. The Bacteria Provisions (ISWEBE Chapter III.E.2 and Ocean Plan Chapter II.B.1.a.(1)) have been revised to indicate that when applying the listing factors contained in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, except the situation-specific weight of the evidence factors, only the geometric mean value shall be applied based on a statistically sufficient number of samples. For enterococci and *E. coli* the geometric	Yes

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			mean is generally based on five samples distributed over a six-week period. For fecal coliform, the geometric mean shall be based on the five most recent samples within a thirty-day period. However, if a statistically sufficient number of samples is not available to calculate the geometric mean, then attainment of the water quality standard shall be determined based only on the STV for enterococci and *E. coli*, and the SSM for fecal coliform. As indicated in the Bacteria Provisions (ISWEBE Chapter III.E.2 and Ocean Plan Chapter II.B.1.a.(1)), the geometric mean, STV and SSM objectives are the measures for determining attainment of the bacteria water quality objectives. Chapter 5 section 5.2.5 of the Staff Report discusses that a six-week rolling geometric mean calculated weekly balances statistical strength with timely notification of exceedances to show if the water body is suitable for recreation. The statistical threshold value (STV) is derived in a manner similar to how the 1986 criteria single sample maximum was derived, by estimating the percentile of the expected water quality distribution around the geometric mean. For the STV, U.S. EPA selected the estimated 90th percentile of the water quality distribution to take into account the expected variability in water quality measurements, while limiting the number of samples allowed to exceed the STV, before determining water quality is impaired. This approach encourages monitoring because once an exceedance is observed, at least ten more samples need to be below the STV before water quality is considered unimpaired. Because the U.S. EPA Recreational Water Quality Criteria did not fully consider the relevance of fecal coliform to California in the U.S. EPA 2012 Recreational Water Quality, as discussed in section 5.2.3 of the Staff Report, there is no recommended updated value for fecal coliform geometric mean and STV. Thus, for fecal coliform the water quality objectives will be retained as	

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			written in the Ocean Plan. The geometric mean shall be based on the five most recent samples from each site and the SSM will be used as the maximum value not to be exceeded in any single sample. The Bacteria Provisions for Ocean Waters continue to include the beach notification levels established under Title 17 of the California Code of Regulations section 7859. These levels serve as a tool, based on a single sample, for local health officers to access conditions and close, post with warning signs, or otherwise restrict use of the public beach or water-contact sports area until standards are met. See also response to comment 4.17 and 33.18.	
	3.04	The draft Provisions also are based on what the U.S. EPA has determined is an acceptable gastrointestinal illness risk of 3.2 percent. That is, the State Water Board believes it is acceptable for 32 in 1,000 swimmers—that's 1 in 31 swimmers—to become ill with gastroenteritis sicknesses such as diarrhea, nausea and vomiting, from swimming in water that just meets EPA's water quality criteria. This risk is unacceptably high and is not protective of human health.	See response to comment 3.08 and 33.18.	No
	3.05	THE STATE WATER BOARD SHOULD PREVENT BACKSLIDING BY EXEMPTING REGION 1 AND OTHER REGIONS WITH MORE STRINGENT EXISTING WATER QUALITY OBJECTIVES. The Bacteria Provisions include updated water quality objectives for bacteria to supposedly protect human health for the beneficial use of REC-1 in fresh, estuarine, and marine waters. As the State Water Board states, "the water quality objectives will supersede all existing numeric bacteria objectives to the extent a conflict exists, unless the Bacteria Provisions expressively provide that those conflicting objectives shall remain in effect." The State Water Board's Draft Provisions violate the anti-backsliding provisions. The CWA contains "anti-backsliding" provisions that prohibit relaxation of permit terms upon renewal. The CWA requires that, for effluent limitations based on a state water quality standard, "a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit," unless certain exceptions apply. It also states that "[i]n no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of [water quality standards]." Similarly, EPA regulations require that "when a permit is renewed or reissued, interim effluent limitations, standards or conditions	The Bacteria Provisions' water quality objectives for bacteria, and the superseding of numeric water quality objectives for bacteria for the REC-1 use contained in a Basin Plan prior to the effective date of the provisions, do not violate the rule against backsliding. As a threshold matter, it is important to note that the restrictions on backsliding do not apply to the establishment of water quality objectives. Any legal argument based on restrictions on backsliding are premature until a Water Board proposes to take final action to relax permit limitations, which adoption of the Bacteria Provisions would not do. The intent of the anti-backsliding provisions in the Clean Water Act is to maintain improvements in water quality which have been achieved as a result of prior permits. Clean Water Act section 402(o) establishes a prohibition against backsliding except in certain limited circumstances.	Yes

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		must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit . . ."	With respect to water quality-based effluent limitations (established on the basis of Clean Water Act section 301(b)(1)(C) or section 303), the Clean Water Act section 401(o) allows relaxation of water quality-based effluent limitations if the requirements of section 303(d)(4) are met. Section 303(d)(4) provides different criteria for exceptions, depending on whether the receiving waters are in attainment. For waters for which standards are attained, water quality-based effluent limitations may be relaxed as long as water quality standards are met and such relaxation complies with antidegradation requirements. The Water Board would determine on a case-by-case basis whether a lowering of water quality would be allowed. For waters for which standards are not attained, water quality-based effluent limitations may be relaxed as long as (1) the existing effluent limitation is based on a TMDL or other waste load allocation and (2) the cumulative effect of such revisions assures attainment of the water quality standard or the designated use is removed. This exception to the rule against backsliding allows permit limits to be relaxed if the cumulative effect of such revised effluent limitations will assure the attainment of the applicable water quality standard. However, if applicable water quality standards (including those revised pursuant to a de-designated beneficial use) have not been attained and there is no assurance that the standard will be achieved, no backsliding would be allowed. Chapter 10 section 10.8 of the Staff Report was revised to provide this explanation of anti-backsliding principles. Please see the response to comment 3.06 regarding implications to the North Coast Region (Region 1).	
	3.06	The Draft Provisions necessarily create a scenario that will lead to anti-backsliding throughout Region 1 and potentially other regions throughout the state. The State Water Board's Draft Provisions set an illness rate at 32 illnesses per 1,000 swimmers for E. coli criteria. However, Region 1 has an	Chapter 5 section 5.2.4 of the Staff Report has been revised to explain that the Staff Report released to the public on June 30, 2017, included Appendix C, which was intended to support the translation of the current	Yes

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		illness rate set at only 8 illnesses per 1,000 swimmers. Appendix C page D-178 of the Bacteria Provisions' Staff Report uses the equation from U.S. EPA's 1986 criteria document. If the median Fecal Coliform concentration is currently set at 50/100ml (R1 Basin Plan) then it converts to an equivalent for E. Coli which equates to an estimated illness rate in Region 1 Freshwaters at 8 per 1,000 people. Adopting the State Water Board's recommended Freshwater Water Quality Objective of 100 cfu/100 ml GM and 320 cfu/100 ml STV equates to illness rates of 32 per 1,000 recreationalists (this is 4 times as many illnesses). More to the point, Appendix C page D-178 specifically states "Region 1's illness rate is 2 times more stringent then the proposed illness rate". How can the State Water Board justify requiring the Bacteria Provisions' water quality objective when it admits Region 1 has an existing standard that is already twice as stringent? Requiring Region 1, and any other region with similarly stringent standards, to adopt the Bacteria Provisions' water quality objective constitutes illegal backsliding. If the Draft Provisions are adopted as currently proposed, Region 1 would be required to adopt the new standard of 32 illnesses per 1,000 swimmers into their Basin Plan, which will lead to such a standard being incorporated into Permits. That would be a direct violation of the anti-backsliding provisions because a standard of 32 illnesses compared to 8 is clearly less stringent. Similar to Tahoe, Region 1, and any other region with similarly more restrictive effluent standards, should not be required to weaken their effluent limitations to the Bacteria Provisions' water quality objective. Doing so would constitute illegal backsliding.	fecal coliform objective into *E.coli* and then utilize an equation provided within the 1986 U.S. EPA Ambient Water Quality Criteria for Bacteria to estimate an associated illness rate. This process has been deemed to be inappropriate and Appendix C to the Staff Report has been removed as discussed in response to comment 2.05. The Staff Report and Bacteria Provisions also included a site-specific water quality objective for Lake Tahoe based on the translation of the Lahontan Regions fecal coliform objective. For similar reasons, the site-specific water quality objective for Lake Tahoe has also been removed due to lack of adequate information supporting the applicability of the objective to public health and risk of illness due to activities defined by the REC-1 beneficial use. Chapter 5 section 5.2.4 of the Staff Report was also revised to explain that the current numeric fecal coliform bacteria objective in the North Coast Basin Plan is indicative of fecal coliform levels expected to be found in high quality coastal and mountain waters. (California Department of Health Services 1990). In other words, the fecal coliform objective is not related to a specific risk of illness associated with primary contact recreation (as may have been inferred from the analysis performed in Appendix C), but was established to provide protection against degradation. Consistent with the principles contained in the state and federal antidegradation policies, water quality is anticipated to be maintained in the North Coast region because North Coast Basin Plan also includes a narrative bacteria objective which states: "The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels." The use of this narrative objective will allow the North Coast Water Board to prevent the degradation of the water quality of their waters beyond natural background levels of bacteria. Section 10.7 of the Staff Report has been revised to clarify that the Bacteria Provisions generally would not	

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			result in a lower of water quality because the proposed objectives are generally more protective of public health than existing *E. coli* and enterococci objectives for the protection of REC-1 uses. Insofar as it is conceivable that the Bacteria Provisions' water quality objectives could effectuate a lowering of existing water quality in limited circumstances for a particular waterbody, such lowering is consistent with the maximum benefit of the people of the state, is reasonable protective of beneficial uses, and would protect the REC-1 use. The Bacteria Provisions will superseded the numeric fecal coliform objective in the North Coast Basin Plan, which is an outdated indicator that has been inappropriately used to determine if there is a risk to human health during water contact recreation. It is appropriate to use *E. coli* instead of fecal coliform because *E. coli* consistently performs well as an indicator of illness during epidemiological studies in fresh water, whereas fecal coliform does not. The protection against illness from bacteria and pathogens during water contact recreation is as critical in the North Coast Region as in the rest of the state and it is appropriate to apply the statewide bacteria water quality objectives to the region. Doing so maintains the project's overall goal of establishing consistent statewide bacteria objectives for all waters designated with the REC-1 use. The current fecal coliform objective in the Central Valley Basin Plan is a site-specific objective and will not be superseded by the Bacteria Provisions. (Part 3 of the ISWEBE, III.E.3.) In addition, the numeric objective found in the Lahontan Basin Plan is not tied to the REC-1 beneficial use and will not be superseded by the Bacteria Provisions. (Id., III.E.1, fn.1.) Please see the response to comment 3.05 regarding anti-backsliding.	
	3.07	THE STATE WATER BOARD SHOULD PROTECT AGAINST SINGLE DAY EXPOSURES BY REQUIRING A SINGLE SAMPLE MAXIMUM TO NOT TO BE	See response to comments 2.01, 3.03, 3.08, and 33.18. The Bacteria Provisions were developed in accordance	No

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		EXCEEDED. The State Water Board's Draft Provisions use two calculations to measure bacterial contamination, a geometric mean (GM) and a statistical threshold value (STV). The STV approximates the 95th percentile of a waterway's water quality sample distribution and is intended to be a value that may be exceeded by up to 10 percent of water quality samples. Accordingly, a waterway is not considered in violation of the criteria for bacteria until more than 10 percent of samples taken over the course of 30 days contain bacterial levels over the State Water Board's limits. The STV allows bacterial levels to repeatedly exceed pathogen exposure limits that the U.S. EPA and the State Water Board has determined to be unsafe. As a result, the STV fails to protect the public from acute and single-day exposures to harmful pathogens. Swimmers using beaches vulnerable to dangerous but short-lived fluctuations in water quality-caused by sewer overflows after rainstorms, for example-are especially at risk. These swimmers do not swim on an "average" day measured over a 30-day period, nor are they aware that they may be swimming on a day where a periodic exceedance is allowed; they swim on the single day they choose and, on that day, risk exposure to a variety of illnesses. The State Water Board has impermissibly interpreted its mandate to protect human health as permitting the agency to ignore the health risks faced by swimmers from daily exposures to pathogens. Similar to the U.S. EPA, the State Water Board's decision to not protect the public from acute pathogen exposure is contrary to the language and intent of the BEACH Act. Congress intended revised bacteria criteria to "protect human health" and improve, not degrade, the "inadequate" protections offered by the 1986 Criteria. The BEACH Act's legislative history demonstrates Congress's specific concern with the risks posed by single instances of pathogen exposure: This bill is addressing something that we have overlooked, and that is the fact that our children and our families can enter coastal waters on one day, for one moment, and contract diseases such as hepatitis, encephalitis, and different related illnesses related to pathogens. I have had surfers in my district actually get inner brain infections and almost die from one exposure. These are things that we need to address. The State Water board must protect against acute health risks from one-time exposures so that people are safe every time they swim. By declining to adopt day-of-use protections, the State Water Board has violated its nondiscretionary duty to establish criteria for the purpose of protecting human health.	with the U.S. EPA 2012 Recreational Water Quality Criteria, which is based on the most recent epidemiological studies to protect human health in coastal and non-coastal waters. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing California Ocean Plan because California-specific epidemiological studies provide data that suggest fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposure and environmental conditions. The Water Board will consider evaluating the fecal coliform water quality objective at a later date. Please also see Chapter 3 section 3.6 and Chapter 5 section 5.2.3 of the Staff Report, which discusses the beach notification levels contained in the Ocean Plan Amendment.	
	3.08	C. THE STATE WATER BOARD'S ACCEPTANCE OF 32 ILLNESSES PER 1,000 RECREATIONALISTS IS NOT PROTECTIVE OF HUMAN HEALTH. The State Water Board's proposed Bacteria Provisions include a set of values corresponding to a risk rate for gastrointestinal illness of 32 illnesses per 1,000 primary contact recreationalists in marine and fresh waters. The	The National Gastrointestinal Illness (NGI) risk rate of 32 illness per 1,000 recreators is equivalent to the previously used Highly Credible Gastrointestinal Illness (HCGI) risk rate of 8 illnesses per 1,000 recreators (U.S. EPA, 2012). The Staff Report Chapter 5 section 5.2.4	Yes

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		State Water Board has deemed it acceptable for 32 of every 1,000 recreationalists to become ill with gastroenteritis-including vomiting, nausea, or stomach ache--from swimming in waters that just meet the State Water Board's criteria values. The State Water Board's 32/1000 risk rate for illness is contrary to the record and not protective of human health. The State Water Board's reliance on the U.S. EPA is misplaced. The U.S. EPA's own epidemiological studies show that the likelihood of contracting swimming-associated gastrointestinal illnesses is statistically significant at the rate of 32 per 1,000 primary contact recreationalists. The State Water Board's Draft Provisions relies on the EPA's conclusions that failed to comply with the requirements of the APA. The State Water Board is required to "articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made." The Draft Provisions, however, are arbitrarily devoid of a rational explanation of what constitutes health protective levels and specifically lacks a discussion of how a 32/1000 illness rate protects human health. The State Water Board does not explain how the criteria are protective, if and how the agency arrived at a determination that they are in fact protective, why non-gastrointestinal illnesses can be protected by a proxy for gastrointestinal illnesses, or what standards were used to assess whether a given level of bacterial contamination is protective of human health. The State Water Board relies upon the EPA's explanation that the 2012 criteria levels are health protective because, according to the EPA, they are comparable to those in the 1986 Criteria which have a "history of acceptance by the public." EPA contends that the 2012 Criteria offer the same level of protection as its 1986 values because the revised criteria include a broader definition of gastrointestinal illness. However, in 1986, EPA concluded that a GM of 35 cfu/100ml would result in a risk of 19 cases of highly credibly gastrointestinal illness (HCGI) per 1,000 recreationalists (19/1000) in marine waters, and eight cases per 1,000 recreationalists (8/1,000) in freshwater. HCGI was defined to include vomiting, diarrhea with fever or a disabling condition, or stomachache or nausea accompanied by a fever. EPA's 2012 Criteria, as discussed above, endorse a risk rate of 32/1000 recreationalists, substantially higher than either the 19/1000 or 8/1000 rates required by the 1986 Criteria, based on a definition of gastrointestinal illness that includes diarrhea, stomachache, or nausea without the occurrence of fever. The U.S. EPA's reliance on a supposed public familiarity with a high risk of illness-and its failure to explain how the proposed 36/1000 and 32/1000 illness rates protect human health-is not rational. EPA has itself acknowledged that the selection of its 1986 risk rate was arbitrary: "[W]hile this level was based on the historically accepted risk, it is still arbitrary	explains the conversion as follows: "In 2012, U.S. EPA issued another report to determine the National Epidemiological and Environmental Assessment of Recreational Water – Gastrointestinal Illness rate (NGI). There was a fundamental change in the methodology for calculating the estimated illness rate as compared to the previous 1986 report. The estimated illness rate in the 1986 report termed gastrointestinal illnesses as highly credible gastrointestinal illness (HCGI) defined as "anyone of the following unmistakable or combinations of symptoms [within eight to ten days of swimming]: (1) vomiting (2) diarrhea with fever or a disabling condition (remained home, remained in bed or sought medical advice because of symptoms), (3) stomachache or nausea accompanied by a fever". The 2012 NEEAR report termed gastrointestinal illness as "any of the following [within ten to 12 days after swimming]: (a) diarrhea (three or more loose stools in a 24 hour period), (b) vomiting, (c) nausea and stomachache, or (d) nausea or stomachache and impact on daily activity," thus relaxing the definition of gastrointestinal illness to omit the requirement of fever. Data from previous and current epidemiological studies were assessed in the U.S. EPA 2012 Recreational Water Quality Criteria report to redefine the acceptable illness rate based on the new definition.in the U.S. EPA 2012 Recreational Water Quality Criteria report to redefine the acceptable illness rate based on the new definition." Section 4.0 of the 2012 U.S. EPA Recreational Water Quality Criteria document states that both the 32 illnesses per 1,000 recreators and the 36 illnesses per 1,000 recreators risk levels are protective of the designated use of primary contact recreation. U.S. EPA recommends that states make a risk management decision regarding illness rate to determine which set of criteria values (both a GM and related STV) to adopt into their water quality standards and that this risk management decision be applied statewide.	

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		insofar as the historical risk was itself arbitrary."). By relying on a translation of the 1986 criteria values into 2012 terms, EPA's revised criteria simply compounded this arbitrariness. The State Water Board is required to independently determine contamination levels that protect human health and articulate a rational explanation for its selection of those levels. It has failed to do so here.	During the development of the 2012 U.S. EPA Recreational Water Quality Criteria, a systematic review and meta-analysis of 27 non-U.S. EPA published studies evaluated the evidence linking specific microbial indicators of recreational water quality specific health outcomes under non-outbreak conditions. These studies concluded that: (1) good indicators of fecal contamination and demonstrated predictors of gastro intestinal illness in fresh waters are enterococci and E. coli, and enterococci in marine water, but not fecal coliform; and (2) the risk of gastrointestinal illness is considerably lower in studies where enterococci and *E. coli* densities were below levels established by U.S. EPA in 1986. In addition, as described in section 3.2.4 of the 2012 U.S. EPA Recreational Water Quality Criteria, data from U.S. EPA's fresh water National Epidemiological and Environmental Assessment of Recreational Water study indicated that swimmers exposed above an enterococci value of 33 cfu/100 mL had higher risks than non-swimmers or swimmers exposed below this value. The estimated illness rate of 36 illnesses per 1,000 recreators establishes a geometric mean value of 35 cfu/100ml of enterococci at a level higher than shown to be protective of recreation in fresh water. The estimated illness rate of 32 illnesses per 1,000 recreators establishes a geometric mean value of 30 cfu/100ml of enterococci, which is at a level that is below what has been shown to be protective of recreation in fresh water. Furthermore, as summarized in section 3.2.3 of the 2012 U.S. EPA Recreational Water Quality Criteria, the calculated equivalent value of 100 cfu/100ml of *E. coli* derived from the enterococci level of 30 cfu/100ml and associated with an illness rate of 32 illnesses per 1,000 recreators, is consistent with the threshold based on a randomized control trial epidemiological study performed in the European Union using completely different data and statistical methods. Because fecal coliform was not fully considered when developing the 2012 U.S. EPA Recreational Water Quality Criteria, as discussed in Staff Report section	

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			5.2.3, there is not a corresponding updated geometric mean and statistical threshold value with a corresponding illness rate to either 36 or 32 illness per 1,000 recreators for fecal coliform. Thus, the water quality objective for fecal coliform will be retained as currently written in the Ocean Plan. Therefore, the illness rate proposed by the Bacteria Provisions is the more protective of the two illness rates provided within the U.S. EPA 2012 Recreational Water Quality Criteria and is based on the most comprehensive epidemiological studies designed to protect public health during water contact recreation in both coastal and non-coastal waters. Chapter 5 section 5.2.4 of the Staff Report was revised to provide this additional justification. Please also see response to comment 33.18.	
	3.09	D. THE STATE WATER BOARD SHOULD NOT PROCEED WITH A VARIANCE POLICY, AND IF IT DOES, IT SHOULD BE EXTREMELY LIMITED IN SCOPE AND FULLY COMPLY WITH THE CLEAN WATER ACT. The Bacteria Provisions refer to the federal regulatory mechanism for adopting a Water Quality Standard Variance to allow for additional implementation actions applicable to all pollutants and water segments consistent with 40 Code of Federal Regulations section 131.14. To strictly comply with the Clean Water Act's (CWA) requirement to protect all beneficial uses, California should not allow for water quality standard (WQS) variances. WQS variances cause pollution hotspots and will delay reasonably available actions necessary to clean up waterbodies. If the State Water Board proceeds with variances, we advise they be extremely limited in scope and fully comply with the CWA, federal regulations, the Porter-Cologne Act, and State Policy. Sound interpretation and implementation of the CWA through State rulemaking is essential to restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. Water quality standards are the core regulations under the CWA that the public depends on to ensure our nation's waters are swimmable, drinkable and fishable. Any modification to WQSs must be undertaken with extreme care to ensure that there will be no weakening of CWA protections for human health and the environment. Implementation of the comprehensive scheme of the CWA is the best means for achieving fishable, swimmable, and drinkable	A WQS variance is allowed under 40 Code of Federal Regulations section 131.14. The Bacteria Provisions identify the federal regulation as one implementation option available for the State and Regional Water Boards to utilize when regulating water quality. The Provisions' reference to the federal regulation does not establish any variance. Neither do the Provisions purport to establish a variance policy insofar as the reference to the federal variance framework does not operate as enabling authority; rather, the Provisions refer to the existing regulatory scheme currently available to the Water Boards to utilize. Finally, altering the promulgated requirements of the federal rule is not within the scope of the Bacteria Provisions. The Bacteria Provisions state that federal regulations establish the explicit regulatory framework for the adoption of a Water Quality Standards Variance that states may use to implement adaptive management approaches to improve water quality (40 C.F.R. §131.14). As a result, a Water Board may adopt a Water Quality Standard Variance in accordance with the federal rule. Under the federal rule, a WQS	No

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		waters in California during our lifetimes, and creation of programs for variances from that scheme may delay achievement of those goals indefinitely. Since 1977, EPA has officially allowed variances as long as they are "adopted consistent with the substantive and procedural requirements for permanently downgrading a designated use," i.e. based on the factors in 40 C.F.R. §131.10(g). EPA defined a variance as "the practice of temporarily downgrading the WQS as it applies to a specific discharger rather than permanently downgrading an entire water body or water body segment(s)." Under existing variance guidance, a "discharger who is given a variance for one particular constituent is required to meet the applicable criteria for all other constituents. The variance is given for a limited time period and the discharger must either meet the WQS upon the expiration of this time period or the state or tribe must adopt a new variance or re-justify the current variance subject to EPA review and approval." The State Water Board should prohibit variances because they will not assist in the nation's goal of restoring the chemical, physical and biological integrity of our waterways by July 1st, 1983. If the State Water Board does proceed with its Variance Policy, the Board should allow a variance only if it is consistent with the substantive and procedural requirements of permanently downgrading a designated use – including compliance with the Antidegradation and Antibacksliding Policies. The State Water Board should limit the scope of the variance for specific dischargers rather than an entire water body; and any variance should be for as short a time as possible with reevaluation every three years. Finally, a discharger under a variance should be required to demonstrate that it is meeting the WQS at the end of the variance period.	variance may be adopted for a permittee or water body but only applies to the permittee or water body specified in the variance. (*Id*., § 131.14(a).) Furthermore, after adoption by the State Water Board the WQS variance must be approved by U.S. EPA. Thus, all state and federal regulations must be complied with and followed in order for application of WQS variance. Properly applied, a WQS variance can lead to improved water quality over the duration of the WQS variance and, in some cases, full attainment of designated uses due to advances in treatment technologies, control practices, or other changes in circumstances, thereby furthering the objective of the Clean Water Act. U.S. EPA explains in the preamble to the federal rule (at 80 Fed. Reg. 51035, 2d col. (Aug. 21, 2015)): "While EPA has long recognized WQS variances as an available tool, the final rule provides regulatory certainty to states and authorized tribes, the regulated community, and the public that WQS variances are a legal WQS tool. The final rule explicitly authorizes the use of WQS variances and provides requirements to ensure that WQS variances are used appropriately. Such a mechanism allows states and authorized tribes to work with stakeholders and assure the public that WQS variances facilitate progress toward attaining designated uses. When all parties are engaged in a transparent process that is guided by an accountable framework, states and authorized tribes can move past traditional barriers and begin efforts to maintain and restore waters." The preamble to the federal rule (at 80 Fed. Reg. 51035, 3d col. (Aug. 21, 2015)) continues: "EPA's authority to establish requirements for WQS variances comes from CWA sections 101(a) and 303(c)(2). This rule reflects this authority by explicitly recognizing that states and authorized tribes may adopt time limited WQS with a designated use and criterion	

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			reflecting the highest attainable condition applicable throughout the term of the WQS variance, instead of pursing a permanent revision of the designated use and associated criteria. WQS variances serve the national goal in section 101(a)(2) of the Act and the ultimate objective of the CWA to restore and maintain the chemical, physical, and biological integrity of the Nation's waters because WQS variances are narrow in scope and duration and are designed to make progress toward water quality goals. When a WQS variance is in place, all other applicable standards not addressed in the WQS variance continue to apply, in addition to the ultimate water quality objectives (*i.e.,* the underlying WQS). Also, by requiring the highest attainable condition to be identified and applicable throughout the term of the WQS variance, the final rule provides a mechanism to make incremental progress toward the ultimate water quality objective for the water body and toward the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters."	
	3.10	1. The State Water Board should not provide water quality variances because they will not assist in restoring the chemical, physical and biological integrity of California's waters. There is no support for the proposition that the adoption of less protective water quality standards assists in restoring the chemical, physical and biological integrity of the state's waters. According to 40 C.F.R. §131.2: A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States adopt water quality standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (the Act). ''Serve the purposes of the Act'' (as defined in sections 101(a)(2) and 303(c) of the Act) means that water quality standards should, wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation. [Emphasis added] The CWA, EPA's implementing regulations, and EPA's Water Quality Standards Handbook have long required protection of both 101(a)(2) uses (protection and propagation of fish, shellfish, and wildlife, and recreation in	Comment noted. Additionally, see response to comment 3.09. Establishing a variance would not operate to establish less protective water quality standards for a waterbody. The federal regulation provides, at 40 CFR § 131.14 (a)(2)-(4): "Where a State adopts a WQS variance, the State must retain, in its standards, the underlying designated use and criterion addressed by the WQS variance, unless the State adopts and EPA approves a revision to the underlying designated use and criterion consistent with §§ 131.10 and 131.11. All other applicable standards not specifically addressed by the WQS variance remain applicable. "A WQS variance, once adopted by the State and approved by EPA, shall be the applicable standard for purposes of the Act under § 131.21(d) through (e), for the following limited purposes. An approved WQS	No

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		and on the water) and 303(c)(2) uses (public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation). CWA Section 101(a)(2) provides that "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983." CWA Section 303(c)(2) establishes a longer-term requirement that water quality "standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation." States are required to adopt "[u]se designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the Act." Further, 40 C.F.R. §131.10(a) similarly requires that "[e]ach State must specify appropriate water uses to be achieved and protected. The classification of the waters of the State must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation." The CWA provides extensive mechanisms for the state to utilize in addressing impaired waters, and these provisions, when fully implemented, actually move states forward in addressing waterbodies that are not meeting water quality standards. Variances, on the other hand, simply reduce water quality protection for a set time period, and do not assist states in meeting water quality standards. The use of variances by states will tend to delay actions necessary to clean up waterbodies, such as Total Maximum Daily Load ("TMDL") development and implementation. Development and implementation of TMDLs is already delayed across California, and the State Water Board should not adopt any regulation that will interfere with efforts to address impaired waters. The TMDL and permitting process are the proper methods for dealing with waters that are not meeting WQSs. Permittees that cannot comply with these requirements may obtain compliance schedules that include reasonable timelines and an enforceable sequence of actions that will bring them into compliance as described below. Given this approach to addressing impaired waters, which was developed and approved by Congress in the CWA, it is unclear why variances are necessary at all. As a national leader in environmental protection, California should choose not to allow for WQS variances. First, variances essentially allow for "sacrifice zones" in our waters, where the State condones turning a blind	variance applies for the purposes of developing NPDES permit limits and requirements under 301(b)(1)(C), where appropriate, consistent with paragraph (1) of this section. States and other certifying entities may also use an approved WQS variance when issuing certifications under section 401 of the Act. "A State may not adopt WQS variances if the designated use and criterion addressed by the WQS variance can be achieved by implementing technology-based effluent limits required under sections 301(b) and 306 of the Act." The federal regulation also specifies, at § 131.14(b)(2)(A)-(B): "For a WQS variance to a use specified in section 101(a)(2) of the Act or a sub-category of such a use, the State must demonstrate that attaining the designated use and criterion is not feasible throughout the term of the WQS variance because: "One of the factors listed in § 131.10(g) is met, or "Actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented. "For a WQS variance to a non-101(a)(2) use, the State must submit documentation justifying how its consideration of the use and value of the water for those uses listed in § 131.10(a) appropriately supports the WQS variance and term. A demonstration consistent with paragraph (b)(2)(i)(A) of this section may be used to satisfy this requirement." Often times there is confusion between a WQS variance and NPDES permit compliance schedules. WQS variances may address situations where it is known that a designated use and objective are unattainable today	

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		eye to exceedances of WQS. Unfortunately, in practice, we know that pollution hot spots, which a variance would result in, often occur in environmental justice communities that are already over-burdened with pollution. There is nothing in the federal regulations or the State Water Board's proposal that would prohibit variances in environmental justice communities. Second, variances should not be permitted, as doing so would lead to an uneven playing field and economic advantages for some dischargers as compared to others and an; every discharger should have to comply with the WQS. Third, granting a WQS variance for a water body or a segment of a water body is unnecessary and contrary to specific requirements in the CWA. CWA section 303(d) already provides a mechanism to get water bodies that do not attain WQS back in compliance. Granting a variance to a water body undermines this specific statutory process. There is no support for the proposition that the adoption of less protective water quality standards assists in restoring the chemical, physical and biological integrity of the Nation's waters. We believe the State Water Board should prohibit the use of variances.	but progress can be made to attaining them. Generally, a permit compliance schedule is granted when a permittee needs additional time to comply to modify or upgrade treatment controls to meet effluent limitations.	
	3.11	2. The State Water Board should only allow a variance that is consistent with the substantive and procedural requirements for permanently downgrading a designated use. Variances from WQS do not comply with the CWA's strict requirement to adopt and enforce WQS to protect all beneficial uses. However, federal regulations currently allow states to adopt WQS variances if they comply with or are more stringent than the requirements in 40 C.F.R. §131.13. This section currently provides that "[s]tates may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to EPA review and approval." If the State Water Board proceeds with variances, they should only be allowed in limited circumstances and the WQS must meet the requirements for permanently downgrading a designated use. According to the Water Quality Standard Handbook, EPA allows variances as long as: · Each individual variance is included as part of the water quality standard; · The State demonstrates that meeting the standard is unattainable based on one or more of the grounds outlined in 40 CFR 131.10(g) for removing a designated use; · The justification submitted by the State includes documentation that treatment more advanced than that required by sections 303(c)(2)(A) and (B) has been carefully considered, and that alternative effluent control strategies have been evaluated; · The more stringent State criterion is maintained and is binding upon all	See responses to comments 3.09 and 3.10. The Bacteria Provisions do not vary, limit, or enlarge the requirements of the federal rule necessary for U.S. EPA to approve a WQS variance consistent with the federal rule.	No

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		other dischargers on the stream or stream segment; · The discharger who is given a variance for one particular constituent is required to meet the applicable criteria for other constituents; · The variance is granted for a specific period of time and must be justified upon expiration but at least every 3 years (Note: the 3-year limit is derived from the triennial review requirements of section 303(c) of the Act.); · The discharger either must meet the standard upon the expiration of this time period or must make a new demonstration of "unattainability"; · Reasonable progress is being made toward meeting the standards; and · The variance was subjected to public notice, opportunity for comment, and public hearing. (See section 303(c)(l) and 40 CFR 131.20.) The public notice should contain a clear description of the impact of the variance upon achieving water quality standards in the affected stream segment. Any variance must meet all of those specific requirements. EPA's longstanding interpretation is that variances should only be allowed if they are "adopted consistent with the substantive and procedural requirements for permanently downgrading a designated use," i.e. based on the factors in 40 C.F.R. §131.10(g). This section requires the State to prepare a "use attainability analysis" showing that a water body cannot attain a use because of one of six factors listed. Until very recently, EPA has applied this requirement for a variance of any WQS; however, EPA has recently changed this policy to only require a use attainability analysis for variances to a use specified in CWA section 101(a)(2), i.e., "protection and propagation of fish shellfish, and wildlife" and "recreation in and on the water." For all other uses, including public drinking water supplies, the State need only demonstrate that the use and value was considered. The State Water Board should require that all variances be adopted consistent with the substantive and procedural requirements for permanently downgrading a designated use," i.e. based on the factors in 40 C.F.R. §131.10(g).		
	3.12	3. The State Water Board should limit the scope of the Variance Policy to allow only for variances to WQS for specific dischargers rather than an entire water body. Under Section 303(c), water quality standards "shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation." A Water Board should not allow for a downgrading of water quality standards for all permittees, for an entire water body or for specific pollutants without regard to the impact public health or designated uses.	See responses to comments 3.09 through 3.10. A WQS Variance does not disturb or remove the underlying designated use. The federal variance rule specifies that a variance would not be approved and may not be established by a state if the designated use at issue in the variance can be achieved by implementing effluent limits required under sections 301 and 306 of the Clean Water Act.	No

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		The proposed Variance Policy will increase the use of variances to avoid taking actions that are reasonably available to address water quality impairments. The CWA provides extensive mechanisms for the State to utilize in addressing impaired waters, and these provisions, when fully implemented, actually move us forward in addressing waterbodies that are not meeting water quality standards. Variances, on the other hand, simply reduce water quality protection for a set time period, and do not assist the State in meeting water quality standards. If Water Boards do adopt variances, it should only allow for variances for specific dischargers, rather than variances for water bodes or segments thereof. A variance for a water body contradicts the specific requirements in CWA section 303(d) and undermines the TMDL process. It is unclear how the two process would, in fact, work together. A variance does not excuse a WQS for purposes of a State's compliance with 303(d). Therefore, if the State did approve a WQS variance for a particular water body, the State would still need to list that water body as impaired and begin the TMDL process. These processes clearly contradict one another. Moreover, a variance for a water body, unlike the TMDL, excuses compliance with the WQS but does not provide a plan to come into attainment. In all likelihood, the water body will still be out of attainment at the end of the variance period. Historically, EPA allowed variances only for discharges, defining a variance as "the practice of temporarily downgrading the WQS as it applies to a specific discharger rather than permanently downgrading an entire water body or water body segment(s)." Under existing variance guidance, a "discharger who is given a variance for one particular constituent is required to meet the applicable criteria for all other constituents. The variance is given for a limited time period and the discharger must either meet the WQS upon the expiration of this time period or the state or tribe must adopt a new variance or re-justify the current variance subject to EPA review and approval." While we do not fully agree with a discharger-specific variance, it does not create the same conflicts with specific processes in the CWA. The State Water Board should limit the scope of variances to the practice of temporarily downgrading the WQS as it applies to a specific discharger rather than downgrading an entire water body or water body segment(s).	The adoption of a waterbody-specific variance would not allow for a downgrading of water quality standards as commenter suggests. That is, a variance is not allowable in circumstances where reasonable and available actions may address water quality impairments. A variance, whether waterbody- or discharger-specific, may not be established unless one of the six factors identified in 40 CFR § 131.10(g) or on the basis of the new restoration-related factor in § 131.14(b)(2)(i)(A)(2). If the underlying designated use is attainable, it is not appropriate for the state to adopt a variance. If a permittee is unable to immediately meet a water quality based effluent limitation, the permitting entity may establish a compliance schedule consistent with § 122.47 and State Water Board authority and policies. The federal rule specifies that a variance may not be established without documentation that describes the pollutant control activities through a Pollutant Minimization Program. (40 CFR § 131.14(b)(2)(ii).) A Pollutant Minimization Program is defined at section 131.3(p) as follows: "Pollutant Minimization Program, in the context of § 131.14, is a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings." Additionally, for a waterbody-specific variance, the state must identify best management practices for nonpoint sources controls related to the pollutant specified in the variance that could be implemented to make progress towards attaining the underlying designated use and criterion. (40 CFR § 131.14(b)(2)(iii).) Designated uses would continue to be assessed to determine whether applicable designated water quality standards are met. If a waterbody is deemed impaired, the need to develop a TMDL or TMDL equivalent is not obviated. The federal rule provides (40 CFR § 131.14(b)(2)(ii)-(iii), (c)):	

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			(ii) Documentation demonstrating that the term of the WQS variance is only as long as necessary to achieve the highest attainable condition. Such documentation must justify the term of the WQS variance by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance. **(iii)** In addition to paragraphs (b)(2)(i) and (ii) of this section, for a WQS variance that applies to a water body or waterbody segment: **(A)** Identification and documentation of any cost-effective and reasonable best management practices for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and water body or waterbody segment(s) specified in the WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion. A State must provide public notice and comment for any such documentation. **(B)** Any subsequent WQS variance for a water body or waterbody segment must include documentation of whether and to what extent best management practices for nonpoint source controls were implemented to address the pollutant(s) or water quality parameter(s) subject to the WQS variance and the water quality progress achieved. **(c)***Implementing WQS variances in NPDES permits.* A WQS variance serves as the applicable water quality standard for implementing NPDES permitting requirements pursuant to § 122.44(d) of this chapter for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as	

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			enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance.	
	3.13	4. The State Water Board should make variances as short as possible and reevaluate them every three years during triennial reviews. WQS variances must only be as long as necessary, and the EPA requires that any term greater than five years needs to be revaluated. However, the State Water Board should review any variance at least every three years as mandated by Section 303(c) for all water quality standards. The State Water Board should not excuse a WQS seasonally. It is our understanding that the proposed Variance Policy is to accommodate cities that want a variance for Rec-1 standards during the rainy months due to bacteria runoff from stormwater. It is important to note that the federal variance regulations do not allow excusing a WQS for a certain period of the year every year or seasonally. The regulations require compliance with the WQS at the end of the variance period. When approving variances the State Water Board should require a mechanism by which dischargers or waterbodies will meet the WQS by the end of the variance period. Additionally, the discharger or the water body must meet the highest attainable condition during the variance period; at the end of the variance period, the discharger or water body must meet the WQS.	See responses to comments 3.09 through 3.10. As noted in the definition of the term WQS variance in the Bacteria Provisions, a WQS variance is a time-limited designated use and criteria for a specific pollutant(s) or water quality parameter(s) that reflects the highest attainable condition during the term of the WQS variance. The term of the WQS variance is only as long as necessary to achieve the highest attainable condition and the WQS variance must be reevaluated at least every five years with public input. The five year reevaluation requirement is reasonable and consistent with NPDES permit terms. Additionally, the WQS variance requires interim attainment of the highest attainable condition of the water body in order to ensure no degradation. For CWA 101(a)(2) uses, the variance must identify at least one of the six factors listed in 40 CFR 131.10(g) or justify restoration or reconfiguration activities. For non-CWA 101(a)(2) uses, justification must demonstrate that the use and value was considered.	No
	3.14	5. The State Water Board must comply with the Antidegredation and Antibacksliding Policies when adopting a variance. According to the State Water Board's Administrative Procedures Update 90, the Regional Boards must consider the need to include a finding that specifies that water quality degradation is permissible when balanced against benefit to the public of the activity in question. The determination as to whether a finding is needed must be made when issuing, reissuing, amending, or revising an NPDES permit. When adopting any variance, the Water Boards must make findings that specifically state that the Regional Board has considered antidegredation pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16 and finds that the permitted discharge is consistent with those provisions. If the Regional Board finds that a variance is consistent with the conditions established in the State policy and the federal regulation, the findings should indicate: (1) The pollutants that will lower water quality; (2) The socioeconomic and public benefits that result from lowered water	See response to comment 3.09 and 3.12. The Bacteria Provisions are not proposing a WQS variance and therefore is not required to analyze how a proposed variance will comply with antidegradation and anti-backsliding policies. If a Regional Water Board were to undertake the existing regulatory process under 40 CFR 131.14 to establish a WQS variance they would be required to comply with all applicable state and federal regulations. The anti-backsliding policy does not allow the relaxation of permit limits currently being attained by a discharger. If a permit limit is being met, then a variance is not needed and would not be allowed under 40 CFR 131.14. If the permit limit is not being met, and a WQS variance is granted for the discharger, the	No

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		quality; and (3) The beneficial uses that will be enacted. Moreover, the CWA contains "anti-backsliding" provisions that prohibit relaxation of permit terms upon renewal. The CWA requires that, for effluent limitations based on a state water quality standard, "a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit," unless certain exceptions apply. It also states that "[i]n no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of [water quality standards]." In order to comply with the CWA, federal regulations, and State policy, the State Water Board shall evaluate any proposed variance in compliance with the Antidegradation and Antibacksliding Policies.	issuance of the new limits would have to comply with the policies of anti-backsliding and antidegradation.	
	3.15	THE STATE WATER BOARD CANNOT DESIGNATE A WATER BODY AS LIMITED RECREATION WITHOUT PERFORMING A USE ATTAINABILITY ANALYSIS THAT INCLUDES CONSIDERATION OF DOWNSTREAM WATER QUALITY. The Bacteria Provisions would establish a definition for a beneficial use where recreational uses of a water body are limited (LREC-1). The LREC-1 definition allows a beneficial use designation that recognizes that body contact is limited in the water body due to physical conditions, such as restricted access and very shallow depths. The state has waterbodies that have been channelized, and/or lined with concrete or other materials that protect the channel from erosion and provide flood protection. The CWA, EPA's implementing regulations, and EPA's Water Quality Standards Handbook have long required protection of both 101(a)(2) uses (protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water) and 303(c)(2) uses (public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation). There is no sound legal or policy basis for providing less stringent protections for existing beneficial uses. Allowing a Regional Board to remove an existing designation in the circumstances permitted by the Draft Bacteria Provisions is inconsistent with Section 101 (restore and maintain the chemical, physical, and biological integrity of the Nation's waters) and Section 303 of the CWA (adopt WQS to protect public health or welfare, enhance the quality of water, taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes). It is also inconsistent with historic interpretations and other existing EPA regulations, such as 40 C.F.R. §131.6 (a)(States are required to adopt "[u]se designations consistent with	The Bacteria Provides do not designate any water bodies with the Limited Water Contact Recreation (LREC-1) beneficial use. Instead, Part 3, Section II of Part 3 the ISWEBE of the Bacteria Provisions provides a consistent definition which can be utilized by a Regional Water Board for applicable waters. Section IV.E.5. of Part 3 of the ISWEBE provides the applicable mechanism by which a Water Board may subsequently designate a water body with the LREC-1 beneficial use. Existing beneficial uses may not be removed. (40 CFR 131.10(g).) If a Regional Water Board were to seek to remove a REC-1 use (that is a potential use and not an existing use) and designate a water body with the Limited Water Contact Recreation (LREC-1) beneficial use that requires a less stringent water quality objective, it must complete a use attainability analysis (UAA) under 40 Code of Federal Regulations section 131.10 (g). Simply fencing a water body, lining it with concrete, or restricting flows, would not meet the requirements of the UAA. Furthermore, the documentation supporting the designation of LREC-1 must take into account downstream beneficial uses consistent with 40 Code of Federal Regulations section 131.10(b).	Yes

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		the provisions of sections 101(a)(2) and 303(c)(2) of the Act." and 40 C.F.R. §131.12 (a)(1) (Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected).	A Water Board's designation of LREC-1 would require a full basin plan amendment process satisfying all applicable public participation requirements and requiring adoption by the Regional Water Board and approval by the State Water Board and U.S. EPA. (See Water Code §§ 13240-13246). As noted in Chapter 4 of the Staff Report, California encompasses a wide variety of geographic, hydrographic and climatological conditions. Population also varies widely from region to region. These variables can impact flow and channel design as well as frequency of access to water bodies. The Regional Water Boards are uniquely knowledgeable about their conditions and able to address such variables through site specific UAAs or Categorical UAAs at their discretion. Lastly, Section II of the Bacteria Provisions for Part 3 of the Inland Surface Water Enclosed Bays and Estuaries Plan, which contains the definition of the LREC-1 beneficial use, and Chapter 5 section 5.1.1., were revised for clarity to remove the examples of low water depth and fencing. The language regarding very shallow water depth or restricted access was originally included in order to provide examples of physical conditions that might lead to limited and insignificant body contact recreation or water ingestion and such inclusion was not to suggest that such a condition was by itself sufficient for such designation.	
	3.16	1. The State Water Board must perform a Use Attainability Analysis before allowing waterways to be downgraded to Limited Rec-1. Once a use of a water body has been designated, states develop criteria to protect those uses, which then serve as the fundamental basis for protecting, maintaining and improving state water quality under the CWA. These designated uses cannot be removed from the states' water quality standards except in limited circumstances set forth in the existing EPA water quality regulations, including the requirements for UAAs. For example, states may not remove any designated use without conducting the analysis described in 40 C.F.R. § 131.10(g). The CWA is a "comprehensive water quality statute designed to 'restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'" Pursuant to CWA Section 303, California must adopt and implement water quality standards to protect navigable waters within its	See response to comment 3.15. The federal regulation that implements the Clean Water Act specifies at 131.10 when a UAA must be performed. The Bacteria Provisions do not purport to vary what federal law requires to implement the Clean Water Act. A UAA would be required for the removal of the REC-1 beneficial use under 40 Code of Federal Regulations 131.10(J) because REC-1 is a Clean Water Act section 101(a)(2) use and a LREC-1 use designation may require less stringent water quality objectives than that previously applicable.	No

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		borders, subject to oversight and approval by the EPA. According to EPA: A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water, by setting criteria necessary to protect the uses, and by preventing degradation of water quality through antidegradation provisions. States adopt water quality standards to protect public health or welfare, enhance the quality of water, and serve the purposes of the Clean Water Act. The CWA requires that WQSs be "established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation." Water quality standards are the core regulations under the CWA that the public depends on to ensure our nation's waters are swimmable, drinkable and fishable. Any modification to water quality standards must be undertaken with extreme care to ensure that there will be no weakening of CWA protections for human health and the environment. Once a use has been designated, the use cannot be removed if it is an existing use unless a use requiring more stringent criteria is added, and other designated uses cannot be removed unless the use is demonstrated not be to attainable and the requirements in 40 C.F.R. §131.10(g) are satisfied. Section 101(a)(2) uses are presumed attainable unless a state or tribe affirmatively demonstrates through a UAA that 101(a)(2) uses are not attainable as provided by one of six regulatory factors at Section 131.10(g). All uses are deemed to be "attainable, at a minimum, if the uses can be achieved (1) when effluent limitations under section 301(b)(1)(A) and (B) and Section 306 are imposed on point source dischargers, and (2) when cost-effective and reasonable best management practices are imposed on nonpoint source dischargers." Under the existing 40 C.F.R. §131.10(j), states "must conduct a use attainability analysis ["UAA"]. . .whenever: (1) the State designates or has designated uses that do not include the uses specified in section 101(a)(2) of the Act; or (2) the State wishes to remove a designated use that is specified in section 101(a)(2) of the Act or adopt subcategories of uses specified in section 101(a)(2) that require less stringent criteria." [emphasis added]. A UAA is "a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in § 131.10(g)." The only existing exception to the UAA requirement is for designation of 101(a)(2) uses. The CWA requires the State Water Board to perform a use attainability analysis when removing a designated use. 40 CFR 131.10(j) requires California to conduct a "use attainability analysis…whenever:		

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		(2) The State wishes to remove a designated use that is specified in section 101(a)(2) of the Act, to remove a sub-category of such a use, or to designate a sub-category of such a use that requires criteria less stringent than previously applicable. By allowing Regional Boards to de-list a water body for Rec-1 and replace it with Limited Rec-1, the State Water Board is removing a designated use that is specified in section 101(a)(2) of the CWA. Therefore the State Water Board is required to conduct a Use Attainability Analysis before allowing waterbodies to be de-listed and replaced with LREC-1.		
	3.17	2. The State Water Board must perform a Use Attainability Analysis that includes consideration of downstream water quality. The State Water Board needs to perform a UAA that considers downstream water quality. In justifying the use of LREC-1, the State Water Board states that: In some cases these waterbodies have been fenced to limit contact with the waterbodies during storm events to protect the public from drowning, while in dry weather the water flow is non-existent or very low. Due to these restrictions, contact with the water is minimal and incidental ingestion is infrequent or unlikely. Under these conditions the REC-1 beneficial use is not an accurate description of the beneficial use of the water body. Regardless of whether a particular segment of a water body might not be used for recreation, the State Water Board needs to consider the impact on downstream water quality. 40 CFR 131.10(b) requires water quality standards of downstream waters must be considered and maintained. 40 CFR 131.10(b) states: In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters. The record is void of any analysis of whether downstream water quality standards will be attained if upstream segments are de-listed to LREC-1. Before allowing Regional Boards to de-list REC-1 beneficial uses, the State Water Board must do a UAA that considers the ability for downstream waterways to attain and/or maintain their water quality standards.	See response to comment 3.15.	No
	3.18	3. The State Water Board should consider the unanticipated consequences of allowing a Limited Rec – 1 Beneficial Use while California is striving to restore their urban watersheds. Allowing a Limited Recreational beneficial use will only encourage communities to channelize and concrete their waterways. This would be antithetical to California's drive to restore our urban waterways. The State	As stated in the response to comment 3.15, a LREC-1 designation requires a UAA, which requires the development of bacteria water quality objectives for the protection of the LREC-1 use. Bacteria water quality objectives that are developed for the LREC-1 use may be less stringent than those for REC-1 use because	Yes

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		Water Board should consider the unanticipated consequences of lowering a water quality standard for waterways that are channelized. The past decades brought a remarkable increase in river and watershed restoration in California, including urban river conservation in urban Los Angeles. Increasing attention to integrating natural resources protection and public recreation and use has spurred important changes in many different governmental and nongovernmental contributions. California has been fertile ground for river and watershed restoration for over the past three decades, and efforts in the state are among the most numerous and most advanced in the United States. California is home to multiple state-funded restoration programs evolved from diverse legislative mandates, ballot initiatives, and citizen-sponsored programs. Restoring urban waterways provides multiple benefits that address wetlands, streams, water quality, ecosystems, and habitat. In coastal Southern California, including the Los Angeles basin, there are many different efforts at river and watershed planning and implementation under way (SCWRP 2012). These efforts are long term, in some cases going back three decades, focused on the restoration and revitalization of the Los Angeles River and its tributaries, the adjacent San Gabriel River and its tributaries—both draining to San Pedro Bay, and watersheds, creeks and streams draining into Santa Monica Bay. Numerous cities across the United States have implemented highly successful riverfront projects that have revitalized adjacent communities. Success stories include, for example, the San Antonio Riverwalk which has been the catalyst of over $2.8 billion in tourism for the City of San Antonio and the Brush Creek Cultural Corridor in Kansas City which has generated more than $750 million in new development. The movement to restore our urban waterways is critical. Yet the Draft Provisions will only incentivize communities to further fence off, and channelize their urban creeks and streams so they can receive the LREC-1 designation. Before allowing communities to further degrade their urban waterways, the State Water Board should consider the unanticipated consequences of allowing a LREC-1 beneficial use. Furthermore, the State Board should consider the indirect impacts on access resulting from having a new LREC-1 use. The Bacteria Provisions' Staff Report nor any other supporting CEQA documentation does not address this potential for negative impacts on access. Therefore, the SED is inadequate and needs revision and development of feasible alternatives and mitigation. The State Water Board should look in particular at partially or fully concretized waterways, and evaluate how to keep access expanding in the face of a standard that seems designed to limit access.	the risk of ingestion is lower for LREC-1 waters than with REC-1 waters. However, the bacteria water quality objectives developed for the LREC-1 use would require consideration of impacts on downstream uses consistent with 40 Code of Federal Regulations section 131.10(b). A LREC-1 designation could not be based on the existence of fencing or limited access alone but rather would require demonstrating that the REC-1 use is not feasible because of at least one of the six factors listed under 40 Code of Federal Regulations section 131.10 (g). The addition of a definition for LREC-1 to the ISWEBE Plan does not warrant an in-depth analysis of the potential impacts of waters designated with LREC-1 in the future. The in-depth analysis requested by the commenter would be undertaken by the UAA and basin plan amendment process required for designation of the LREC-1 use. The Provisions contain a brief discussion of regulatory tools currently available to the Water Boards to utilize to regulate water quality and implement water quality standards applicable to the state's water bodies. The Bacteria Provisions describe what existing law already allows the Water Boards to undertake. The provisions acknowledge that the Water Boards may remove the REC-1 use or designate the LREC-1 use or both, consistent with state and federal law, as applicable. In so doing the Bacteria Provisions do not establish new authority as it relates to these implementation tools. The definition that is contained in the Bacteria Provisions for LREC-1 does not create any environmental impact. The definition may be used by Regional Water Boards subsequent to the adoption of the Bacteria Provisions to appropriately describe existing and potential uses of limited recreation as the boards undertake a basin planning process to designate any water body with the LREC1 use. Further, any existing REC-1 beneficial use could not be removed by	

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			fencing or otherwise obstructing access because 40 CFR 131.14 does not permit the removal of an existing use. Section 2.3.3 of the Staff Report was revised to provide additional clarity.	
	3.19	The State Water Board believes it is acceptable for 32 in 1,000 swimmers—that's 1 in 31 swimmers—to become ill with gastroenteritis sicknesses such as diarrhea, nausea and vomiting, from swimming in water that just meets EPA's water quality criteria. This risk is unacceptably high and is not protective of human health. Our organization looks forward to working with you to ensure the Bacteria Provisions are amended in compliance with the Clean Water Act.	See response to comment 3.08.	No
California Stormwater Quality Association Representative: Jill Bicknell	4.01	Comment 1: Clarify that the proposed WQOs are based on a protective level of risk. USEPA's 2012 Criteria were developed based on epidemiological studies that linked the health risk associated with recreational water use to concentrations of indicator bacteria. USEPA identified acceptable estimated gastrointestinal illness rates protective of REC-1 uses, which were then associated with specific indicator bacteria concentrations. Although the risk levels were the driver for selecting appropriate indicator levels, the only mention of risk level in both the ISWEBE and Ocean Plan Provisions occurs in the header of the WQOs table. The Staff Report includes some minor discussion of risk but nowhere is the relationship between the proposed risk level and WQOs adequately described. Since the risk level is the driving mechanism to protect human health, it should be clearly described in the Bacteria Provisions and Staff Report. The ultimate goal of recreational water quality improvement programs is to reduce risk of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. Incorporating a risk discussion into the Bacteria Provisions and Staff Report will allow the amendments to be adaptable to the evolving science in the event that a better indicator becomes available. Thus, CASQA requests that the State Water Board include a discussion within the Bacteria Provisions of the risk-level basis of the E. coli and Enterococci numeric criteria, and acknowledge that the fecal indicator-based criteria are established to support the accepted risk level. CASQA recommends consideration of language similar to that adopted by the Santa Ana Regional Water Board as their Pathogen Indicator Bacteria objectives, updated to reflect the USEPA 2012 criteria. The Santa Ana Basin Plan includes a discussion of the basis for the indicator bacteria objectives, a narrative objective that allows for development of alternative indicators and site-specific objectives, and indicator bacteria concentrations established as surrogate numeric	Chapter 2 section 2.3.2 and Chapter 5 section 5.2.4 of the Staff Report have been updated to clarify the relationship of pathogens to indicator bacteria and the relationship of illness rates to *E. coli* and enterococci densities. For decades, epidemiological studies have been used to evaluate how fecal indicator bacteria levels are associated with health effects of primary contact recreation on a quantitative basis. The NEEAR study provided data to establish recreational water quality criteria values for culturable enterococci and to help estimate an illness rate associated with those values. The mean illness rates associated with the 2012 U.S. EPA Recreational Water Quality Criteria are approximately 32 cases of NGI per 1,000 primary contact recreators for a culturable enterococci GM criterion of 30 cfu per 100 mL and 36 cases of NGI per 1,000 primary contact recreators for a culturable enterococci GM criterion of 35 cfu per 100 mL, in both marine and fresh water. These illness rates were used to estimate equivalent criteria values for culturable *E. coli*. The Bacteria Provisions establish objectives expressed as both numeric indicators and an estimated illness rate, which are not independent of each other. The numeric objectives set forth in the Bacteria Provisions are intrinsically linked to an estimated illness rate. However, providing a statement in the Provisions that the numeric objectives are set to equal the estimated illness rate would not be appropriate or	Yes

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		indicators of the narrative objective. For example, possible language that could be inserted into the ISWEBE and Ocean Plan under the "Bacteria Water Quality Objectives" section includes the following: "Indicator bacteria originate from the intestinal biota of warm-blooded animals, and their presence in surface water is used as an indicator of fecal contamination and the potential presence of pathogens capable of causing gastrointestinal (GI) illnesses. However, most strains of indicator bacteria are harmless and the actual risk to human health is caused by pathogens, microorganisms that are known to cause disease. Pathogens can cause illness in recreational water users and threaten or impair recreational beneficial uses. Measuring pathogens directly has been impractical due to the lack of standard methods so surrogate indicator bacteria have typically been used to indicate the presence of pathogens. However, the surrogate indicator bacteria have changed over time and future scientific advancements are anticipated that will allow better assessment of pathogens that cause illness. The USEPA criteria identified acceptable estimated gastrointestinal illness rates due to pathogens that are protective of REC-1 uses. The risk of illness was then translated to E. coli and enterococci densities determined to be protective of this risk level. To allow for incorporation of better pathogen indicators or new USEPA criteria, these WQOs are set equal to the USEPA established risk level and interpreted as E. coli and enterococci concentrations." As part of the discussion of risk, CASQA requests that the amendments allow for the use of human markers as part of the compliance pathways for the objectives. Numerous studies have established that human sources of bacteria pose the most risk to human health. The recent Surfer Health Study conducted in the San Diego region incorporated an epidemiological component and a Quantitative Microbial Risk Assessment (QMRA) component, which found a different relationship between indicator bacteria levels and human health risk than the epidemiological studies that supported the USEPA criteria – and pointed out that human sources of indicator bacteria posed the greatest health risk, and that elimination of human sources is most effective at reducing the risk of illness. Methods for reducing human sources of bacteria are not always aligned with the methods necessary to reduce fecal indicator bacteria. The implementation procedures for the objectives should allow for a demonstration that human markers are absent or below thresholds that would increase the risk to human health to be above the established risk level. Such an approach would limit burdensome efforts to remove bacteria sourced from wildlife such as that described under section 6.2.2.4 of the Staff Report, especially in light of the lower risk of human illness posed by bacteria sourced from	scientifically supported by the 2012 U.S. EPA Recreational Water Quality Criteria. Section 5.2.7 was added to Chapter 5 of the Staff Report to discuss how to develop alternative bacterial indicators and alternative analysis methods for site- or region-specific objectives. These alternative indicators could also be based on the same estimated illness rate established by the Bacteria Provisions or utilize human markers. In regards to the request to allow the use of human markers, a Regional Water Board could establish a numeric water quality objective, including a site-specific water quality objective, that utilize alternative indicators or other measures of pathogens if they are scientifically defensible. Part 3 of the ISWEBE (at III.E.3) has been revised to clarify that the proposed Bacteria Water Quality Objectives supersede bacteria objectives that protect the REC-1 beneficial use that were established "prior to the effective date of Part 3." The Amendment to the Ocean Plan has been revised to include similar language (III.D.1.a) A Regional Water Board's subsequent adoption of a water quality objective, including a site-specific objective, requires State Water Board and the U.S. EPA approval.	

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		wildlife. CASQA Recommendation: • Include a statement in the ISWEBE and Ocean Plan Amendments stating that the WQOs are set equal to a risk level that has been interpreted as the indicator bacteria concentrations shown in the amendment. • Include an expanded discussion of the risk level as described in the 2012 USEPA Criteria in the Staff Report. • Include an implementation provision for the objectives that allows the use of human markers to demonstrate compliance with objectives		
	4.02	Comment 2: Amendments should include the possibility of using alternative indicators as supported by the most current scientific research. The Amendments endorse the use of E. Coli and Enterococci as indicators for fresh and salt waters, respectively. CASQA supports the use of these indicators as they represent the best indicators of human health risk known to date, however the field is rapidly evolving and the Bacteria Provisions should be written to be adaptable to future scientific advances. In addition, the Staff Report should also be amended to include a discussion of alternative indicators of risk. For instance, USEPA, Southern California Coastal Water Research Project (SCCWRP), and many other national and international researchers have investigated the use of coliphages, viruses that target E. coli, as a possible alternative indicator. Coliphage monitoring holds the potential to offer results in a matter of hours versus days, thus giving more timely results of water body exceedances. In their current form, the Provisions would not allow coliphage to be used as an indicator of the risk to human health. The USEPA 2012 Criteria includes a section discussing alternative indicators or methods to assess risk (Section 6.2.3 p. 51) which could be cited in both the Bacteria Provisions and Staff Report: "EPA anticipates that scientific advancements will provide new technologies for enumerating fecal pathogens or [fecal indicator bacteria]. New technologies may provide alternative ways to address methodological considerations, such as rapidity, sensitivity, specificity, and method performance. As new or alternative indicator and/or enumeration method combinations are developed, states may want to consider using them to develop alternative criteria for adoption in WQS." CASQA proposes that the following language be included the Bacteria Provisions: "Regional Water Boards may use alternate indicators of risk that are equivalent or better than E. coli and Enterococcus in assessing risk associated with human illness within a water body as long as they meet standard USEPA guidance, have been approved by the Regional Water Board, and are supported by the most current scientific understanding." In addition, CASQA requests that the Staff Report be amended to provide	See response to comment 4.01. Additionally, technical support materials for developing alternative indicators and methods have been provided by U.S. EPA. Chapter 12 of the Staff Report has been revised to add links to the technical support materials.	Yes

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		guidance to the Regional Boards on using alternative indicators. The 2014 USEPA report for developing alternative indicators would serve as a good reference for this updated section. CASQA Recommendation: • Include a statement in the ISWEBE and Ocean Plan Amendments endorsing the use of alternative indicators of risk as supported by the most current science. • Include authorization for thresholds for alternative indicators to be used as objectives if they are established at an equivalent risk level to the E. coli and enterococcus objectives. • Update language in the Staff Report to provide guidance and allow the use of alternative indicators of risk.		
	4.03	Comment 3: The recommended analytical methods should not be limited to measurements of E. coli and Enterococci. The Bacteria Provisions recommend USEPA Methods 1603 and 1600 or other equivalent method to measure culturable E. coli and Enterococci, respectively. This language may be interpreted as precluding the use of new methods to measure E. coli and Enterococci that are not culture based. Rapid methods to measure the presence of pathogens outside of a lab culture continue to be an active area of research. For example, the USEPA 2012 Criteria provides guidance for the detection of Enterococcus as measured by qPCR through EPA Method 1611. This methodology is expected to increase public health protection due to a shorter turnaround time and stronger relationship to GI illness. It is unclear if the current language in the Bacteria Provisions would preclude the use of such available and future methods that offer advantages in public health protection. CASQA encourages the State Water Board to adopt language similar to Section 115880 of the Health and Safety Code, which states: "if a local health officer demonstrates or has demonstrated through side-by-side testing over a beach season that the use of United States Environmental Protection Agency method 1609 or 1611, or any equivalent or improved rapid detection method published by the United States Environmental Protection Agency for use in beach water quality assessment or approved as an alternative test procedure pursuant to Part 136 of Title 40 of the Code of Federal Regulations, to determine the level of enterococci bacteria as a single indicator provides a reliable indication of overall microbiological contamination conditions at one or more beach locations within that health officer's jurisdiction, the department may authorize the use of that testing method at those beach locations instead of other testing methods. In making that determination, the department shall take into account whether an alternative indicator or subset of indicators, with the associated test method, can provide results	See responses to comments 4.01 and 4.02. The Bacteria Provisions recommend U.S. EPA Methods 1603 and 1600, but do not prohibit other appropriate analytical methods. Other methods such as rapid methods are being currently used to analyze bacteria and can be used under the Bacteria Provisions. Section 2.7 of the Staff Report has been revised to provide more information using alternatives for laboratory analysis of culturable bacteria. Alternative indicators and alternative methodologies that are currently under development the Bacteria Provisions do not prohibit these methods for future use.	Yes

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		more quickly, thereby reducing the period of time the public is at risk while waiting for contamination to be confirmed. In addition, if an alternative indicator (e.g., coliphage) is developed and approved, the current Bacteria Provision language could be problematic assuming that the use of those methods is interpreted as a requirement. CASQA recommends that the text in the Bacteria Provisions regarding preferred methods be rewritten to be adaptable to future scientific developments such as improved measurements of E. coli and Enterococci as well as alternative indicators. CASQA Recommendation: • Remove the word "culturable" from the sentences describing E. coli and Enterococci methods in the ISWEBE and Ocean Plan Provisions. • Include language in the ISWEBE and Ocean Plan Provisions to allow use of a scientifically defensible method to measure alternative indicators. • Update the Staff Report to reflect the changes in recommended methodologies.		
	4.04	Comment 4: Reassess all existing waterbodies included on the 303(d) List for REC-1 bacteria exceedances with the new WQOs. Over 500 waterways were included on the 2010 303(d) list as impaired due to indicator bacteria, pathogens, fecal coliform, total coliform, Enterococci, E. coli, or enteric viruses. Currently, it is unclear how these new WQOs will affect legacy water body listings. CASQA requests that these listings all be reassessed using the new, scientifically defensible WQOs and any waterbodies that no longer exhibit exceedance be delisted. The reassessment should be conducted as a listing evaluation, and waterbodies that do not meet the listing thresholds should be removed, regardless of whether or not they meet the delisting requirements. At a minimum, any water body undergoing TMDL development should be reassessed for exceedances with the new WQOs. This requirement should be clearly stated in the Bacteria Provisions and discussed in the Staff Report in order to standardize the regional approach and avoid unnecessary TMDLs for waterbodies that are not in exceedance under the new objectives. CASQA Recommendation: • Include language in the Bacteria Provisions requiring legacy 303(d) bacteria listings to be reassessed with the new WQOs under the next 303(d) Listing cycle using the criteria for listing waterbodies. • Include language in the Staff Report requiring that any new bacteria TMDL include an analysis of bacteria exceedances with the new WQOs prior to TMDL development and implementation.	Waterbodies included on the 303(d) List for REC-1 bacteria exceedances will be reassessed during the next Integrated Report cycle. It is appropriate to reassess all data during the region's reporting cycle in order to ensure both existing and new data are gathered and assessed. No change is needed to the Bacteria Provision to ensure the use of the appropriate water quality objective because Section 4 of the Water Quality Control Policy for Developing the California 303(d) List (Listing Policy) states: If objectives or standards have been revised and the site or water meets water quality standards, the water segment shall be removed from the section 303(d) list. The listing of a segment shall be reevaluated if the water quality standard has been changed." In regards to existing TMDLs, Chapter III.E.3 of the Bacteria Provisions for Part 3 of the ISWEBE has been revised as follows: Total maximum daily loads (TMDLs) established before [insert the effective date of *Part 3*] to implement numeric water quality	Yes

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			objectives for bacteria are in effect for numerous waterbodies throughout the state. Such TMDLs remain in effect where a BACTERIA WATER QUALITY OBJECTIVE supersede a water quality objective for bacteria for which the TMDL was established. A Regional Water Board may convene a public meeting to evaluate the effectiveness of the TMDL in attaining the BACTERIA WATER QUALITY OBJECTIVE. TMDLs developed after approval of the Bacteria Provisions will include waste load allocation and load allocations to meet the current bacteria water quality objectives.	
	4.05	Site Specific Objectives In its 2012 updated Recreational Water Quality Criteria (RWQC), the United States Environmental Protection Agency (USEPA) began providing information on tools for developing alternative RWQC on a site-specific basis, such as epidemiological studies in both marine and fresh waters and quantitative microbial risk assessment (QMRA). Inasmuch as the proposed water quality control plans' amendments are based on the USEPA's 2012 RWQC, we anticipated the new bacteria provisions to include at least some recognition of these novel compliance approaches, and we expected the new provisions would facilitate the development of bacteria compliance approaches based on site-specific objectives, QMRA, and risk/illness based expressions of water quality standards. The absence of these approaches in the amendments is disappointing and we respectfully request that provisions to use these approaches be included in the plans' amendments.	See responses to comments 4.01 and 4.02.	No
	4.06	Comment 6: Bacteria Provisions should distinguish between wet and dry conditions. CASQA is concerned that there is no distinction between wet and dry weather conditions in the Bacteria Provisions. There are many areas throughout the state that experience sporadic and limited rainfall. When these infrequent wet weather conditions do occur, they result in high concentrations of pollutants, including bacteria, such that meeting WQOs (which are derived from dry-weather bacteria distributions) is potentially not feasible. Evaluation of wet and dry weather often occurs separately when the objectives are applied and the methods for appropriately applying the objectives should be established as part of the objectives. For example, the Los Angeles Water Board has adopted many bacteria TMDLs that include	The factors identified in California Water Code section 13241 were considered in the development of the Bacteria Provisions. Environmental characteristics and the water quality of statewide fresh, estuarine, and marine waters were considered, including differences in wet and dry conditions. For example, U.S. EPA Recreational Water Quality Criteria recognized that the distribution of fecal indicator bacteria in water is highly variable and calculated pooled variances to represent a wide range of weather and hydrological conditions when developing the final criteria. In either wet or dry conditions, the anthropogenic sources of bacterial	Yes

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		separate allocations for summer dry, winter dry, and wet weather conditions based on the large changes in bacteria loading under each of these weather and seasonal conditions as well as the variations in recreational use (and therefore exposure risk) under these different weather and seasonal conditions. Under the California Water Code (CWC Section 13241), the State Water Board and regional boards are required to consider a number of factors when adopting water quality objectives, including in relevant part here: consideration of past, present and probable future beneficial uses of water; and consideration of the water quality condition that could reasonably be achieved through coordinated control of all factors which affect water quality in the area. The Staff Report should include appropriate information separately for wet and dry weather events to ensure that the State Water Board has all of the necessary information to consider the required 13241 factors. Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. The current language of the Bacteria Provisions does not indicate if the differences between wet and dry conditions were evaluated in the Section 13241 analysis. Without such information, the State Water Board will be unable to properly consider compliance with section 13241. In short, such considerations might result in different requirements for wet weather as achieving the proposed objectives during wet weather may not be reasonable to achieve. Further, implementation provisions for WQOs should clearly define implementation requirements for both wet and dry weather. The implementation procedures should be developed based on the 13241 analysis results, consideration of the underlying science used to develop the objectives, consideration of the short duration of storm events, and the associated potential impacts to beneficial uses, all consistent with the CWC 13241 requirement of the "reasonable protection" of beneficial uses. Establishing water quality objectives should assess the ecological impact of wet weather exceedances and establish associated implementation procedures that account for allowable exceedances and impacts that occur as a result of the exceedance during wet weather as distinct from dry weather. As currently drafted the implementation provisions do not meet the requirements for a Program of Implementation as required by section 13242. In order to correct this problem, CASQA recommends the Bacteria Provisions be amended to exclude wet weather events from GM calculations and only apply the acute STV endpoint to wet weather events. The epidemiological studies that were the basis for the 2012 USEPA criteria were used to establish relationships with indicator bacteria collected during	exceedances need to be controlled to protect recreators. Setting a weather-specific bacteria water quality objective would require a site-specific or region-specific evaluation. The Bacteria Provisions for Part 3 of the ISWEBE at Chapter III.E.3 and for the Amendment to the Ocean Plan at Chapter III.D.1.a were revised to allow a Regional Water Board's Basin Plan to contain a site-specific bacteria objective that is developed before or after the effective date of the Bacteria Provisions. Chapter 10 section 10.2 of the Staff Report was revised to provide a more detailed explanation of differences between wet and dry conditions. Additionally, the Bacteria Provisions include implementation options to account for differences in wet and dry conditions, including the use of Reference System / Antidegradation and Natural Sources Exclusion approaches to adjust the exceedance frequency of the bacteria water quality objectives for REC-1 based on natural sources of bacteria across weather conditions. The Bacteria Provisions also contain regulatory tools that may be subsequently utilized by the Water Boards to evaluate whether inland surface waters, enclosed bays, or estuaries are appropriately designated with the REC-1 beneficial use. Those tools include the high flow suspension of the REC-1 beneficial use, the seasonal suspension of the REC-1 beneficial use, and the designation of the LREC-1 beneficial use. The Bacteria Provisions also contain reference to the regulatory tool available to the Water Boards to establish a water quality standards variance consistent with Code of Federal Regulations, title 40, section 131.14 that may be used by the discharger to make progress towards the underlying use without de-designating the use. Such tools contained in the Bacteria Provisions recognize that beneficial uses, for which water quality objectives are established, should be properly designated or maintained, applicable.	

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		dry weather. Wet weather events are sporadic, short-term events that do not have lasting impacts on bacteria water quality in receiving waters. As a result, wet weather data are not appropriate to be considered in the longer term conditions represented by the GM and will unnecessarily indicate that an area has a higher long-term bacteria distribution than it actually does. Furthermore, the State Water Board should recognize that the risk levels during wet weather are significantly different than the risk levels during dry weather as a result of lower exposure levels during wet weather (less recreators) than during dry weather. Because the GM and STV both offer the same level of risk protection, using only the STV for wet weather conditions will not result in higher risk to human health and will be more representative of the short term impact from wet weather events. CASQA Recommendation: • Conduct a 13241 analysis specific to wet weather and modify the objectives for wet weather if necessary after the analysis. • Exclude wet weather events from GM calculations and state that only the STV should apply for wet weather events.	Furthermore, Chapter 10 of the Staff Report includes a Section 13241 Analysis for these implementation options, including economic considerations. Chapter 10 states: "The use of the reference system/antidegradation approach or a natural sources exclusion approach will allow Regional Water Boards to direct resources for "clean-up" of bacteria to be directed towards anthropogenic sources instead of natural sources of bacteria and thus money and resources will be saved. The specific costs will be considered when each TMDL is adopted. This implementation procedure could result in a decreased incremental control cost in situations where baseline load reductions exceed those required when these implementation provisions are considered." The suspension of the REC-1 beneficial use during periods when it is unsafe for recreation will reduce costs for dischargers. By allowing dischargers to not treat wastewater for bacteria during these periods, costs for treatment will be reduced and fewer resources for sampling will be required. Additional information on the Economic Analysis from which this section of the Staff Report is based can be found at: https://www.waterboards.ca.gov/bacterialobjectives/docs/economics_analysis_2017.pdf. Finally, the Bacteria Provisions provide implementation options, not a program of implementation. Therefore, California Water Code section 13242 factors are not required. See also response to comment 4.09.	
	4.07	Comment 7: Provide flexibility in the calculation of the geometric mean. CASQA supports the use of a six-week geometric mean (GM), which allows flexibility in monitoring programs especially when sampling events are affected by uncontrollable weather or laboratory issues. However, some of the language in the Bacteria Provisions appears to limit the flexibility of monitoring programs. For example, in the ISWEBE Provisions there is language stating: "…the geometric mean values shall be applied based on a statistically sufficient number of samples, which is generally not less than five samples equally spaced over a six-week period." [Emphasis added] The	The Bacteria Provisions have been revised to clarify that the samples do not need to be equally spaced but rather distributed over a six-week period. The revised Bacteria Provisions state in section III.E.2 of the ISWEBE Plan under the Water Quality Standards Assessment header: When applying the listing and delisting factors contained in the Water Quality Control Policy for	Yes

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		requirement for equal spacing of the samples places a burden on sampling programs especially if weather or other uncontrollable circumstances result in loss of a sample. Furthermore, the Staff Report states that the Bacteria Provisions are not intended to act as a disincentive for permittees to sample more frequently. Requiring equal spacing of samples would make more frequent sampling following an exceedance difficult. In addition, the use of the rolling GM may result in the persistent identification of a violation even when the actual violation no longer exists. This same reasoning was cited in the Staff Report to justify performing a static statistical threshold value (STV): "Using a rolling average to calculate the STV could result in the [sic] reporting violations over a 6-week period where the actual violation no longer exists." (p. 72 Staff Report) There should be consistency between how the GM and STV are calculated and the GM should be allowed to be calculated as either a static or rolling mean. CASQA Recommendation: • Remove the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STV. • Allow the GM to be calculated as a static or rolling geomean.	Developing California's Clean Water Act Section 303(d) List, the GEOMETRIC MEAN and STV shall be used as follows, unless a situation-specific weight of the evidence factor is being applied: Only the GEOMETRIC values shall be applied based on a statistically sufficient number of samples, which is generally not less than five samples distributed over a six-week period. However, if a statistically sufficient number of samples is not available to calculate the GEOMETRIC MEAN, then attainment of the water quality standard shall be determined based only on the STV. When making a listing or delisting decision based on the situation-specific weight of the evidence factor and if beach use or beach closure information is available, such information shall be evaluated. Note that "generally not less than five samples distributed over a six-week period" is not a requirement, but rather an acknowledgement that five or more samples are considered statistically sufficient. In cases where samples are lost the Regional Water Board has discretion when determining attainment with the geometric mean water quality objective. Please also note that the language regarding a statistically sufficient number of samples distributed over a six-week period pertains to 303(d) standards assessment under the Listing Policy. It does not pertain to permit conditions and is not a requirement for permittees. The Bacteria Provisions were revised to clarify the applicability of the language. The STV has a ten percent exceedance frequency and should not be calculated in the same manner as the geometric mean. The STV is intended to capture the spikes in bacteria level that the geometric mean tends to smooth out. The calculation of the STV is based on a static average based on at least one sample in a single calendar month.	

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			The six-week rolling calculation is appropriate because it smooths out spikes to determine a statistically significant long-term value that can be reported on a short term weekly basis. This is supported by Chapter 5 section 5.2.5 of the Staff Report and the various studies performed by the Los Angeles Regional Water Board in examining application of geometric means within TMDLs. Chapter 5 section 5.2.5 of the Staff Report has been revised to explain two principal types of error are possible when determining whether a waterbody is meeting the geometric mean standard: 1) determining the waterbody does not meet water quality standards when it does and 2) determining the beach does meet water quality standards when it does not. A rolling geometric mean may in some cases determine a waterbody does not meet standards when it does. For example, a single very high sample can influence the geometric mean calculation week after week into a period where the water quality is, in fact, meeting standards. Alternatively, a discrete geometric mean can in some cases, arbitrarily split a period of low water quality such that the geometric mean calculation determines the waterbody does meet water quality standards when there was a period when it did not. While a discrete geometric mean calculation may adjust the periods of calculation according to seasons and weather or rainfall patterns in an appropriate manner, the exact boundaries between seasons may be arbitrary. Using seasonal alternative such as wet versus dry weather seasons, low water quality results from the last week in October (dry weather), would be separated from low water quality results in the beginning of November (wet weather) and since the late October early November time period is never assessed on its own, the period of low water quality is not identified. In the interest of not failing to identify water quality impairment, the rolling geometric mean calculation is preferred. This is consistent with the discussion of listing and delisting decisions in the Functional Equivalent Document for the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) list.	

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			Please also see response to comment 3.03.	
	4.08	Comment 8: Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to all waterbodies. CASQA supports the use of the reference reach/ antidegradation approach or natural sources exclusion approach that will provide Regional Water Boards with flexibility to adapt the WQOs to their specific regions. However, the extent of these implementation approaches appears to be limited to only waterbodies with a TMDL as noted in Staff Report: "The reference system/antidegradation approach and the natural sources exclusion approach are appropriate within the context of a TMDL. The TMDL process includes the robust analysis necessary to characterize bacteria sources and it provides an appropriate venue for determining the appropriateness of applying either approach." CASQA strongly disagrees with this limitation and recommends that these implementation tools be expanded to ALL waterbodies. There are many instances in which CASQA members have made proactive steps to protect a water body in advance of a bacteria TMDL being developed or are implementing actions that address multiple pollutants in response to another TMDL. In particular, one of the reasons for requiring development of watershed management plans in many stormwater permits is to address all 303(d) listed pollutants and preclude the need to develop TMDL(s). It is inappropriate for dischargers to these waterbodies to not have the same tools available to them when they are actively working to remove impairments ahead of TMDL development. Additionally, in Southern California, the available reference reach studies have been used in all regions in relatively consistent ways. Therefore, it would be straightforward to utilize the existing studies in a consistent manner in watersheds that do not have a bacteria TMDL. The requirement for this tool to only be used in the context of a TMDL may force Regional Water Boards and their constituents to develop TMDLs in places that could be more quickly and effectively addressed without a TMDL. While CASQA agrees that the TMDL represents a robust analysis process to determine the alternative implementation approaches, it is not the only scenario that allows for such an analysis. Regional Water Boards should be allowed to oversee and approve robust reference system/antidegradation and natural sources exclusion approaches as they deem appropriate. Expanding the implementation tools to all waterbodies will allow for more flexible and cost effective implementation options, faster and more complete protection of human health, and availability of all regulatory tools to address bacteria to all waterbodies. Furthermore, Regional Water Boards should be given guidance as to how	The reference system/antidegradation approach and natural sources exclusion approach are applied within the context of a TMDL because it acknowledges that beneficial uses are not being supported while also allowing for flexibility in meeting standards by taking into account natural sources of bacteria and not requiring regulation of natural systems. Furthermore these approach have been approved by U.S. EPA in the form of basin plan amendments in several regions and have been successfully applied within several bacteria TMDLs. The language in the Staff Report and Bacteria Provisions do not preclude the Regional Water Boards from utilizing similar approaches during the development of site-specific objectives. See also response to comment 4.09.	No

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		best to perform either the reference reach/antidegradation or natural source exclusion approaches. For example, the Areas of Special Biological Significance (ASBS) defined in the Ocean Plan are protected from waste discharge by maintaining "natural water quality". "Natural water quality" was defined using a robust reference approach approved by a panel of expert scientists. The approach could serve as a useful model for reference reach assessments and should be cited in the Staff Report. CASQA Recommendation: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to apply to all waterbodies. • Include guidance for Regional Water Boards implementing reference reach/antidegradation and natural source exclusion approaches in the Staff Report. As part of this guidance consider citing the ASBS natural water quality reference approach as an example.		
	4.09	Comment 9: Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to both the STV and GM. As stated in the previous comment, CASQA supports the use of these alternative implementation measures, however the limitation that they only apply to the STV is unnecessary and not based in sound science. During the staff workshop, it was mentioned by Water Board staff that the STV was the only endpoint that was likely to see exceedances in reference reaches. CASQA disagrees with this perspective and notes that there are a number of areas that experience high natural sources of indicator bacteria such that GM calculations are also elevated. For instance, in the Los Angeles Region Bacteria TMDLs, the winter dry weather exceedance GM rate for the reference reach was 10%. The justification in the Staff Report for the application of alternate implementation measures for the STV only includes the following: "By allowing an exceedance of the STV, but not the geometric mean, the data distribution of the water quality associated with the geometric mean is not changed and thus the level of protection is not changed. The STV is a percentile of the expected water quality sampling distribution of the GM objective value that is set at a 90 percentile, so that 90 percent of the distributed data is below the STV and 10 percent is above the STV. In the reference system/antidegradation and natural source exclusion approaches, the STV can change to a different percentile of the distributed data, but the geometric mean remains, ensuring the same level of protection of water quality." CASQA finds this language inadequate. The data distribution will remain unchanged regardless of whether the STV and/or the GM are exceeded. As mentioned in previous comments the basis for the Bacteria Provisions is to provide a protective level of risk for human health. Reference reach/antidegradation and natural source	The Bacteria Provisions for the Amendment to the Ocean Plan at Chapter III.D.2.b(1) and Part 3 of the ISWEBE at Chapter E.IV.1, have been updated to allow for the reference system/antidegradation and natural sources exclusion approaches to alter the exceedance frequency of the geometric mean and the STV or SSM element of the water quality objectives within the context of a TMDL. Chapter 5 section 5.3.1 of the Staff Report has been updated to explain that this is appropriate because natural sources of bacteria could be exceeding either of the applicable elements of the water quality objective, depending on the specific site and environmental conditions contributing bacteria to the water body or reference systems. The site-specific nature of the application of the reference system/antidegradation and natural sources exclusion approaches does not allow development of a general statewide guidance on how to implement these approaches. The Bacteria Provisions do not include the guidance requested by the commenter. As noted in Chapter 4 of the Staff Report, California encompasses a wide variety of geographic, hydrographic and climatological conditions. Natural populations of wildlife as well as anthropogenic sources of bacteria widely from region to region. The Regional Water Boards are uniquely knowledgeable about the	Yes

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		exclusion approaches are intended to provide Regional Water Boards flexibility in meeting the protective level of risk. If an area experiences high levels of natural indicator bacteria, which in many cases have been shown to cause lower rates of illness rates than anthropogenic sources of indicator bacteria, then an exceedance of the GM and/or STV may still be protective of the USEPA derived risk-based illness rate and the water quality objectives may not be able to be attained due to uncontrollable sources. Such determinations must be made only after analysis of the reference reach or natural source exclusion study data. Thus, Regional Water Boards should be given the discretion to determine if the reference reach/ antidegradation approach and natural source exclusion can apply to both the GM and STV. The above approach is consistent with CWC 13421 regarding the "reasonable protection" of beneficial uses. As mentioned under Comment #6, CWC 13241 requires State Water Board and Regional Water Boards to consider a number of factors when adopting water quality objectives, including "water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area." Conducting the required 13241 analysis could help define/identify reasonably controllable factors as well as those that are not controllable. CASQA encourages the State Water Board to provide guidance in the Staff Report about how to execute reference reach/antidegradation and natural source exclusion approaches and not limit their applicability to only the STV. CASQA Recommendation: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to be applied to both the GM and the STV. • Provide guidance in the Staff Report about approaches to implement the reference reach/ antidegradation and natural source exclusion approaches at the regional level.	distinctive geography, hydrology, sources of natural and anthropogenic bacteria, channel design, effluent, nature of the use, and other factors which vary by site. As such, it is appropriate for the Regional Water Boards to determine how best to provide flexibility under the approaches based on site-specific data and information. Chapter 5 section 5.3.1 of the Staff Report has been updated to include this justification.	
	4.10	Comment 10: Support Inclusion of Water Quality Standards Variance Language In general, CASQA supports the reference to variance provisions established in federal regulations. It is important for regional boards to recognize that variances are an appropriate and legal mechanism for addressing compliance with water quality standards. In addition to regional variances, CASQA also supports the statewide application of variances and encourages the State Water Board to promote their use and application. For instance, the State Water Board should consider developing a statewide variance for wet weather. As mentioned in a previous comment, recreation	Comment noted.	No

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		and therefore exposure risk varies significantly between wet and dry weather conditions. The State could standardize the approach to wet weather by developing a statewide variance for certain weather conditions when recreators are unlikely to be exposed. CASQA Recommendation: • Promote the application of regional and statewide WQO variance provisions. • Consider developing a statewide variance for wet weather conditions.		
	4.11	Comment 11: Perform a 13241 analysis to justify the selection of risk level. The USEPA 2012 Criteria was based on an extensive review of available scientific literature and public review to arrive at two NGI risk levels that would be protective of contact recreation. As stated in the Criteria document: "EPA recommends that states make a risk management decision regarding illness rate which will determine which set (based on illness rate selected) of criteria values are most appropriate for their waters. The designated use of primary contact recreation would be protected if either set of criteria … is adopted into state WQS and approved by EPA." [Emphasis added] The State Water Board endorsed the NGI risk level of 32 illnesses per 1,000 water contact recreators in the proposed Bacteria Provisions stating that "while both recommended illness rates are considered protective of public health, the 32 NGI per 1,000 would require a more stringent threshold for Fecal Indicator Bacteria," (Staff Report, p. 69). In choosing between the two risk levels, the State Water Board is required to include economic considerations of water quality conditions that could reasonably be attained through coordinated control of all factors affecting water quality under CWC Section 13241. In this analysis, the State Water Board should distinguish between the selection of either the 32 or 36 illnesses per 1,000 water contact recreators. Such an analysis does not appear to have been completed Chapter 10 of the Staff Report includes economic considerations for the chosen risk level but not a comparison between the two. From a risk standpoint, the two numbers are close enough as to not be discernable when assessing different illness rates, which in part supports EPA's conclusion that both risk levels are protective of human health. However, from the compliance standpoint, the two risk levels will result in different numbers of exceedances of the GM and STV triggering additional costs to the regulated community if the lower risk level is carried forward. Since both risk levels are protective of public health, as stated by USEPA, an economic analysis should be performed to ensure that the costs of complying with the chosen risk level are justified through protection of the beneficial use. Endorsing the lower risk level simply because it is more conservative without consideration of impacts to the regulated community is not defensible without a supporting analysis. In	See response to comments 2.02, 2.04 and 3.08. Specifically, Chapter 5.2.4 (Option 3) of the Staff Report has been expanded to provide background on the State Water Board's choice for endorsing the NGI risk level of 32 illnesses per 1,000 recreators. Additionally, Chapter 10.4 of the Staff Report has been revised and includes an analysis of the California Water Code section 13241 factors for the proposed illness rate of 32 illnesses per 1,000 recreators. Existing requirements were used as the baseline for the analysis, including the 36 per 1,000 illness rate associated with many of the current bacteria water quality objectives contained in Regional Water Board Basin Plans and the Title 17 beach notification levels.	No

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		addition, applying an overly conservative risk level can, in and of itself, lead to a significant impact on REC-1 beneficial uses. The State and Regional Water Boards should consider in their analysis the impacts of selecting the lower risk level especially if they may lead to more beach closings (thus removing the beneficial use) while not providing any additional protection to human health. CASQA Recommendation: • Conduct a 13241 analysis specific to the two NGI risk levels proposed in the USEPA 2012 Criteria and detail the findings in the Staff Report.		
	4.12	Comment 12: Provide a discussion of mixing zones in the ISWEBE and Ocean Plan Provisions. CASQA encourages the State Water Board to consider the allowance of mixing zones for stormwater discharges for bacteria. The Ocean Plan currently contains implementation provisions for permitted stormwater discharges that include the following definition: "RECEIVING WATER, for permitted storm water discharges and nonpoint sources, should be measured at the point of discharge(s), in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero)." CASQA requests that the State Water Board consider modifications of this definition or inclusion of a mixing zone provision for permitted storm water discharges. Permittees should be allowed to conduct studies to determine applicable mixing zones for bacteria and not be precluded from establishing them by the implementation provisions of the ISWEBE and Ocean Plan. As stated in the Staff Report, the Ocean Plan already has a statewide policy regarding mixing zones for toxic pollutants that are implemented through wastewater NPDES Permits, but has not established something similar for stormwater. It is logical to extend a similar policy to the Bacteria Provisions in order to establish a statewide standard for developing mixing zones for stormwater discharges. Such mixing zones should consist of a designated exclusion zone adjacent to the storm drain and approved by the County Health Department and by the Regional Water Board. The beach or shoreline access to the exclusion zone should be closed during periods of discharge from the storm drains. The exclusion zone should also be posted with warnings and maps alerting the public to the potential health hazards when the storm drains are flowing. Compliance monitoring sites should be located at the edge of the mixing zone and at other locations outside the mixing zone as appropriate. Dilution credits used to establish water quality-based effluent limits, when	See response to comment 1.02 and section 2.7 of the Staff Report (issues eliminated from further consideration). Establishing a statewide policy for mixing zones in permitted storm water discharges is outside the scope of the Bacteria Provisions, but could be considered during future planning efforts. With no statewide policy, existing Regional Water Board policies and procedures will apply. The Bacteria Provision do not preclude the application of mixing zones, the Bacteria Provision are mute on the issue. Regional Water Board basin plans provide guidance on when and if mixing zones should be allowed.	No

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		necessary, should be based on the minimum initial dilution occurring at the edge of the mixing zone. The dilution factor shall be determined based on a dilution study or application of an appropriate dilution model developed or approved by USEPA (i.e., one of the EPA Visual Plumes models, 4th or later editions). In addition, CASQA recommends that mixing zone provisions promulgated as part of the Bacteria Provisions supersede basin plan mixing zone provisions to the extent that they apply to implementation of water quality standards for pathogens and pathogen indicators of risk to human health. In addition, the mixing zone provisions should establish the methodology for the use of mixing zones in Regions that have not established mixing zone provisions in their basin plans. CASQA Recommendation: • Add a provision for establishing mixing zones for permitted stormwater discharges in the ISWEBE and Ocean Plan Provisions and Staff Report. • Include language in both the ISWEBE and Ocean Plan Provisions that these mixing zone provisions will supersede all region basin plan mixing zone provisions for pathogens and pathogen indicators of risk.		
	4.13	Comment 13: Provide direction to Regional Water Boards regarding the implementation of the Bacteria Provisions While the Bacteria Provisions include a number of useful implementation tools, they all can only be used for a water body after approval by a Regional Water Board. In the spirit of streamlining the application of Bacteria Provisions, CASQA requests that the State Water Board direct the Regional Water Boards to actively and expediently take for consideration any modifications to the objectives, TMDLs, or permit requirements that result from studies initiated by stakeholders in accordance with the Bacteria Provisions. While Regional Water Boards may establish requirements for the scientific validity of the study and will need to review and evaluate the results, it is important for actions associated with valid studies to be taken for Regional Water Board and State Water Board consideration in an efficient manner and not be delayed due to concerns about modifying objectives or beneficial uses. CASQA Recommendation: • Add a finding to the adopting resolution requiring Regional Water Boards to actively and expediently take action on studies conducted to apply an implementation option of the Bacteria Provisions.	Comment noted. Although the State Water Board is not directing the application of any of the implementation options provided within the Bacteria Provisions, the Provisions outline a set of implementation options that have been successfully implemented across the state for the control of sources of bacteria. The Bacteria Provisions allow the Regional Water Boards discretion for controlling the sources of bacteria. The Regional Water Board have a process for identifying priorities and updates to their respective basin plans via the triennial review process. Adding a finding to the adopting resolution directing the Regional Water Boards to take action on the implementation options listed in the Bacteria Provisions is outside the scope of this project and would circumvent the existing triennial review and basin plan amendment processes.	No
	4.14	Comment 14: Remove the requirement for the Use Attainability Analysis in the implementation of high flow and seasonal suspensions of REC-1 objectives. CASQA appreciates and supports the inclusion of high flow and seasonal suspension of REC-1 beneficial use as an implementation option in the	Water quality standards must include designated uses consistent with the Clean Water Act goal of "protection and propagation of fish, shellfish, and wildlife and recreation in and on the water" unless there is an	Yes

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		Bacteria Provisions. However, the Bacteria Provisions do not provide sufficient guidance to the Regional Boards on the implementation of these suspensions apart from requiring a use attainability analysis (UAA). CASQA believes that requiring a UAA would create a large burden leading to infrequent use of this implementation option. The Staff Report incorrectly states that the Los Angeles Regional Board is the only Regional Water Board that has adopted a high flow suspension to their Basin Plan. The Santa Ana Region Basin Plan also incorporated a high flow suspension as an implementation action that was developed with extensive stakeholder input and approved by both the USEPA and State Water Board. Importantly, the Santa Ana Regional Board implementation action does not require a UAA. Thus, it appears that UAAs are not legally required for a suspension to be implemented if the suspension is incorporated as an implementation provision of the objectives. CASQA requests that the State Water Board remove the requirement for a UAA and allow Regional Water Boards the option to adopt high flow and seasonal suspensions in the same manner as the Santa Ana Regional Board via an implementation action. CASQA also requests that the Staff Report be updated to include mention of the high flow suspension implementation option in the Santa Ana Region Basin Plan. Additionally, CASQA requests that the State Water Board establish the high flow and seasonal suspensions as implementation provisions of the objectives, consistent with the Santa Ana Regional Board approach, with thresholds (e.g., velocity or depth) that would meet the criteria for the suspension. Then, Regional Water Boards could develop information on when and where the suspensions apply in waterbodies within their region that is specific to the local hydrologic and climate conditions. Resources such as Methods for Assessing Instream Flows for Recreation and others have provided information on thresholds for velocity and depth for various beneficial uses that can be used to develop thresholds for the suspensions that could apply statewide. This approach would facilitate the consistent use of the suspensions statewide in a manner that is more feasible than conducting UAAs. However, if a UAA is required for suspensions, CASQA encourages the State Water Board to develop a statewide Categorical UAA for recreation. A similar approach was recently completed in Wyoming that distinguished between primary and secondary contact recreation (i.e., full immersion recreation or non-full immersion recreation) based on season and flow. Conducting a UAA is an expensive lengthy process that, under the proposed Bacteria Provisions, would need to be implemented numerous times throughout California to address similar waterbodies. A statewide, Categorical UAA approach would alleviate the burden from the regulatory community while providing uniformity across the state.	analysis supporting the assertion that it is not feasible to attain such a use. As set out in 40 Code of Federal Regulations section 131.10(j), "A State must conduct a use attainability analysis as described in section 131.3(g), and paragraph (g) of this section, whenever: (2) The State wishes to remove a designated use that is specified in section 101(a)(2) of the Act, to remove a sub-category of such a use, or to designate a sub-category of such a use that requires criteria less stringent than previously applicable." The REC-1 beneficial use is a Clean Water Act section 101(a)(2) use. The REC-1 use that is temporarily suspended is considered removed for the time period of suspension—when the specific water conditions render the REC-1 beneficial use inappropriate. Thus, a UAA is required to temporarily suspend (i.e., remove) the REC-1 designated use, including a temporary high flow suspension or a longer suspension including a seasonal suspension, pursuant to federal regulations and not the Bacteria Provisions. The Bacteria Provisions are not accompanied by guidance to aid the Regional Water Boards to conduct a UAA. Neither will the Provisions establish a Categorical UAA, as comment requests. As noted in Chapter 4 of the Staff Report, California encompasses a wide variety of geographic, hydrographic and climatological conditions. Population also varies widely from region to region. These variables can impact flow and channel design as well as frequency of access to water bodies. The Regional Water Boards are uniquely knowledgeable about their conditions and able to address such variables through site specific UAAs or Categorical UAAs at their discretion in lieu of a statewide Categorical UAA similar to that established by Wyoming. Due to the variability of conditions, implementation provisions are also determined at the regional level based on the specific conditions of the water body targeted for high flow or seasonal suspension. The Staff Report cites Los Angeles Regional Water Board	

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		CASQA Recommendation: • Remove the requirement for a UAA for high flow and seasonal suspensions. • Update the Staff Report to include the high flow suspension implementation option from the Santa Ana Region Basin Plan. • Establish the suspensions as implementation provisions of the objectives with thresholds for application of the suspensions. • If the requirement to conduct a UAA is maintained for suspensions, conduct a statewide, Categorical UAA for recreation.	Resolution No. 2003-010 (Section 12, page 164-165) as an example of a high flow suspension that was supported by a UAA. Resolution No. 2003-010 may be used as guidance by Regional Water Boards. However, Regional Water Boards are able to adapt implementation guidance to best suit the circumstances of the region-specific water bodies. Chapter 5 section 5.3.2 of the Staff Report has been revised to include reference to the high flow suspension established by the Santa Ana Regional Water Board, in addition to the high flow suspension established by the Los Angeles Regional Water Board that was identified in the Staff Report. The Santa Ana Regional Water Board established the Amendments to the Water Quality Control Plan for the Santa Ana River Basin to Revise Recreational Standards for Inland Fresh Surface Waters in the Santa Ana Region (Amendments) by Resolution 2012-0001. Contrary to the comment's assertion, the Amendments included a categorical UAA for the high flow suspension of recreation standards in specific stream segments when unsafe flow conditions preclude the attainment of the designated recreational use for short periods of time. (See the Staff Report accompanying the Amendments, at Section 5.6.) Specifically, that Staff Report (at p.65) identifies the similar suspension of the recreation use established by the Los Angeles Regional Water Board, for which a UAA was conducted; notes that federal guidelines recommend applying a categorical UAA (see fn. 56 and accompanying text); and concludes that the temporary suspensions established by the Amendments satisfied two of the six factors contained in 40 C.F.R. § 131.10(g) demonstrating that the recreational uses were not feasible. The comment that the UAA requirement would create a "large burden leading to infrequent use of this implementation option" is noted. However, the State Water Board does not have the authority to vary what the federal water quality standards regulations require.	

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			Additionally, commenter requests that the State Water Board's Bacteria Provisions allow the Regional Water Boards to establish high flow and seasonal suspensions similar to the manner in which the Santa Ana Regional Water Board did with its Amendments. Because the Santa Ana Regional Water Board conducted a UAA to support the temporary suspension of recreation standards, the Bacteria Provisions allow such an approach, which was presumably not such a large burden and is consistent with the federal regulatory requirement to conduct a UAA when a designated Clean Water Act section 101(a)(2) use is removed.	
	4.15	Comment 15: Suspend REC-2 objectives when high flow or seasonal suspensions apply and consider modifying REC-2 objectives. The Amendments state that REC-2 water quality objectives shall remain in effect during high flow suspension. However, the Staff Report notes several times in Section 5.3.2 that REC-1 and REC-2 beneficial uses are not fully attainable during high flow events that justify the suspension of REC-1 objectives. This is recognized in the Santa Ana Region Basin Plan, which temporarily suspends REC-1 and REC-2 objectives when high flows prevent safe recreation. CASQA recommends that REC-2 water quality objectives also be suspended during events where REC-1 objectives are suspended. CASQA also requests that the State Water Board consider modifying the REC-2 objectives, consistent with the approach taken by the Santa Ana Regional Water Board. As noted in the Santa Ana Basin Plan: "REC2 activities involve proximity to water but not normally body contact such that the ingestion of water is reasonably possible. Water contact is incidental or accidental, relatively brief and limited primarily to body extremities. There is no scientific basis to establish pathogen indicator objectives intended to protect human health as the result of such contact." CASQA agrees with this statement and requests that the State Water Board consider modifying the REC-2 objectives as part of this action to make both sets of recreational objectives consistent with the latest science and information. CASQA Recommendation: • Suspend REC-2 objectives when high flow or seasonal suspensions apply. • Remove existing REC-2 objectives and replace with anti-degradation objectives, consistent with the Santa Ana Region approach	The non-contact recreation or REC-2 beneficial use and any associated bacteria objectives are outside the scope of the Bacteria Provisions which are specific to contact recreation or REC-1 beneficial use. If a Regional Water Board chose to utilize a high flow or seasonal suspension of the REC-1 beneficial they may include other uses as part of that suspension as appropriate.	No
	4.16	Comment 16: The salinity threshold should be written to clearly demonstrate that a water body will not be subject to changing E. coli and Enterococci WQOs.	Chapter 2 section 2.3.2 and Chapter 5 section 5.2.2 of the Staff Report and the Bacteria Provisions for Part 3 of the ISWEBE at Chapter III.E.2 have been revised to	Yes

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		CASQA supports the application of separate indicators for fresh and saline waters and particularly supports the decision by the State Water Board to only apply the Enterococci indicator to saltwater, as it is known to result in erroneous exceedances when applied to freshwater due to natural sources. However, CASQA is concerned that the distinction between saline and freshwater does not cover all waterbodies and may inadvertently expose estuaries and river mouths to varying WQO indicators due to seasonal and tidal changes to salinity. The ISWEBE Provision includes the following language in Table 1 to distinguish between the salinity of the waterbodies: Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is less than 10 ppth 95 percent or more of the time" Saltwater (Enterococcus): "All waters, where the salinity is equal to or greater than 10 ppth 95 percent or more of the time." However, no guidance is provided for waterbodies that may fall between the two cutoffs, for instance an estuary that is seasonally separated from the ocean such that it is saline (>10 ppth salt) only 70 percent of the time in a calendar year. CASQA recommends that the State Water Board correct the wording of the salinity threshold to be discrete and cover all waterbodies (including those that might fall between the two salinity cutoffs) or provide recommendations of how to monitor waterbodies that do not fall into either freshwater/ salinity classification. CASQA recommends making the following change to the freshwater language: Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is not equal to or greater than 10 ppth 95 percent or more of the time" CASQA requests that in no situation should a water body need to be monitored with varying WQO indicators based on the ambient salt concentrations. Such a requirement would result in unnecessarily complicated monitoring efforts. CASQA Recommendation: • Update the language in the ISWEBE regarding salinity such that the threshold represents discrete classifications for E. coli and Enterococci. • If a text change is not completed, provide guidance on how to handle waterbodies that do not distinctly fall into either the freshwater or saline category.	clarify that *E. coli* is the sole indicator organism for waters with salinity equal to or less than 1 parts per thousand (ppth) 95 percent or more of the time. Conversely, Enterococci is the sole indicator organism for waters in which the salinity is greater than 1 ppth 5 percent or more of the time. The freshwater threshold value of 1 ppth is based on 40 Code of Federal Regulations section 131.38 (c)(3). The clarifications to the Staff Report and Bacteria Provisions will allow water bodies to be assessed using one set of water quality objectives.	
	4.17	Comment 17: Clarify the distinction between the Ocean Plan Bacteria Provisions and AB411 standards and do not allow outdated indicators to apply to permitting actions. Alignment of the AB411 and Bacteria Provisions should be a priority; however, the Staff Report states that changes to	The Bacteria Provisions for the Amendment to the Ocean Plan at Chapter III.D.1.a have been revised to clarify the applicability of the Bacteria Objectives to include the enterococci objectives~~-~~ in Chapter II.B.1.a(1)	Yes

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		AB411 standards are outside of the scope of these Bacteria Provisions. CASQA encourages the State Water Board to work with the California Department of Public Health (CDPH) to align the two sets of standards to utilize the most current indicators protective of human health. In addition, the Provisions do not provide a clear distinction between the new objectives and the AB411 objectives and how and when they should apply. The Provision language appears to state that all of the objectives (new bacteria and AB411 objectives) would be used for permitting, and that only the new WQOs would be used for 303(d) listing decisions; however, the distinction is unclear. For instance, in section III.D.1.a of the Ocean Plan Provisions, the text states: "Any of the bacteria water quality objectives shall be implemented, where applicable, through National Pollutant Discharge Elimination System (NPDES) permits…" [Emphasis added] The State Water Board should clarify that the bolded text refers only to the new State Water Board Water-Contact Objectives (II.B.1.a) and that the AB411 objectives should only be used for the purposes of posting beaches, not for 303(d) listing, permitting or TMDL development. The Provisions need to be clear as to the purpose of each of the objectives as they use different indicators and were established using different methodologies for different purposes. The Bacteria Provisions are based on the most protective indicators, according to the USEPA 2012 Criteria: "Scientific advancements in microbiological, statistical, and epidemiological methods have demonstrated that culturable enterococci and E. coli are better indicators of fecal contamination than the previously used general indicators, total coliforms and fecal coliforms." Requiring additional measurements of lesser fecal indicator bacteria indicators should not be equated to taking a more protective approach to human health. The AB411 standards include the measurement of total and fecal coliforms, which are not the most protective indicators for human health and therefore should not be applied to 303(d) listings, permitting, or TMDL development. In addition to the GM and STV values, the USEPA 2012 Criteria also included Beach Action Values (BAVs) that can be used for beach alerts and represent the 75th percentile value of a water quality distribution. The State Water Board should include text in the Staff Report noting that the BAVs are available for counties and municipalities to use in beach postings, especially for beaches which fall below the threshold for AB411 monitoring (i.e., 50,000 annual visitors). CASQA Recommendation: • Work with the CDPH to align the AB411 objectives with the Bacteria Provision objectives. • Update the language in Ocean Plan Provision so that the WQOs that apply to the NDPES permits are clearly listed as the new State Water Board Water-Contact Objectives by inserting "(II.B.1.a)" after the word "objectives" in section III.D.1.a. • Clarify that the CDPH AB411 objectives should only be utilized for beach	and not the Beach Notification Levels in Chapter II.B.1.b. The Ocean Plan Amendment also retains the fecal coliform objective contained in the current Ocean Plan. Chapter III has also been revised to clarify that the Beach Notification Levels (II.B.1.b) will be used only for section III.D.1.e "water adjacent to public beach and for public water-contact sports areas in ocean waters…for public beach notification programs." The requirements established under Title 17 of the California Code of Regulations section 7858 were legislatively mandated by Assembly Bill 411 (Health and Safety Code sections 115875-115915) and are outside the scope of the Bacteria Provisions. The requirements for storm water dischargers under Title 17 of the California Code of Regulations section 7858 were preexisting within the Ocean Plan and will remain in place. The Bacteria Provisions have clarified the water quality objectives as they apply to REC-1 in ocean and coastal waters. Additionally, see the response to comment 33.18.	

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		posting purposes. • Do not allow the use of outdated AB411 indicators (total coliform and fecal coliform) to be used for permitting actions. • Add language in the Staff Report highlighting the availability of EPA-developed BAV values for use in beach postings.		
Calleguas Creek Watershed Management Plan Representative: Lucia McGovern	5.01	I. Make the Bacteria Provisions Adaptable to Changing Science Fecal indicator bacteria are imperfect indicators of potential human health risk due to pathogens in receiving waters. As a result, a significant amount of effort is being applied in California and at the federal level to improve the methods available to protect human health. The Stakeholders feel that the Bacteria Provisions should be more flexible to incorporate the improvements in technology that have been validated and approved. To address this major point, the Stakeholders have the following recommendations: • Include a statement in the ISWEBE and Ocean Plan Amendments stating that the WQOs are set equal to a risk level that has been interpreted as the indicator bacteria concentrations listed in the amendment. • Include an implementation provision that allows the use of human markers to demonstrate compliance with the objectives if approved by a Regional Water Board. • Include authorization for alternative indicator thresholds to be used as objectives if they are established at an equivalent risk level to the E. coli and Enterococci objectives. • Include an option to develop site-specific objectives via QMRA (Quantitative Microbial Risk Assessment) or an equivalent approach in both the ISWEBE and Ocean Plan Provisions. • Update the Staff Report to provide guidance on how to develop and streamline adoption of site-specific objectives.	See responses to comments 3.08, 4.01, and 4.02.	No
	5.02	II. Allow Regional Water Boards the Flexibility to Use All Available Tools The Bacteria Provisions include a number of implementation options that will significantly improve the ability of the Stakeholders to effectively address long standing concerns with implementing actions to protect human health. However, in several cases, the Bacteria Provisions limit the applicability of the tools or require unnecessary analysis to use the tools. To address these concerns, the Stakeholders have the following recommendations: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to apply wherever a technical analysis has been approved by a Regional Water Board. • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to be applied to both the geometric mean (GM) and the	See responses to comments 4.08, 4.09, 4.14, and 4.15. The site specific nature of establishing a high flow or seasonal suspension of the REC-1 beneficial uses does not allow development of a general statewide guidance on how to implement these suspensions except that they require a UAA and approval by the Regional Water Board, State Water Board, and U.S. EPA.	No

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		statistical threshold value (STV). • Provide guidance about how to apply the reference reach/antidegradation and natural source exclusion approaches in the Staff Report. • Remove the requirement for a use attainability analysis (UAA) for high flow and seasonal suspensions in the ISWEBE Provisions in order to comply with the Code of Federal Regulations (CFR). • Establish the high flow and seasonal suspensions as implementation provisions of the objectives and include thresholds for application of the suspensions. • Suspend REC-2 objectives when high flow or seasonal suspensions apply.		
	5.03	III. Clarify Elements of Bacteria Provisions to Support Implementation In addition to the modifications listed above, there are a number of clarifications and applications of the Bacteria Provisions that will more effectively support implementation. These issues include clearly analyzing and developing separate implementation provisions for wet weather conditions from dry weather conditions, using the objectives based on the higher illness rate for inland waters, clarifying the application of the salinity threshold, and clearly designating the purposes of the two Ocean Plan objectives. The specific recommended elements to support implementation include: • Remove the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STV • Conduct a 13241 analysis specific to wet weather and modify the objectives for wet weather if necessary after the analysis. • Exclude wet weather events from GM calculations and state that only the STV should apply for wet weather events. • Conduct a 13241 analysis specific to the two NGI risk levels proposed in the USEPA 2012 Criteria and detail the findings in the Staff Report. • Endorse the use of 36 illnesses per 1,000 recreators in the JSWEBE Provisions. • Update the language in the ISWEBE regarding salinity such that the threshold represents discrete classifications for the two indicators. • If a text change to clarify the salinity threshold is not completed, provide guidance on how to handle waterbodies that do not distinctly fall into either the fresh or salt water category. • Update the language in Ocean Plan Provisions so that the WQOs which apply to the NDPES permits are clearly listed as the new State Water Board Water-Contact Objectives by inserting "(IIB.1.a)" after the word "objectives" in section 111.D.l.a. • Clarify that the California Department of Public Health AB411 objectives should only be utilized for beach posting purposes.	See responses to comments 3.08, 4.01, 4.06, 4.07, 4.16, 4.17 and 33.18.	No

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	5.04	I. Make the Bacteria Provisions Adaptable to Changing Science Comment 1: Clarify that the proposed WQOs are based on a protective level of risk. The USEP A has a long record of establishing recreational criteria based on the risk of illness. The USEP A published recommended recreational water quality criteria in 1986 that established the ambient condition of a recreational water body necessary to protect the designated use of primary contact recreation. Criteria values were selected for E. coli and Enterococci in order to carry forward the same level of public health protection that was believed to be associated with the USEP A's previous criteria recommendations based on fecal coliform. The USEP A carried forward this risk-based approach in its 2012 Criteria development. Elevated levels of indicator bacteria were linked to increased risk of gastrointestinal illness through epidemiological studies conducted by USEPA during the National Epidemiological and Environmental Assessment of Recreational Water (NEEAR), and the 2012 Criteria were established to carry forward the risk-based approach to setting indicator level bacteria, similar to the 1986 Criteria. Although the risk levels were the driver for selecting appropriate indicator levels, the only mention of risk in both the ISWEBE and Ocean Plan Provisions occurs in the header of the WQOs table. The Staff Report includes some minor discussion of risk but nowhere is the relationship between the proposed risk level and WQOs adequately described. Since the risk level is the driving mechanism to protect human health, it should be clearly described in the Bacteria Provisions and Staff Report. The science of recreational water quality is rapidly developing and research in Southern California has been at the forefront of new scientific advancements. These advancements have increased the number of pathogens and indicators that can be measured in recreational waters, lowered the cost of those measurements, and increased the reliability of health risk estimates at local sites based on site-specific data. The ultimate goal of recreational water quality improvement programs is to reduce the risk of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. Incorporating a risk discussion into the Bacteria Provisions and Staff Report will allow the amendments to be adaptable to the evolving science in the event that a better indicator becomes available. Thus, the Stakeholders request that the State Water Board include a clear statement within the Bacteria Provisions that E. coli and Enterococci WQOs are the fecal indicator bacteria concentrations designated to represent the risk of illness that is protective of human health for the REC-I beneficial use. The Stakeholders also request that the statement clarify that Regional Water Boards can establish alternative methods of demonstrating that the risk level established in the Bacteria Provisions is being attained. As an example of the alternative methods that	See responses to comments 3.08, 4.01, and 4.02.	No

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		could be used to demonstrate that the risk level is being attained, the Stakeholders request that the amendments acknowledge the use of human markers as part of the compliance pathways for the objectives. Numerous studies have established that human sources of bacteria pose the most risk to human health. Methods for reducing human sources of bacteria are not always aligned with the methods necessary to reduce fecal indicator bacteria. The implementation procedures for the objectives should allow for a demonstration that human markers are absent or below thresholds that would increase the risk to human health to be used as a demonstration of compliance with the WQOs. Recommendation: • Include a statement in the ISWEBE and Ocean Plan Amendments stating that the WQOs are set equal to a risk level that has been interpreted as the indicator bacteria concentrations shown in the amendment. • Include an expanded discussion of the risk level as described in the 2012 USEPA Criteria in the Staff Report. • Include an implementation provision for the objectives that allows the use of human markers to demonstrate compliance with objectives if approved by a Regional Water Board.		
	5.05	Comment 2: Amendments should include the possibility of using alternative indicators as supported by the most current scientific research. The Bacteria Provisions endorse the use of E. Coli and Enterococci as indicators for fresh and marine waters, respectively. The Stakeholders support the inclusion of E. Coli and Enterococci as the sole fecal indicator bacteria to be used for assessment of the risk of illness established by the objectives. E. Coli and Enterococci should supersede the use of fecal coliform and total coliform as they are better indicators of human illness, as discussed in the USEPA 2012 criteria. However, the field is rapidly evolving and the Bacteria Provisions should be written to be adaptable to future scientific advances. In addition, the Staff Report should also be amended to include a discussion of alternative indicators of risk. The USEPA 2012 Criteria includes a section discussing alternative indicators or methods to assess risk (Section 6.2.3 p. 51) which should be cited in both the Bacteria Provisions and Staff Report: "EPA anticipates that scientific advancements will provide new technologies for enumerating fecal pathogens or [fecal indicator bacteria]. New technologies may provide alternative ways to address methodological considerations, such as rapidity, sensitivity, specificity, and method performance. As new or alternative indicator and/or enumeration method combinations are developed, states may want to consider using them to develop alternative criteria for adoption in WQS." The Stakeholders propose that the following language be included the Bacteria Provisions: "Regional Water Boards may use alternate indicators	See responses to comments 4.01, 4.02, and 4.03.	No

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		of risk that are equivalent or better than E. coli and Enterococci in assessing risk associated with human illness within a water body as long as they are supported by the most current scientific understanding." In addition, the Stakeholders request that the Staff Report be amended to provide guidance to the Regional Boards on using alternative indicators. The 2014 USEPA report for developing alternative indicators would serve as a good reference for this updated section. Recommendation: • Include a statement in the ISWEBE and Ocean Plan Amendments endorsing the use of alternative indicators of risk as supported by the most current science. • Include authorization for alternative indicator thresholds to be used as objectives if they are established at an equivalent risk level to the E. coli and Enterococci objectives. • Update language in the Staff Report to provide guidance and allow the use of alternative indicators of risk.		
	5.06	Natural Backgrounds: "Federal regulations (40 D.F.R section 130.7) require that TMDLs include waste load allocations for point sources and load allocations for non-point sources and natural background levels and that the individual sources for each must be identified and enumerated." How can the Natural Source Exclusion, as described in this statewide policy, be implemented if natural background has not been calculated as part of an existing TMDL?	40 C.F.R. section 130.2(i) defines a TMDL as "The sum of the individual [wasteload allocations] for point sources and [load allocations] for non-point sources and natural background." A natural sources exclusion approach can be applied within the context of a TMDL and would require the identification, quantification and control of anthropogenic sources of bacteria. Any remaining sources would be considered natural sources and could be used to determine the natural background level of bacteria. In other words, the natural background would not need to be calculated prior to utilizing a natural sources exclusion approach but would ascertained through the development of the TMDL. Like the other implementation options provided within the Bacteria Provisions, the natural source exclusion approach is an existing regulatory option that is simply being identified as part of a comprehensive set of regulatory tools available to the Water Boards for control of bacteria. During initial TMDL development Regional Water Board staff would have explored the viability of a natural source exclusion approach during the initial source analysis when determining water load allocations and load allocations. If it was determined that the natural source exclusion approach was a viable	No

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			approach after a TMDL was approved, the Regional Water Board could reopen and reconsider the TMDL and utilize the approach at that time. This process would require approval by the Regional Water Board, State Water Board, and U.S. EPA.	
	5.07	Comment 4: Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to all waterbodies. The Stakeholders support the use of the reference reach/antidegradation approach or natural sources exclusion approach which will provide Regional Water Boards with the flexibility to adapt the WQOs to their specific regions. However, the extent of these implementation approaches appears to be limited to only waterbodies with a TMDL as noted in Staff Report: "The reference system/antidegradation approach and the natural sources exclusion approach are appropriate within the context of a TMDL. The TMDL process includes the robust analysis necessary to characterize bacteria sources and it provides an appropriate venue for determining the appropriateness of applying either approach." The Stakeholders strongly disagree with this limitation and recommend that these implementation tools be expanded to waterbodies which do not have an existing TMDL or TMDL in development. The reference system/antidegradation approach is already available in the Los Angeles Basin Plan, but the Stakeholders cannot use it because a TMDL has not yet been developed for the watershed. However, the Stakeholders would prefer to address the remaining impairments in the watershed prior to a TMDL being developed. The Stakeholders are currently developing a coordinated implementation plan with the intention of addressing constituents in the six existing Calleguas Creek Watershed TMDLs and 303(d) listings, including bacteria. The approach included an in depth analysis of indicator bacteria sources throughout the watershed and the reference reach analysis approved in a TMDL for a neighboring watershed (Santa Clara River). If the reference reach/antidegradation analysis approach is not allowed, the Stakeholders would be subject to addressing natural sources and have more significant costs than other dischargers simply because they do not have a TMDL. The analysis conducted for the implementation plan to meet the Los Angeles Regional Water Board's reasonable assurance analysis requirements indicates that stormwater best management practices (BMPs) would need to be designed to capture stormwater volumes up to 17 greater than would be required if the reference reach approach were allowed. It is inappropriate for such dischargers to not have the same tools available to them when they are actively working to remove impairments ahead of TMDL development. In Southern California, the same reference reach	See response to comment 4.08 and 5.06.	No

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		studies have been used in all regions and the allowable exceedance days have been consistently applied to all TMDLs in the Los Angeles Region. Therefore, it is straightforward to utilize the existing studies in a consistent manner in watersheds that do not have a bacteria TMDL. The requirement for this tool to only be used in the context of a TMDL may force Regional Water Boards and their constituents to develop TMDLs in places that could be more quickly and effectively addressed without a TMDL. While the Stakeholders agree that the TMDL represents a robust analysis process to determine the alternative implementation approaches, it is not the only scenario that allows for such an assessment. Regional Water Boards should be allowed to oversee and approve robust reference system /antidegradation and natural sources exclusion approaches as they deem appropriate. Expanding the implementation tools to all waterbodies will allow for more flexible and cost effective implementation options, faster and more complete protection of human health, and availability of all regulatory tools to address bacteria in all waterbodies. Recommendation: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to apply wherever a technical analysis has been approved by a Regional Water Board.		
	5.08	Comment 5: Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to both the STV and GM. As stated in the previous comment, the Stakeholders support the use of these alternative implementation measures, however, the limitation that they only apply to the STV is unnecessary and not based in sound science. During the staff workshop, it was mentioned by Water Board staff that the STV was the only endpoint that was likely to see exceedances in reference reaches. The Stakeholders disagree with this perspective and note that reference reach studies in Southern California have shown that GM exceedances are observed in primarily natural watersheds. At the Leo Carrillo reference site that has been used for most of the TMDLs in the region, the geometric mean is exceeded over 6% of the time. The justification in the Staff Report for the application of alternate implementation measures for the STV only includes the following: "By allowing an exceedance of the STV, but not the geometric mean, the data distribution of the water quality associated with the geometric mean is not changed and thus the level of protection is not changed. The STV is a percentile of the expected water quality sampling distribution of the GM objective value that is set at a 90 percentile, so that 90 percent of the	See response to comment 4.09.	No

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		distributed data is below the STV and 10 percent is above the STV. In the reference system\ antidegradation and natural source exclusion approaches, the STV can change to a different percentile of the distributed data, but the geometric mean remains, ensuring the same level of protection of water quality." The Stakeholders feel this description does not adequately justify the reasons for not applying the approach to the GM. The data distribution will remain unchanged regardless of whether the STV and/or the GM are exceeded. As mentioned in previous comments the basis for the Bacteria Provisions is to provide a protective level of risk for human health. Reference reach/antidegradation and natural source exclusion approaches are intended to provide Regional Water Boards flexibility in meeting the protective level of risk. If an area experiences high levels of natural indicator bacteria, which in many cases have been shown to cause lower rates of illness rates than anthropogenic sources ofindicatorbacteria9, then an exceedance of the GM and/or STV may still be protective of the USEPA derived risk-based illness rate. In such cases, the water quality objectives may not be able to be attained due to uncontrollable natural sources but human health may still be protected. Such determinations must be made only after analysis of the reference reach or natural source exclusion study data. Thus, Regional Water Boards should be given the discretion to determine if the reference reach/antidegradation approach and natural source exclusion can apply to both the GM and STV. The Stakeholders encourage the State Water Board to provide guidance in the Staff Report about how to execute reference reach /antidegradation and natural source exclusion approaches and not limit their applicability to only the STV. Recommendation: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to be applied to both the GM and the STV. • Provide guidance about how to apply the reference reach/antidegradation and natural source exclusion approaches in the Staff Report.		
	5.09	Comment 6: Remove the requirement for the Use Attainability Analysis in the implementation of high flow and seasonal suspensions of REC-1 objectives in the ISWEBE Provisions. The Stakeholders appreciate and support the inclusion of high flow and seasonal suspensions of REC-1 beneficial uses as an implementation option in the Bacteria Provisions. However, the Bacteria Provisions do not provide sufficient guidance to the Regional Water Boards on the implementation of	See response to comment 4.14.	No

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		these suspensions apart from requiring a use attainability analysis (UAA). Furthermore, requiring a UAA would create a large burden on the regulated community leading to infrequent use of this implementation option, when the intent of the high flow suspension provision is meant to provide temporary regulatory relief when beneficial uses are precluded. According to the Code of Federal Regulations (CFR 40 § 131.10(j)) UAAs are only required in two situations: (a) when a state designates a new a beneficial use or (b) when a state wishes to remove a designated use or subcategory of the use or designate a subcategory of such a use that requires criteria less stringent than previously applicable. The Stakeholders maintain that a UAA is not required by the CFR because high flow suspensions do not remove a designated use or put in place less stringent criteria, but rather address the temporal appropriateness of the water quality objective when attainment of recreational beneficial use is not applicable for a period of time and not permanently changed. The Staff Report incorrectly states that the Los Angeles Regional Board is the only Regional Water Board that has adopted a high flow suspension to their Basin Plan. The Santa Ana Region Basin Plan also incorporated a high flow suspension as an implementation action which was developed with extensive stakeholder input and approved by both the USEP A and State Water Board.10 Importantly, the Santa Ana Regional Water Board implementation action was approved by USEPA and adopted into the regional Basin Plan by the State Water Board without a UAA. Neither the Santa Ana Region Basin Plan nor the Staff Report for the Basin Plan Amendments contains explicit mention of the completion of a UAA in the development of the high flow suspension provision. The Staff Report for the Basin Plan Amendments further states, "temporarily suspending recreational uses due to inclement weather is analogous to adopting seasonal uses." Thus, it appears that UAAs are not legally required for a suspension to be implemented if the suspension is incorporated as an implementation provision of the objectives. The Stakeholders request that the State Water Board remove the requirement for a UAA to allow Regional Water Boards the option to adopt high flow and seasonal suspensions in the same manner as the Santa Ana Regional Board via an implementation action. The Stakeholders also request that the Staff Report be updated to include mention of high flow suspension adoption in the Santa Ana Region Basin Plan. Additionally, the Stakeholders request that the State Water Board establish the high flow and seasonal suspensions as implementation provisions of the objectives, consistent with the Santa Ana Regional Board approach, with thresholds (e.g., velocity or depth) that would meet the criteria for the suspension. This way Regional Water Boards could develop information on		

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		when and where the suspensions apply in waterbodies within their region that is specific to the local hydrologic and climate conditions. Resources such as Methods for Assessing lnstream Flows for Recreation and others have provided information on thresholds for velocity and depth for various beneficial uses that can be used to develop thresholds for the suspensions that could apply statewide. This approach would facilitate the consistent use of the suspensions statewide in a manner that is more feasible than conducting UAAs. Recommendation: • Remove the requirement for a UAA for high flow and seasonal suspensions in the ISWEBE Provisions in order to comply with the CFR. • Update the Staff Report to include the high flow suspension implementation option from the Santa Ana Region Basin Plan. • Establish guidance to provide statewide consistency in implementation and streamline development of the suspensions.		
	5.10	Comment 7: Suspend REC-2 objectives when high flow or seasonal suspensions apply. The Bacteria Provisions state that REC-2 water quality objectives shall remain in effect during a high flow suspension. However, the Staff Report notes several times in Section 5.3.2 that REC-1 and REC-2 beneficial uses are not fully attainable during high flow events that justify the suspension ofREC-1 objectives. This is recognized in the Santa Ana Region Basin Plan, which temporarily suspends REC-1 and REC-2 objectives when high flows prevent safe recreation. The Stakeholders recommend that REC-2 water quality objectives also be suspended during events where REC-1 objectives are suspended. Recommendation: • Suspend REC-2 objectives when high flow or seasonal suspensions apply.	See response to comment 4.15.	No
	5.11	Comment 8: Provide flexibility in the calculation of the geometric mean. The Stakeholders support the use of a six-week geometric mean (GM) which allows flexibility in monitoring programs especially when sampling events are affected by uncontrollable weather events and/or laboratory issues. However, some of the language in the Bacteria Provisions appears to limit the flexibility of monitoring programs. For example, in the ISWEBE Provisions, there is language stating "the geometric mean values shall be applied based on a statistically sufficient number of samples, which is generally not less than five samples equally spaced over a six-week period." [emphasis added] The requirement for equal spacing of the samples places a burden on sampling programs especially if weather or other uncontrollable circumstances result in loss of a sample. Furthermore, the Staff Report states that the Bacteria Provisions are not intended to act as a disincentive for permittees to sample more frequently. Requiring equal	See response to comment 4.07.	No

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		spacing of samples would make more frequent sampling following an exceedance difficult. Recommendation: • Maintain the 6-week averaging period for the geometric mean. • Remove the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STV.		
	5.12	Comment 9: Bacteria Provisions should distinguish between wet and dry conditions. The Stakeholders are concerned that there is no distinction between wet and dry conditions in the Bacteria Provisions. There are many areas throughout the state which experience sporadic and limited rainfall. When these infrequent wet weather conditions do occur, they result in high concentrations of pollutants, including bacteria, such that meeting dry-weather derived WQOs is more costly and potentially not feasible. Compliance determinations of wet and dry weather often occur separately when the objectives are applied; therefore, methods for appropriately distinguishing weather-specific objectives should be established. For example, the Los Angeles Water Board has adopted many bacteria TMDLs that include separate allocations for summer dry, winter dry, and wet weather conditions based on the large changes in bacteria loading under each of these weather and seasonal conditions. Under the California Water Code (Section 13241), the State and Regional Water Boards are required to consider a number of factors when adopting WQOs, including in relevant part here: consideration of past, present and probable future beneficial uses of water; and consideration of the water quality condition that could reasonably be achieved through coordinated control of all factors which affect water quality in the area. The Staff Report should include appropriate information separately for wet and dry weather events to ensure that the State Water Board has all of the necessary information to consider the required 13241 factors. Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. As part of the implementation plan development, the Stakeholders evaluated a number of strategies for reducing bacteria loads to meet objectives during dry weather and wet weather separately. During dry weather, many potential strategies were identified, but during wet weather, only infiltration or capture and reuse were identified as possible options to meet the objectives for stormwater and agricultural dischargers. In some areas of the watershed, implementation of these strategies may be very costly or infeasible due to poor soil conditions and a lack of locations available to install treatment. Without a separate evaluation, the State Water Board analysis does not adequately assess the ramifications of compliance with the objectives during wet weather. In short, such considerations might	See response to comment 4.06.	No

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		result in requirements for wet weather that may not be possible to achieve. Further, implementation provisions for WQOs should clearly define implementation requirements for both wet and dry weather. The implementation procedures should be developed based on the 13241 analysis results, consideration of the underlying science used to develop the objectives, consideration of the short duration of storm events, and the associated potential impacts to beneficial uses. Establishing water quality objectives should assess the ecological impact of wet weather exceedances and establish associated implementation procedures that account for allowable exceedances and impacts that occur as a result of the exceedance during wet weather as distinct from dry weather. It is unclear if the implementation provisions meet the requirements for a Program of Implementation as required by Section 13241. In order to address this issue, the Stakeholders recommend the Bacteria Provisions be amended to exclude wet weather events from GM calculations and only apply the acute STV endpoint to wet weather events. The epidemiological studies that were the basis for the USEPA 2012 Criteria were used to establish relationships with indicator bacteria collected during dry weather. Wet weather events are sporadic, short term events that do not have lasting impacts on bacteria water quality in receiving waters. As a result, wet weather data is not appropriate to be considered in the longer term conditions represented by the GM. Because the GM and STV both offer the same level of risk protection, using only the STV for wet weather conditions will not result in increased risk to human health and will be more representative of the impact from wet weather events. Recommendation: • Conduct a 13241 analysis specific to wet weather and modify the objectives for wet weather if necessary after the analysis. • Exclude wet weather events from GM calculations and state that only the STV should apply for wet weather events.		
	5.13	Comment 10: The selected risk level should be set at 36 illnesses per 1,000 water contact recreators for inland waters. The USEPA 2012 Criteria was based on an extensive review of available scientific literature and public review to arrive at two NGI risk levels which would be protective of contact recreation. As stated in the Criteria document: "EPA recommends that states make a risk management decision regarding illness rate which will determine which set (based on illness rate selected) of criteria values are most appropriate for their waters. 17ie designated use of primary contact recreation would be protected if either set of criteria ... is adopted into state WQS and approved by EPA. " [emphasis added] The State Water Board endorsed the NGI risk level of 32 illnesses per 1,000 water contact	See responses to comments 3.08 and 4.01.	No

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		recreators in the proposed Bacteria Provisions stating that "while both recommended illness rates are considered protective of public health, the 32 NGI per 1,000 would require a more stringent threshold for Fecal Indicator Bacteria," (Staff Report, p. 69). In choosing between the two risk levels the State Water Board is required to include economic considerations of water quality conditions that could reasonably be attained through coordinated control of all factors affecting water quality. In this analysis, the State Water Board should distinguish between the selection of either the 32 or 36 illnesses per 1,000 water contact recreators. Such an analysis does not appear to have been completed. Chapter 10 of the Staff Report includes economic considerations for the chosen risk level but not a comparison between the two. The Stakeholders feel if this analysis had been conducted for inland waters, the selection of a lower risk level may not have been warranted for inland waters given the lower levels of recreational uses as compared to beaches. Since both risk levels are protective of public health as stated by USEPA the higher risk level of 36 illnesses should receive equivalent consideration. Endorsing the lower risk level simply because it is more conservative without consideration of impacts to the regulated community is not defensible without a supporting analysis. Furthermore, because both risk levels are protective of public health, the stakeholders recommend using 36 illnesses per 1,000 recreators as the basis for the Bacteria Provisions WQOs for the ISWEBE provisions. Overburdening the regulated community to address indicator bacteria beyond a limit needed to protect human health is onerous and depletes valuable public funds which could otherwise be used to address other pressing water quality issues. Recommendation: • Conduct a 13241 analysis specific to the two NGI risk levels proposed in the USEPA 2012 Criteria and detail the findings in the Staff Report. • Include the 36 illnesses per 1,000 recreators risk level and associated E Coli and Enterococcus objectives in the ISWEBE.		
	5.14	Comment 11: The salinity threshold in the ISWEBE Provisions should be written to clearly demonstrate that a water body will not be subject to changing E.coli and Enterococci WOOs. The Stakeholders support the application of separate indicators for fresh and saline waters and particularly supports the decision by the State Water Board to only apply the Enterococci indicator to saltwater, as it is known to result in erroneous exceedances when applied to freshwater due to natural sources. However, the Stakeholders are concerned that the distinction between saline and freshwater does not cover all waterbodies and may inadvertently expose estuaries and river mouths to varying WQO indicators due to seasonal and tidal changes to salinity. The ISWEBE Provision includes	See response to comment 4.16.	No

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		the following language in Table 1 to distinguish between the salinity of the waterbodies: Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is less than 10 ppth 95 percent or more of the time" Saltwater (Enterococcus): "All waters, where the salinity is equal to or greater than 10 ppth 95 percent or more of the time" However, no guidance is provided for waterbodies which may fall between the two cutoffs, for instance, an estuary that is seasonally separated from the ocean such that it is saline (> 10 ppth salt) only 70 percent of the time in a calendar year. The Stakeholders recommend that the State Water Board correct the wording of the salinity threshold to be discrete and cover all waterbodies (including those that might fall between the two salinity cutoffs) or provide recommendations of how to monitor waterbodies which do not fall into either freshwater/salinity classification. The Stakeholders recommend making the following change to the freshwater language: Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is not equal to or greater than 10 ppth 95 percent or more of the time" The Stakeholders request that in no situation should a water body need to be monitored with varying WQO indicators based on the ambient salt concentrations. Such a requirement would result in unnecessarily complicated monitoring efforts. Recommendation: • Update the language in the ISWEBE regarding salinity such that the threshold represents discrete classifications for the two indicators. • If a text change is not completed, provide guidance on how to handle waterbodies that do not distinctly fall into either the fresh or salt water category.		
	5.15	Comment 12: Clarify the distinction between the Ocean Plan Bacteria Provisions and AB411 standards. The Ocean Plan Provisions maintain the California Department of Public Health (CDHP) AB411 standards but do not provide a clear distinction between the new objectives and the AB411 objectives and how and when they each should apply. The Provision language appears to state that all of the objectives (new bacteria and AB411 objectives) would be used for permitting and that only the new WQOs would be used for 303(d) listing decisions; however, the distinction is unclear. For instance, in section III.D.1.a of the Ocean Plan Provisions, the text states: "Any of the bacteria water quality objectives shall be implemented, where applicable, through National Pollutant Discharge Elimination System (ATP DES) permits ... " [emphasis added] The State Water Board should clarify that the bolded text refers only to the new State Water Board Water-Contact Objectives (II.B.1.a) and that the AB411	See responses to comments 4.17 and 33.18.	No

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		objectives should only be used for the purposes of posting beaches, not for 303(d) listing, permitting or TMDL development. The Ocean Plan Provisions need to be clear as to the purpose of each of the objectives as they use different indicators and were established using different methodologies for different purposes. Recommendation: • Update the language in Ocean Plan Provisions so that the WQOs which apply to the NDPES permits are clearly listed as the new State Water Board Water-Contact Objectives by ;inserting "(11.B.1.a)" after the word "objectives" in section 111.D.1.a. • Clarify that the CDPH AB411 objectives should only be utilized for beach posting purposes.		
Central Sierra Environmental Resource Center Representative: Meg Layhee, John Buckley	6.01	Our Center would first like to convey our support of the SWB proposing a more streamlined approach to monitoring bacteria across the state. Our staff agrees with many of the SWB's recommendations in the draft document including: • Consistency with EPA's 2012 Recreational Water Quality Criteria recommendations for the indicator bacteria used (E. coli) for the Water Quality Control Plan's Bacteria Water Quality Objective for REC-1. • Use of the EPA's more conservative estimated illness rate of 32 per 1,000 water contact recreators with a rolling geometric mean (GM) of 100 cfu/100 mL for E. coli and a statistical threshold value (STV) of 320 cfu/100 mL for E. coli., and • Use of a rolling average for calculating the GM instead of discrete time periods.	Comment noted. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing California Ocean Plan because California-specific epidemiological studies provide data that suggest fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposure and environmental conditions. The Water Board will consider evaluating the fecal coliform water quality objective at a later date. Chapter 5 of the Staff Report provides justification for retaining fecal coliform.	No
	6.02	1. Limited Water Contact Recreation (LREC-1) Beneficial Use Our staff understands that LREC-1 was originally used in the Los Angeles region for waterbodies with concrete-lined channels, fencing to restrict public access, and often very minimal flow. However, it appears the SWB intends to give RWBs the authority to designate any stream or river as a LREC-1 if the water body has "very shallow water depth" or if the water body has "restricted access". This language is very vague. As Water Board staff are aware, any stream will have varying depths in just a short length, and over a considerable distance, stream depth may vary greatly. A beneficial use designation based on water depth would require on-the-ground assessment of individual water body segments to determine appropriate designation. Our center is not clear how Regional Water Boards (RWB) intend to determine if individual streams or river reaches are LREC-1 waterbodies based on depth, especially for stream and rivers that may only qualify for LREC-1 designation seasonally, or only qualify for LREC-1 during certain water year types (e.g., dry or critically dry years). For example, a pool habitat most often will have deeper water than a riffle habitat within the same reach, so how will a stream or river reach be determined to be very shallow? Will individual water depth measurements be taken	See response to comment 3.15. The Bacteria Provisions do not state or require that any objective developed to reasonably support the LREC-1 use will be less stringent than the Bacteria Objectives proposed in the Provisions although that could very well be the case.	No

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		throughout a stream reach to determine average depth? Will the deepest area of a stream reach (e.g., pools) be measured to determine appropriated beneficial use designations based on water depth? Or will the shallowest areas of a reach be measured (e.g., riffle) to determine if a reach should be designated as LREC-1 based on water depth? In short, our center urges the SWB to really consider how the LREC-1 designation will be feasibly implemented if the requirement for the beneficial use is based on whether or not a water body is "very shallow", which is an arbitrary and highly variable condition of a water body. Our center understands that designation of LREC-1 status would be subject to review and approval by both the SWB and EPA once an attainability analysis is conducted by the RWB. However, we ask that the SWB provide more clarity and detail in the plan on how water board staff will determine LREC-1 designation based on "very shallow water depth". Our staff also urges the SWB to provide more detail in the Water Quality Control Plan describing bacteria objectives for LREC-1. We understand that the RWBs will determine appropriate bacteria thresholds for LREC-1, and that they will be "less stringent Water Quality Objectives (WQO) for bacteria than the previously applicable bacteria WQO for the REC-1 use", however, we urge the SWB to recommend thresholds for LREC-1 so that there is consistency across regions, and also define what "less stringent" WQO for bacteria would be under LREC-1.		
	6.03	2. Bacteria Water Quality Objectives for REC-1 Beneficial Use – Geometric mean Although our center does not oppose the SWB recommendation to use a rolling average for the GM for REC-1, we do not agree with changing the Bacteria WQO's GM requirement for REC-1 from four weeks to six weeks. Using a six-week period to calculate a rolling GM may not accurately reflect surges or pulses in water body contamination, especially when bacteria pollution comes from non-point sources which are often highly variable from week-to-week. In our monitoring efforts on the Stanislaus NF we often see high levels of bacteria pollution when livestock congregate near waterbodies, but once they are herded away or move on their own away from the stream reach, then bacteria levels can decrease substantially. That did not change the fact that the water may have been significantly contaminated for a week or two, and perhaps longer. We have also observed that when livestock are gathered at the end of the grazing season in an enclosure adjacent to a stream, bacteria levels often increase dramatically. Our Center took a single sample at such a site that was 30,000 mpn/100 mL of fecal coliform. With these harmful conditions to water, contact recreational visitors would be better represented by utilizing a rolling average over a four-week period instead of a six-week period.	See response to comment 4.07.	No

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	6.04	3. Implementation Provisions – Reference Condition/ Natural Source Exclusion (TMDL) Our Center fully agrees with the SWB proposing approaches to determine natural and anthropogenic sources of bacteria within a water body as part of the TMDL process. On Forest Service lands in particular, we have found that fecal coliform and E. coli concentrations at a reference site (Bourland Creek in the Bourland Research Natural Area, where cattle are excluded from the headwaters and upper reaches of Bourland Creek) are consistently low throughout the grazing season -- suggesting wildlife and human contributions are much less of contributors to bacteria, at least on public forest lands. In addition, our center struggles in our own water quality monitoring to be able to find "no livestock present" reference streams on public lands, since livestock grazing is so prolific across the majority of public lands. We emphasize to the SWB that although we agree with defining reference conditions and natural sources of bacteria, that in many regions such as the Sierra Nevada, it's often very difficult to find areas that are excluded from anthropogenic sources of contamination. We also urge the SWB to clearly define "natural" and "anthropogenic" sources in the Bacteria Provisions section of the plan. Specifically, our staff would like clarification from the SWB on the definition of livestock grazing on public lands in regards to the bacteria provisions and TMDLs. Our staff assumes that the SWB defines livestock grazing on public lands as an anthropogenic source, since livestock are not a natural component of California's ecosystems. However, we would like clarification of this.	See responses to comments 4.08 and 23.05. Livestock and grazing is an anthropogenic source and would be treated as such within the context of a TMDL or other regulatory program. The determination of natural and anthropogenic sources is done during the investigation of the sources of Impairment of a waterbody while a TMDL is being developed. Depending on the specifics of a waterbody, the bacteria source could be natural (migrating birds) or anthropogenic (birds attracted to a landfill) based on the specific factors of the waterbody. The determination of natural or anthropogenic can depend of the specific of a waterbody, thus determination if left to the Regional Water Board staff.	No
	6.05	4. Implementation Provisions – High Flow Suspension for REC-1 Beneficial Use Our Center understands the logic behind the proposed high flow suspension for REC-1 since water contact recreators since high flows, in theory, are conditions that reflect unsafe conditions for REC-1 uses. However, we would like to point out that many water contact recreators are in fact recreating during high flow conditions. In our region, kayakers and rafters utilize high flow events. Accordingly, to suspend the REC-1 beneficial use during high flows because these conditions reflect unsafe conditions for recreators does not mean that recreators are not using these waterbodies.	See response to comment 4.14. The use of a temporary suspension of the REC-1 beneficial use during high flows would require a UAA. A UAA would analyze the likelihood of water contact recreation during high flows on a site-specific basis. Furthermore, the temporary suspension of the REC-1 beneficial use would require adoption by the Regional Water Board and approval by the State Water Board and U.S. EPA allowing multiple opportunities for public participation and analysis.	No
	6.06	5. Implementation Provisions – Seasonal Suspension for REC-1 Beneficial Use Like the high flow suspension, the proposed seasonal suspension for REC-1 is generally reasonable, especially when waterbodies are at temperatures at or near freezing which constitutes very unsafe conditions for water	See responses to comments 3.15 and 4.14. The use of a temporary suspension of the REC-1 beneficial use during specific seasonal conditions would require a UAA pursuant to 40 CFR § 131.10(g)(1)-(6). The factors evaluated under that regulation generally require a	No

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		contact recreators. However, as mentioned in the previous section, "unsafe conditions" do not necessarily mean that recreators are not still recreating in waterbodies. In addition, our staff urges the SWB to clarify what constitutes "low water flows" and "low water temperatures" that would be considered conditions that are "inapplicable" for water contact recreators. In our region, especially during this time of year, anglers and swimmers recreate in mountain streams and rivers driven this time of year by snowmelt-which have low water temperatures. In addition, backpackers, hikers and campers utilize waterbodies with both low water flows and low water temperatures in the mountains to not only drink from, but also to rinse their hands, rinse their face, bathe, and even wash dishes. Based on these examples waterbodies with "low water flows" and "low water temperatures" are very much used by water contact recreators. Therefore, our center does not support the seasonal suspension of REC-1 under "low water flows" or "low water temperature" conditions. As we have described in the previous paragraph, in our region, low water flows and low water temperature conditions are "applicable" for water contact recreators and do not warrant seasonal suspension of REC-1.	determination that conditions prevent the attainment of water contact recreation during seasonal conditions on a site-specific basis. Furthermore, the temporary suspension of the REC-1 beneficial use would require approval by the Regional Water Board, State Water Board, and U.S. EPA allowing multiple opportunities for public participation and analysis. Drinking water uses as they relate to bacteria are outside the scope of this project. Hikers and backpackers that utilize water with low flows for uses that fall under the REC-1 beneficial use would be protected by the water quality objectives established by the Bacteria Provisions. A Regional Water Board would need to show that the water was at a level where uses associated with REC-1 were no longer feasible to attempt to apply the seasonal suspension of REC-1. Some potential scenarios where this might be supported would be times in severe drought where there was no water present or times during the winter when water was completely frozen.	
	6.07	6. Water Quality Standards Variance Policy Our Center is not supportive of a water quality variance policy for bacteria. A variance policy would allow livestock grazing activities to pollute stream and rivers on public lands with minimal oversight and accountability.	See response to comment 3.09.	No
	6.08	Our Center supports: • Using E. coli for the Water Quality Control Plan's Bacteria Water Quality Objective for REC-1. • Use of the conservative estimated illness rate of 32 per 1,000 water contact recreators with a rolling GM of 100 cfu/100 mL for E. coli and a STV of 320 cfu/100 mL for E. coli. • Use of a rolling average for calculating the GM instead of discrete time periods. • High flow suspension. • Seasonal suspension under freezing temperature conditions. • Reference condition/Natural Source Exclusion for TMDLs.	Comment noted.	No
Central Valley Clean Water Association	7.01	CVCWA commends the efforts by the State Water Board in developing the Bacteria Provisions and believes these documents will help to standardize a state approach and further protect California waters and human health.	Comment noted.	No
	7.02	1. The Draft Staff Report and associated Economic Analysis are incorrect in assuming no additional cost for WWTP dischargers to monitor for E. coli.	See response to comment 1.01. Chapter 6 section 6.1 of the Staff Report discusses traditional point source	Yes

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Representative: Debbie Webster		WWTP dischargers that meet effluent limitations based on Title 22 disinfection requirements should not be required to monitor for E. coli. The Draft Staff Report and associated Economic Analysis2 anticipate a cost savings for municipal wastewater treatment plants (WWTA) for bacteria monitoring, assuming that WWTPs would substitute E. coli monitoring for fecal coliform monitoring. In fact, WWTPs in the Central Valley are required to monitor for total rather than fecal coliform. The assumption that WWTPs would substitute E. coli for total coliform monitoring is incorrect, as discussed below. Most WWTPs in the Central Valley have effluent limitations for total coliform derived from the Division of Drinking Water's reclamation criteria, California Code of Regulations, Division 4, Chapter 3 (Title 22), for the reuse of wastewater, which are more stringent than the EPA recreational criteria. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater must be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels shall not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) has stated that: "Title 22 is not directly applicable to surface waters; however, the stringent disinfection criteria of Title 22 may be appropriate in the site-specific circumstances of a discharge where the irrigation of food crops and/or for body-contact water recreation are beneficial uses. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens." Total coliform bacteria are a broad group of indicator bacteria, including a variety of bacteria, mostly of intestinal origin. E. coli is a small subset of the group of coliform bacteria. Thus, if a WWTP is able to achieve E. coli limits with total coliform measurements, it is achieving E. coli levels that are conservatively two orders of magnitude lower than those included in the Bacteria Provisions. It is not likely that the Central Valley Water Board would replace total coliform limitations with limitations based solely on the E. coli criteria. To ensure that disinfection standards are met, the Central Valley Water Board will likely continue to require monitoring of total coliform. Therefore, because WWTPs are regulated to the more stringent Title 22 disinfection standards for total coliform, it does not make practical sense to require them to monitor E. coli in addition to total coliform. Further, the Staff Report Economic Considerations section focuses solely on ocean WWTP discharges, and does not consider the economic impact to inland surface water dischargers.	control and effluent limits for POTWs including waste water treatment plants. This section explains that facilities with permits containing effluent limits for bacteria derived from Title 22 recycled water criteria are more stringent than the objectives proposed Bacteria Provisions. As discussed in response to comment 1.01 and below, the proposed Bacteria Provisions would not be implemented in permits applicable to those POTW dischargers. Part 3 of the ISWEBE Bacteria Provisions has been revised to clarify this point. (Part 3, IV.E.1 (""…where a permit, WDR, or waiver of WDR includes an effluent limitation or discharge requirement derived from a water quality objective, guideline, or other requirement to control bacteria that is a more stringent value than the applicable bacteria water quality objective, the bacteria water quality objective shall not be implemented in the permit, WDR, or waiver of WDR."). Chapter 10 section 10.4 of the Staff Report has been revised to state that monitoring costs and treatment process costs for municipal wastewater discharges to freshwater are not likely to change significantly due to the water quality objectives included in the Bacteria Provisions. These dischargers will either continue to monitor for total coliform if implementing the Title 22 recycled water criteria as effluent limits, or continue to monitor for fecal coliform if implementing a more stringent water quality objective like that found in the Lahontan Basin Plan. Additional treatment processes are not expected since the current, more stringent effluent limitation or discharge requirements will continue to apply. Monitoring costs for municipal wastewater discharges to marine waters may be slightly reduced or increased depending on which indicator is currently being monitored by the facility the wastewater treatment facility. A facility would no longer need to sample for total coliform, but may see higher sampling costs associated with enterococci if enterococci are not part of the facility's current monitoring efforts. See revisions to the Staff Report at section 10.4.1.1.	

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		Recommendation: Modify the Draft Staff Report to specify that dischargers meeting the more stringent Title 22 disinfection requirements that exist as effluent limitations in NPDES permits shall not be required to monitor for E. coli also. Modify the Draft Staff Report and associated Economic Analysis to acknowledge that WWTP dischargers in the Central Valley will need to monitor total coliform to meet Title 22 disinfection requirements, and that a requirement to monitor for E. coli would represent an additional cost.		
	7.03	2. The 13241 Analysis does not include a description of the water quality conditions that are achievable through coordinated control of all factors which affect water quality in the area. Under California Water Code Section 13241, the State Water Board and Regional Water Boards are required to establish water quality objectives that ensure the reasonable protection of beneficial uses. In establishing such objectives, the Water Boards are required to consider a number of factors, including in part: • Past, present and probable future beneficial uses of water; • Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area; and • Economic considerations. The Draft Staff Report should include appropriate information to satisfy the 13241 requirements. The current language of the Bacteria Provisions included in the Draft Staff Report does not identify – and therefore cannot properly consider – the water quality conditions that could reasonably be attained through coordinated control of all factors affecting water quality. The Draft Staff Report simply states that: "The proposed water quality objectives for bacteria and implementation provisions can be implemented through NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act, water quality certifications issued pursuant to section 401 of the Clean Water Act, WDRs, waivers of WDRs, and TMDLs." However, this statement describing the regulatory mechanisms available to enforce water quality objectives does not fulfill the 13241 requirements. Indicator bacteria have many natural, background sources in addition to those sources regulated by the Water Boards. Without considering such sources, the State Water Board will be unable to properly understand whether proposed objectives are less than, equal to, or exceed the water quality conditions that could reasonably be achieved through the coordinated control of all factors. In addition, an understanding of the resource commitment necessary to implement control measures is needed to determine the water quality conditions that could reasonably be achieved. While the Draft Staff Report includes an economic analysis, it does not consider whether control	Chapter 10 section 10.3 of the Staff Report has been revised to include a more robust discussion of the 13241 factor pertaining to a description of the water quality conditions that are achievable through coordinated control of all factors which affect water quality in the area. With respect to the comment that the Staff Report should also reflect an understanding of the resource commitment necessary to implement control measures to determine the water quality conditions that could reasonably be achieved. The Bacteria Provisions are establishing water quality objectives for bacteria to assure the reasonable protection of the REC-1 beneficial use. (See Staff Report section 2.3.2.) The Bacteria Provisions also expressly provide that existing TMDLs developed for bacteria water quality objectives established prior to the effective date of the Bacteria Provisions will remain in place and would not be superseded by the objectives contained in the Bacteria Provisions. Those TMDLs have been approved by U.S EPA as assuring the protection of the applicable beneficial use. As commenter notes, economic considerations are included in the Staff Report (at section 10.4)~~,~~ which utilizes an evaluation of costs prepared by Abt Associates Inc. in a report titled "Economic Analysis of Proposed Water Quality Objectives for Pathogens in the State of California" (June 2017). The report was posted to the State Water Board web site for the Bacteria Provisions project page on June 27, 2017. While there is no "reasonable" standard or a balancing test required by Water Code section 13241, the State Water Board is	Yes

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		measures and associated costs are reasonable, or whether they will lead to achieving the desired water quality conditions (i.e. compliance with the proposed water quality objectives). Section 13242 of the Water Code requires that a program of implementation be developed and documented, wherein the nature of actions necessary to achieve proposed objectives must be identified and a time schedule for the actions to be taken must be provided. The Draft Staff Report does not include this information. Recommendation: Modify the Draft Staff Report to clearly describe the information required under Sections 13241 and 13242 of the Water Code, and to document the information that is currently available and not available. Modify the proposed Provisions, as necessary.	required to consider the 13241 factors when it considers adopting water quality objectives. The Bacteria Provisions contain regulatory options in the implementation chapter that may subsequently be established and utilized by the Water Boards to aid in the development of TMDLs or to accurately identify beneficial uses to which the bacteria objectives apply. The Bacteria Provisions expressly supersede certain bacteria water quality objectives established by the Regional Water Boards, but do not disrupt any TMDLs that have been established by the Regional Water Boards to achieve the objectives that would be superseded. The Bacteria Provisions do not specifically establish a regulatory program of implementation within the meaning of Water Code section 13242, which is the reason the Staff Report does not include any such supporting information.	
	7.04	3. Appendix C of the Draft Staff Report uses an inappropriate conversion factor to convert fecal coliform objectives to E. coli objectives. Appendix C of the Draft Staff Report uses a conversion factor to convert fecal coliform objectives used in Regions 1, 5 and 6 to E. coli objectives, and to back calculate the associated risk levels. The conversion factor used is "E. coli is ~ 90% of Fecal Coliform (based on number used by Ocean Plan staff – M. Gjerde)." This conversion factor does not include a citation to scientific literature. At the Stakeholder Meeting on July 10, 2017, State Water Board staff suggested that the conversion factor came from a study conducted by the Southern California Coastal Water Research Program (SCCWRP), but staff did not remember specifics of the study. Communication with SCCWRP indicated that the Southern California Bight 1998 Regional Monitoring report was the source of the 0.9 ratio. This study included an inter-laboratory comparison of indicator bacteria results among multiple laboratories that used samples spiked with wastewater influent. However, the study neither included nor made a recommendation for a conversion factor from E. coli to fecal coliform. In a later SCWRRP 2007 study of natural open-space sites spread across southern California's coastal watersheds, the researchers stated an assumption that "E. coli levels typically equal 80% of fecal coliforms;" however, no basis was provided in the study report to support that assumption. It is inappropriate to assume that a Southern California-specific relationship would be applicable statewide. Fecal coliform bacteria are a large group of bacteria, including those that originate in feces (e.g., E. coli) as well as genera that are not of fecal origin	See response to comment 2.05.	No

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		(e.g., Enterobacter, Klebsiella, Citrobacter). The EPA's 2012 Criteria noted that "Scientific advancements in microbiological, statistical, and epidemiological methods have demonstrated that culturable enterococci and E. coli are better indicators of fecal contamination than the previously used general indicators, total coliforms and fecal coliforms." Fecal coliform can be naturally present in the environment due to regrowth and wildlife, in addition to human sources. The composition of fecal coliform bacteria present can vary due to the sources of bacteria. Any conversion factors used to estimate E. coli from fecal coliform would be site-specific. It is inappropriate to apply one conversion factor statewide. In other locations in the United States, state environmental agencies have developed region-specific ratios to convert fecal coliform data to E. coli to align with the EPA-recommended criteria. A summary of a few conversion factors is shown in Table 1. A report by the United States Geological Survey (USGS) noted that: "[E. coli to fecal coliform] ratios and regression models are site specific and make it possible to convert historic fecal coliform bacteria data to estimated E. coli densities for the selected sites," and further noted that variation between locations is probably due to site-specific factors such as sources of bacteria and water quality conditions.		
Central Valley Irrigated Lands Regulatory Program Coalitions Representative: Donald Ikemiya	8.01	The above named Central Valley Irrigated Lands Regulatory Program (ILRP) Coalitions (Coalitions) appreciate the opportunity to comment on the proposed changes to the Water Quality Control Plan for Inland Surface Water, Enclosed Bays, and Estuaries of California – Bacteria Provisions and Water Quality Standards Variance Policy (Bacteria Provisions). The proposed changes authorize the State and Regional Water Boards to adopt water quality standards and variances consistent with federal regulation. The State Water Board recommends establishing a risk protection level based on a statistical threshold value of colony forming units. The above Coalitions support the proposed changes in the State Water Quality Control Board, Draft Staff Report dated June 30, 2017. Additionally, the above Coalitions support the proposed new bacteria water quality objectives for the protection of Water Contact Recreation (REC-1). The proposed revisions allow for the adoption of seasonal suspension of the REC-1 beneficial use as well as the establishment of a definition for Limited Water Contact Recreation (LREC-1). LREC-1 would allow for a new beneficial use designation, where contact recreation is limited due to restricted access or very shallow depth. This designation is critical for Coalitions who monitor indicator bacteria in areas where traditional REC-1 use is not realized due to physical barriers. The proposed revisions enable the Coalitions to utilize a reasonable approach which appropriately reflects monitored water ways and exposure risks. Additionally, the Bacteria Provisions allow the Coalitions to utilize	Comment noted. See response to comment 3.15	No

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		resources to appropriately address potential impacts to water quality using an appropriate scientific basis.		
City of Los Angles Sanitation Representative: Enrique C. Zaldivar	9.01	The proposed Bacteria Provisions will likely necessitate additional implementation actions above and beyond what are already planned, resulting in additional costs to the City's residents.	A report titled "Economic Analysis of Proposed Water Quality Objective for Pathogens in the State of California" was prepared under a U.S. EPA contract by Abt Associates which describes the economic considerations of the proposed Bacteria Provisions. The findings of this report are discussed in Chapter 10 section 10.4 of the Staff Report. Additionally, a link to the report is provided on the Bacteria Provisions program webpage and within Chapter 12 of the Staff Report. Specifically, Chapter 10, which is informed by the Abt Associates report, analyzes whether the proposed objectives are currently being attained, what methods are available to achieve compliance with the objectives, and the costs associated with those methods. The comment does not identify what additional implementation actions are reasonably foreseeable that are not discussed in Chapter 6 of the Staff Report.	No
	9.02	LASAN supports the State Water Board's efforts to update water quality objectives to reflect the current state of the science. Additionally, LASAN supports the State Water Board's inclusion of implementation provisions developed by the Los Angeles Regional Water Quality Control Board as part of TMDL development in our region, as well as the new implementation provisions outlined in the proposal.	Comment noted.	No
	9.03	1. The state of the science related to human health protection and bacteria indicators is rapidly evolving. Research aimed at measuring human sources of bacteria and sources of pathogens continues to bring new information to light that improves our ability to protect human health and manage the risks associated with recreation in our local waters. As part of the ongoing research, alterative indicators (other than E. coli and enterococcus) are being identified that may demonstrate a stronger link to human health. Focusing on those indicators as part of TMDL implementation would result in more effective control measures. However, the proposed statewide water quality objectives (WQOs) are based on E. coli and enterococcus levels without the ability to shift indicators to meet the same level of protection based on site specific conditions. The United States Environmental Protection Agency's (USEPA's) 2012 recreational water quality criteria (RWQC) includes a number of options for developing site	See responses to comments 4.01 and 4.02.	No

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		specific criteria. To allow the utilization for potentially more effective indicators and site specific conditions, LASAN requests that the State Water Board acknowledge the following in the Bacteria Provisions: Attaining the risk end point (32 illnesses per 1,000 recreators) is the top priority and the proposed indicators represent the default WQOs to meet that end point, but site specific information may be utilized to appropriately modify the indicators or concentrations so long as they provide the same level of protection.		
	9.04	2. The proposed Ocean Plan amendments establish State Water Board Water-Contact Objectives based on USEPA's 2012 marine enterococcus RWQC and describe California Department of Public Health (CDPH) standards that are based on the historical enterococcus criterion, as well as total and fecal coliform criteria. However, the discussion on the difference in the applicability of the statewide objectives and the CDPH standards is unclear. This could lead to confusion about the expected endpoints for clean water programs beyond the Clean Water Act Section 303(d) List, such as Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) permits, and TMDLs. As such, LASAN requests that the State Water Board clarify Section III.D.1.a (by inserting the underlined language) as follows: "Any of the bacteria water quality objectives identified in Section I.IB.1.a shall be implemented, ... "Also, clarify in Section III.D.1.d that Section II.B.1.a bacteria objectives shall be used in water body assessments and establishing TMDL endpoints.	See responses to comment 4.17 and 33.18.	No
	9.05	3. As exemplified by a number of currently implemented State Water Board policies, it is extremely beneficial to all stakeholders when statewide policy is clear with respect to its expectations and provides explicit guidance for achieving those expectations. Provision IV.E.4 of the proposed Bacteria Provisions states: "A WATER BOARD may suspend the water contact recreation (REC-I) beneficial use to reflect water conditions considered inapplicable or unsafe for the REC-I beneficial use due to low water flows ... A flow measure ... shall be established by the WATER BOARD to describe specific conditions during which the seasonal suspension would apply. " LASAN supports considerations for low-flow conditions; however, defining low flow consistent with the available literature would be helpful. LASAN requests that such a definition be provided and is available to discuss potential definitions. Although a definition of low flow would be most helpful, at a minimum, the Bacteria Provisions should provide the Water Boards and water quality management professionals with clearer guidance and/or examples of when the suspension should apply. Lastly, given that most waterbodies located within Southern California could be exhibiting low flow throughout the year	See responses to comments 3.15 and 5.02. If a waterbody were exhibiting low flow throughout the year such that the REC-1 use did not exist the Regional Water Board could explore designating the water with the LREC-1 beneficial use consistent with Chapter IV.E.5 of the ISWEBE Bacteria Provisions.	No

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		(except for during and immediately following significant rainfall events), LASAN suggests that the low water flow suspension not be classified as a seasonal suspension. Instead, a distinct provision (similar to the provision provided for the high-flow suspension of the REC-1 beneficial use) could be incorporated.		
City of Malibu Representative: Craig George	10.01	We appreciate the effort SWRCB is making to address water quality concerns regarding pathogenic microorganisms in waters of the State of California. The Pacific Ocean and coastal streams are vital resources in our community. Overall, the City is supportive of the proposed water quality control plans' amendments.	Comment noted.	No
	10.02	Onsite Wastewater Treatment Systems Under Ocean Plan subsection III.D.2(a)(1) and ISWEBE subsection IV.E.2(a) the two plans' proposed amendments both state: The implementation procedures … apply to non-point source discharges except on-site wastewater treatment system discharges, and storm water discharges regulated pursuant to section 402(p) of the Clean Water Act except industrial storm water discharges, and may only be implemented within the context of a TMDL. The City of Malibu is situated in a coastal watershed area with abundant natural sources of fecal indicator bacteria. Malibu also has a significant number of onsite wastewater treatment systems (OWTS) serving existing development. We understand that it would be inappropriate to consider bacteria in OWTS discharges as natural sources in discharge permits for point sources (e.g., for effluent or groundwater limits in OWTS discharge permits), yet we are concerned that, as written, the amendment may be construed to mean that watershed areas where OWTS are present will be ineligible for application of Reference system /Antidegradation Approach (RSAA) and/or Natural Source Exclusion (NSE) procedures in the context of a Total Maximum Daily Load (TMDL) standard. It appears that, without any justification or explanation in the staff report, OWTS have been singled out among other anthropogenic non-point sources of bacteria, such as leaky sewers, that may be found in areas that otherwise will be eligible to implement the new procedures. We request that the amendments' language be modified so as to make watershed areas where OWTS are present eligible for application of the implementation procedures for natural sources.	The Bacteria Provisions for Part 3 of the ISWEBE at Chapter IV.E.2.a has been clarified as follows: > The implementation provisions procedures contained in Chapter IV.E.2 apply to municipal storm water discharges regulated pursuant to Clean Water Act section 402(p) and non-point source discharges except on-site wastewater treatment system discharges. These implementation provisions do not apply to NPDES discharges other than municipal storm water discharges. Similar revisions have been made to the Bacteria Provisions for the Amendment to the Ocean Plan at Chapter III.D.2.a(1). As the commenter noted onsite wastewater treatment systems (OWTS) and discharges are not considered natural sources, but watershed areas where OWTS are located can have natural sources of bacteria. Thus a TMDL using the Reference System/Antidegradation Approach or a Natural Source Exclusion Approach can be implemented in these areas to account for those natural sources of bacteria if the water quality is at least as good as an applicable reference system or it can be shown that all anthropogenic source of bacteria are identified, quantified, and controlled including those from OWTS and industrial storm water discharges—however the Reference System/Antidegradation Approach or a Natural Source	Yes

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			Exclusion Approach specifically may only apply to the waste load allocations and load allocations derived for the discharges identified in the Bacteria Provisions to which these approaches are applicable.	
	10.03	Stormwater As mentioned above, the City of Malibu is situated in a coastal watershed area which has abundant natural sources of bacteria. Malibu has several ocean beach monitoring sites where bacteria levels are found above recreational water quality objectives on a recurring basis. The North Santa Monica Bay Coastal Watersheds area is largely undeveloped (93% vacant land use), the majority of which is designated as natural open space. The City desires the ability to someday possibly use natural source compliance provisions for non-anthropogenic bacteria in stormwater flowing from undeveloped areas. As written, Ocean Plan subsection III.D.2(a)(1) and ISWEBE subsection IV.E.2(a) (quoted above) may be construed to mean that watershed areas where natural sources of bacteria affect stormwater quality will be ineligible for application of the implementation procedures for natural sources in the context of a TMDL or discharge permits for non-point sources. It appears that, without any justification or explanation in the staff report, stormwater flowing from undeveloped areas with no anthropogenic sources of bacteria has been excluded from eligibility to implement the new procedures. We request that the amendment language be modified so as to make natural sources of bacteria in stormwater eligible for application of implementation procedures contained in the amendments.	See response to comment 10.02 for the clarifying language added to the Bacteria Provisions. Municipal storm water discharges pursuant to the Clean Water Act section 402(p) and other non-point dischargers other than OWTS can be captured within the context of a TMDL using the Reference System/Antidegradation Approach or a Natural Source Exclusion Approach to account for natural sources of bacteria if the water quality is at least as good as an applicable reference system or it can be shown that all anthropogenic source of bacteria are identified, quantified, and controlled. Non-point source discharges would include storm water flowing from undeveloped areas.	No
	10.04	Site Specific Objectives In its 2012 updated Recreational Water Quality Criteria (RWQC), the United States Environmental Protection Agency (USEPA) began providing information on tools for developing alternative RWQC on a site-specific basis, such as epidemiological studies in both marine and fresh waters and quantitative microbial risk assessment (QMRA). Inasmuch as the proposed water quality control plans' amendments are based on the USEPA's 2012 RWQC, we anticipated the new bacteria provisions to include at least some recognition of these novel compliance approaches, and we expected the new provisions would facilitate the development of bacteria compliance approaches based on site-specific objectives, QMRA, and risk/illness based expressions of water quality standards. The absence of these approaches in the amendments is disappointing and we respectfully request that provisions to use these approaches be included in the plans' amendments.	See responses to comments 4.01 and 4.02.	No
City of Sacramento	11.01	The City supports the State Water Board's efforts to update the state's bacteria objectives and the variance policy. However, the City would like to	Comment noted.	No

Organization	No.	Comment	Response	Revision [1]
Representative: Sherill Huun		submit the following comments to support more effective implementation of actions by the regulated community to protect human health, and to strengthen the technical basis for the Bacteria Provisions.		
	11.02	Allow the reference system/antidegradation and natural source exclusion approaches to be applied to all waterbodies; The City supports the use of the reference system/antidegradation approach and natural sources exclusion approach, which will provide Regional Water Boards with flexibility to adapt the water quality objectives (WQOs) to their specific regions. It is important that stormwater agencies focus bacteria reduction efforts on anthropogenic sources. However, the City requests that these implementation tools not be limited to waterbodies that have an existing Total Maximum Daily Load (TMDL) or TMDL in development. The General MS4 Permit specifies a Pollutant Prioritization approach for permittees to implement stormwater management programs focused on their prioritized water quality constituents, to address priority water quality issues and preclude the need for TMDLs to be developed. It would be appropriate for dischargers to have the same tools available as they actively work to address bacteria as a water quality issue so as to preclude the need for TMDL development.	See response to comment 4.08.	No
	11.03	The City requests that the State Water Board allow the high flow and seasonal suspension of the REC- 1 beneficial use implementation provisions to be completed without a UAA. The requirement to complete a UAA requires review by USEPA, and places an unnecessary burden upon the dischargers and Regional Water Boards, which will likely impede these options from being implemented. The proposed Bacteria Provisions do not provide an adequate process or toolset to avoid costly and potentially unnecessary TMDL development and control programs. There is precedent within Regional Water Board Basin Plans for a temporary suspension of objectives, without a UAA. The Santa Ana Regional Water Board includes criteria within the Basin Plan for temporary suspension of recreational use designations and objectives, which can be implemented without a UAA. As part of the work that led to the adoption of the 2012 amendments to the Santa Ana Basin Plan recreation standards, the Stormwater Quality Standards Task Force considered the merits of and various alternatives for modifying the REC-1 definition to improve clarity and precision, based on careful consideration of the scientific basis of the 1986 USEPA Recreational Criteria and earlier criteria guidance. The Santa Ana Basin Plan provides definitions for site-specific flow triggers, eligibility for temporary suspensions, engineered or highly modified channels, and for the termination of the temporary suspension. The City suggests that the State Water Board either provide similar guidance, or allow Regional Water	See response to comment 4.14.	No

Organization	No.	Comment	Response	Revision [1]
		Boards to develop regional guidance for temporary suspensions without development of a UAA.		
	11.04	Thirdly, the City appreciates the inclusion of these implementation options in the Bacteria Provisions, and requests that the State Water Board provide implementation guidance to the Regional Water Boards and dischargers. The implementation options within the Bacteria Provisions provide a useful toolkit, but place a significant technical burden on the Regional Water Boards and dischargers – which will result in statewide inconsistencies. Guidance developed by the State Water Board would support statewide consistency for regulatory programs and technical evaluations.	See response to comment 4.09. The site-specific nature of the application of the implementation options in the Bacteria Provisions does not allow development of a general statewide guidance that would ensure the consistency and alleviate the need for site specific collection and analysis of data to support the approaches identified within the Bacteria Provisions.	No
	11.05	SPECIFY HOW SITE-SPECIFIC EVALUATIONS COULD BE FACILITATED THROUGH THE BACTERIA PROVISIONS - The proposed bacteria provisions include a consideration for Water Quality Standards Variances, which may be a mechanism for site specific evaluations for mixing zones, fate and transport, duration of impacts, among other factors, but the Bacteria Provisions do not specifically include those considerations. The City requests that the State Water Board staff provide language within the Bacteria Provisions that acknowledge that these are factors which may be considered with a Water Quality Standards Variance. As discussed in Comment 1, this is an additional area where guidance from the State Water Board would be useful in promoting consistency among Regional Water Boards in implementing the Bacteria Provisions.	See responses to comments 1.02, 4.01, 4.02, 3.09 and 3.10.	No
	11.06	ALLOW A SITE-SPECIFIC CONVERSION FACTOR TO BE USED TO CONVERT FECAL COLIFORM TO E. COLI WHEN APPROPRIATE -Appendix C of the Staff Report uses a conversion factor to convert fecal coliform objectives used in Regions 1, 5 and 6 to E. coli objectives, and to back calculate the associated risk levels. The conversion factor used is "E. coli is ~ 90% of Fecal Coliform (based on number used by Ocean Plan staff – M. Gjerde)." This conversion factor does not include a citation to scientific literature. At the Stakeholder Meeting on July 10, 2017, State Water Board staff suggested that the conversion factor came from a study conducted by the Southern California Coastal Water Research Program (SCCWRP), but staff did not remember specifics of the study. Communication with SCCWRP indicated that the Southern California Bight 1998 Regional Monitoring report was the source of the 0.9 ratio. This study included an interlaboratory comparison of indicator bacteria results among multiple laboratories that used samples spiked with wastewater influent. However, the study neither includes nor makes a recommendation for a conversion factor from E. coli to fecal coliform .In a later SCWRRP 2007 study of natural open-space sites spread across southern California's coastal watersheds, the researchers stated an assumption that "E. coli levels typically equal 80% of fecal coliforms;"sour	See response to comment 2.05.	No

Organization	No.	Comment	Response	Revision [1]
		however, no basis was provided in the study report to support that assumption.....In summary, the City requests that the State Water Board not include a single statewide conversion factor to estimate E. coli levels based on fecal coliform data, or, should qualify the use of this value with a statement that locally derived values are preferred. In addition, the Staff Report should provide a citation for any conversion factor that is used, along with an explanation of the conditions under which it was developed, and justification of why it is appropriate.		
	11.07	ACKNOWLEDGE THE RISK BASIS FOR THE BACTERIA PROVISIONS. The City requests that the State Water Board include a more detailed description of the risk level that is the basis for the Bacteria Provisions. The only mention of risk level in the Bacteria Provisions occurs in the header of the table presenting the WQOs. The proposed objectives do not acknowledge that the USEPA 2012 Criteria are standards based on an allowable risk level, derived from epidemiological studies. This risk level is the basis for the objective, and the E. coli objectives are the tool to implement the risk-based objective. Since the risk level is the driving mechanism to protect human health, it should be clearly described in both the Bacteria Provisions and Staff Report. The USEPA has a long record of establishing recreational criteria based on risk levels. The USEPA published recommended recreational water quality criteria in 1986 that establish the ambient condition of a recreational water body necessary to protect the designated use of primary contact recreation. Criteria values were selected for E. coli and enterococci in order to carry forward the same level of public health protection that were believed to be associated with the USEPA's previous criteria recommendations based on fecal coliform. The USEPA carried forward this risk-based approach in its 2012 Criteria development. Elevated levels of indicator bacteria were linked to increased risk of gastrointestinal illness through epidemiological studies conducted by USEPA during the National Epidemiological and Environmental Assessment of Recreational Water (NEEAR) and the 2012 Criteria were established to carry forward the risk-based approach to setting recreational criteria based on indicator bacteria levels. The ultimate goal of recreational water quality improvement programs is to reduce risk of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. As such, incorporating a discussion of the risk-basis for the Bacteria Provisions will allow them to be adaptable to the evolving science in the event that a better indicator becomes available and ensure a clear understanding that the risk-level established in the provisions is protective of human health.	See responses to comments 3.08 and 4.01.	No
	11.08	ALLOW INDICATORS IN ADDITION TO E. COLI AND ENTEROCOCCI THAT MAY BETTER CHARACTERIZE RISK. The focus on numeric objectives for culturable e. coli and enterococci,	See responses to comments 4.01, 4.02, and 4.03.	No

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		rather than on the appropriate risk level, does not allow for other pathogen indicators or analytical methods that may better characterize risk. The Bacteria Provisions recommend USEPA Methods 1603 and 1600 or other equivalent method to measure culturable e. coli and enterococci, respectively. This language may be interpreted as precluding the use of new methods to measure f. coli and enterococci that are not culture based, or if newly developed rapid indicators could be used. Rapid indicators to measure the presence of pathogens outside of a lab culture continue to be an active area of research. In addition, if an alternative indicator (e.g., coli phage) is developed and approved, the current Bacteria Provisions language could be problematic, assuming that the use of those methods is interpreted as a requirement. The City recommends that the text in the Bacteria Provisions specifying preferred methods be rewritten to be adaptable to future scientific developments such as improved measurements of e. coli and enterococci, as well as alternative indicators that better characterize human health risk.		
City of San Diego Representative: Drew Kleis	12.01	The City appreciates the State Water Resources Control Boards' (State Water Board) efforts to develop the proposed ISWEBE and Ocean Plan Provisions. Although the City supports the development of these statewide bacteria water quality policies, we have several comments that we respectfully request the State Water Board consider before finalizing these provisions.	Comment noted.	No
	12.02	Risk-Based Foundation: Both the ISWEBE and the Ocean Plan Provisions should provide more discussion on the risk protection level (i.e., 32 excess illnesses/1000 recreators) associated with the proposed bacteria water quality objectives, and that the Escherichia coli (E.coli) and enterococcus objectives are the indicators being used to interpret the risk level at this time. Following a risk-based approach, the provisions should also include language which allows incorporation of more accurate indicators of human sources of bacteria (or direct measures of pathogen risk), and the associated risk level, based on new scientific findings in the future. The City of San Diego supports the proposed water quality objectives (WQOs) to protect public health for waterbodies that support recreational uses. However, the City is concerned that the provisions do not include detailed discussion of the associated protective risk level (except for listing the associated illness rate in the Bacteria WQOs tables). The Staff Report includes some additional context, but does not adequately describe the relationship between the proposed risk level and WQOs. Incorporating a discussion of risk will clarify that the ultimate goal of recreational water quality improvement programs is to reduce risk of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. The Regional Boards should have the flexibility to incorporate	See responses to comments 3.08 and 4.01.	No

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		alternative and better indicators of human sources of bacteria and possibly direct measures of pathogens in the future so long as they are protective of an acceptable level of risk. USEPA and others are actively researching more reliable and specific indicators of human sources and it is expected that more reliable indicators will become available in the near future. Additionally, science regarding alternative indicators is evolving more rapidly than the regulatory process can keep up. The provisions should streamline the process using alternative indicators in the future as long as they provide equivalent protection of recreational beneficial uses. Recommendation: The provisions should clearly indicate that the objectives correspond to a protective risk level and that the Escherichia coli (E. coli) and Enterococcus objectives are the indicators being selected to interpret that risk level based on current science. The City also recommends that the provisions include language which allows incorporation of alternative indicators based on new scientific findings in the future under this risk-based approach. Modify language to: "Regional Water Boards may consider alternative indicators or direct measures of pathogens if they are scientifically defensible and can be used to effectively assess the protective level of risk of 32 illnesses per 1,000 recreators"		
	12.03	Replace Dated Bacteria Water Quality Indicators with the Proposed Water Quality Objectives: Both the ISWEBE and Ocean Plan Provisions should include language which requires State agencies and Regional Water Boards to update existing bacteria water quality objectives and values, including but not limited to AB411 /California Department of Public Health (CDPH) standards, based on fecal and total coliforms. These indicators are deemed to be unreliable by the United States Environmental Protection Agency (USEPA) and are not based on best available science. The City supports the use of E. coli and Enterococcus as bacteria water quality indicators, which USEPA recommended as superior to fecal and total coliform indicators: "Microorganisms that are potential indicators of fecal contamination are normally present in fecal material. Not all of these indicators, however, have a clear relationship to illness rates observed in epidemiological studies…two microorganisms that have consistently performed well as indicators of illness in sewage-contaminated waters during epidemiological studies are Enterococci in both marine and fresh water and E. coli in fresh water measured by culture (Prüss, 1998; Wade et al., 2003; Zmirou et al., 2003). Additionally, two epidemiological studies also demonstrate the utility of E. coli as an indicator as recommended in the 1986 criteria (Marion et al., 2010; Wiedenmann, 2006). Together the available body of information supports USEPA's 2012 Recreational Water Quality Criteria (RWQC) recommendations to use Enterococci and E. coli as indicators of fecal contamination" (pp. 9-10 of USEPA 2021 RWQC). However, the City is	See responses to comments 4.01, 4.17, and 33.18. Chapter III.E.3. of Part 3 of the ISWEBE plan states: "The Bacteria Water Quality Objectives supersede any numeric water quality objective for bacteria for the REC-1 beneficial use contained in a Basin Plan…" The Ocean Plan has a similar provision. This effectively replaces all water quality objectives for bacteria as it applies to REC-1 uses currently found in the Regional Water Board basin plans with *E.coli* and enterococcus based on the most recent science provide by U.S. EPA. The current Ocean Plan fecal coliform objective will be retained based on a review of more recent California-specific epidemiology studies showing that fecal coliform is a better indicator of gastrointestinal illness under certain water exposures and environmental conditions in ocean waters. Please refer to section 5.2.3 of the Staff Report for further information.	No

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		concerned that, although both provisions establish new objectives based on E. coli and Enterococci, the provisions do not prevent Regional Water Boards from continuing to use fecal and total coliforms. Latest USEPA studies demonstrated that these two indicators are not as reliable as E. coli and Enterococci and the numeric values associated with fecal and total coliforms are not based on sound science. Recommendation: Add language that requires Regional Water Boards to update all existing bacteria WQOs to Enterococci and E. coli, or other alternative indicators of the protective risk level based on sound science.		
	12.04	Clarify Site-Specific Objectives: Both the ISWEBE and Ocean Plan Provisions should include a provision allowing for site specific objectives, and should specifically include the option to develop site-specific objectives using procedures outlined in USEPA's 2012 Recreational Water Quality Criteria (RWQC). --- The City supports the proposed language that bacteria WQOs do not supersede a site-specific numeric water quality objective for bacteria established for the REC-1 beneficial use (ISWEBE Provisions III. E.3). However, the Ocean Plan Provisions make no mention of site-specific objectives. Further, both provisions make no mention of developing site-specific objectives using procedures outlined in USEPA's 2012 RWQC (e.g. Quantitative Microbial Risk Assessment [QMRA]). USEPA encourages the development of site-specific bacteria objectives: "States could adopt site-specific alternative criteria to reflect local environmental conditions and human exposure patterns" and include examples of tools to develop the site-specific numeric values: "(1) an alternative health relationship derived using epidemiology with or without QMRA; (2) QMRA results to determine water quality values associated with a specific illness rate; or (3) a different indicator/method combination" (p. 48 of USEPA 2012 RWQC). Recommendation: Add a provision for allowing site-specific objectives, including an option to develop site specific objectives using procedures outlined in USEPA's 2012 RWQC. Furthermore, the following language in ISWEBE Provisions III. E.3 should be added to the Ocean Plan Provisions: "The BACTERIA WATER QUALITY OBJECTIVES do not supersede any site-specific numeric water quality objective for bacteria established for the REC-1 beneficial use".	See responses to comments 4.01, 4.02, and 4.03.	No
	12.05	Distinguish Dry Weather and Wet Weather Objectives: Both the ISWEBE and Ocean Plan Provisions make no distinction as to which objectives should apply during dry and wet weather. For southern California beaches in particular, the geometric mean should not apply to the wet weather season when storm events frequently occur. Only the statistical	See response to comment 4.06.	No

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		threshold value should apply during wet weather months at southern California beaches. ---The City is concerned that the provisions do not make a distinction as to which objectives should apply during dry and wet weather. Weekly samples are typically collected during the dry season as part of the AB411 beach monitoring program, which allows for calculation of a geometric mean (GM), assuming a sufficient number of samples are collected during the averaging period, in addition to comparison to the statistical threshold value (STV). Storm events are infrequent in southern California; therefore, a sufficient number of samples would typically not be available for calculation of a GM to represent wet weather conditions. As a result, only the STV should apply for wet weather in this region. Recommendation: Apply the GM and STV to dry-weather samples (only apply the STV when the sample size is insufficient for calculation of the GM). Only apply STV to wet weather samples.		
	12.06	Include Guidance on Use Attainability Analysis (UAA): The ISWEBE Provisions require development of a UAA in order to designate a water body under the Limited Water Contract Recreation (LREC-1) beneficial use or allow for high flow or seasonal suspensions. Although the City supports the Provisions' requirement that UAAs be completed prior to designation with the LREC-1 beneficial use, as required under existing law, the Provisions do not provide guidance as to how an approvable UAA should be conducted or alternative methods that could be used to determine appropriate beneficial uses. The State Water Board should develop guidelines for conducting such UAAs to reduce the burden on Regional Water Boards and permittees and maintain a level of consistency in UAA requirements across the state. -- The City supports that the provisions allow for the Regional Water Boards to designate waterbodies under the Limited Water Contact Recreation (LREC-1) beneficial use, and allow for high flow or seasonal suspensions. However, the City is concerned that the provisions require development of a Use Attainability Analysis (UAA) to implement these designations but provide no further details on the UAA methods, and requirements, or alternatives that could streamline the process. The UAA requirement would create a large burden on permittees and the Regional Water Boards. High flow suspensions have been developed in the Santa Ana Region without the use of a UAA. The State Water Board should not require UAAs for high flow and seasonal suspensions in all situations (?), and should develop guidelines to streamline development of the suspensions and UAAs for LREC-1 to reduce the burden on Regional Water Boards and permittees and to maintain a level of consistency in developing these suspensions across the state. Recommendation: The City supports the requirement to complete a UAA before designating LREC-1 for a specific water body. The State Water Board	See response to comment 4.14. Additionally, as noted in Table 13 in Chapter 11 of the Staff Report, the LREC-1 use designation implementation provisions refer to State Water Board Resolution 2005-0015, and Water Quality Order 2005-0004. The identified references as well as any published UAA addressing 40 Code of Federal Regulations 131.10(g) factors identifying limited recreational use as a reason for beneficial use re-designation may be used as guidance material to perform a future LREC-1 UAA.	No

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		should provide streamlined UAA guidance and the requirements should clearly state that if approved, LREC-1 would replace an existing REC-1 beneficial use designation. Guidelines should also be developed to support incorporation of high flow and seasonal suspensions, such as identifying flow conditions that pose hazardous conditions, in lieu of requiring development of a UAA. These steps will protect recreational uses while reducing the burden on Regional Water Boards and permittees, and will also help maintain a level of consistency in applying these provisions across the state. It is important to note that Regional Water Boards can and have incorporated suspensions within Basin Plans as part of the objectives for individual waterbodies without needing a UAA. This type of strategy has also been approved by USEPA for other states such as Georgia, Oklahoma, Arkansas, and Missouri.		
	12.07	Strike Use Attainability Analysis Requirement for Suspensions: In the past, Regional Water Boards can and have incorporated suspensions within Basin Plans as part of the objectives for individual waterbodies without requiring a UAA. This type of strategy has been approved by USEPA for other states. UAAs require extensive and time-consuming analysis that could impede the accessibility and utility of the suspensions contained in the Provisions. In addition, attainability of REC-2 uses should also be evaluated in the implementation of suspensions.	See response to comment 4.14. Additionally, the attainability of the REC-2 beneficial use is not in the scope of the Bacteria Provisions. Consequently, REC-2 use is not addressed in the implementation of suspensions. Mention of REC-2 in the Staff Report was inadvertent and has been removed from Chapter 5 section 5.3.2 of the Staff Report.	Yes
	12.08	Consider Dilution for Storm Water: Both the ISWEBE and Ocean Plan Provisions do not consider dilution or a mixing zone for storm water. The provisions should account for dilution/mixing zone for storm water if recreational activity does not occur in the immediate vicinity of a storm water discharge and dilution of storm water is likely. --- Both the ISWEBE and Ocean Plan Provisions do not consider dilution and a mixing zone for stormwater. Recommendation: The City recommends adding language to account for dilution/a mixing zone for stormwater.	See response to comment 1.02.	No
	12.09	The City supports the proposed six week interval for the GM calculation. As USEPA acknowledged, “a longer duration would typically allow for more samples to be collected and that including more samples in calculation of the GM and STV improves the accuracy of the characterization of water quality” (p. 40 of USEPA’s 2012 RWQC). The City is concerned that a GM is to be calculated as a rolling 6-week GM and evaluated on a weekly basis. The use of the rolling GM can erroneously imply the persistence of bacterial water quality problems even when the risk is no longer present. USEPA’s 2012 RWQC recommend either a static or rolling average for the GM calculation (p. 40 of USEPA’s 2012 RWQC). Recommendation: The GM calculation should be replaced with “either a rolling or static 6-week GM”.	See response to comment 4.07.	No

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		Allow for flexibility to use either a rolling a static 6-week GM calculation to encourage larger sample sizes which provide more accurate assessments.		
	12.10	The City supports the application of the STV with a 10% allowable exceedance frequency, which is recommended by USEPA. A monthly calculation is specified using the STV and a 6-week rolling period (assessed weekly) is specified for use with the GM. The City supports using a longer time period for the STV, consistent with the rationale presented in the provisions. Recommendation: Assess the STV using a longer averaging period.	See responses to comments 3.03 and 4.07. As discussed in Chapter 5 section 5.2.5, U.S. EPA 2012 Recreational Water Quality Criteria recommends a STV duration of 30 days. Using a 6-week duration will lead to additional data in the calculation and a more statistically robust result. However, averaging period for STV of a single calendar month in a static manner is utilized instead of the 6-week averaging period applicable to the geometric mean to prevent reporting violations over a 6-week period when the actual violation may no longer exist. The shorter period of time for the STV is appropriate because the STV is an acute measure and reporting a violation should not be delayed.	No
	12.11	The City supports the reference system and natural sources exclusion approaches based on observed exceedances in an applicable reference system or due to a natural source. The proposed approaches, however, allow a certain frequency of exceedance of the STV and not the GM. The City believes that if GM exceedances are observed in a reference system or due to a natural source, this should be considered as allowable exceedances. Recommendation: Allowable exceedance frequencies should apply to both the STV and the GM.	See response to comment 4.09.	No
	12.12	Both provisions allow the reference system and natural source exclusion approaches to be used in the context of a TMDL and do not allow the approaches to apply to non-TMDL waterbodies. The City believes the use of these approaches should not be limited to only TMDL waterbodies. Recommendation: Both approaches should be allowed in non-TMDL waterbodies.	See response to comment 4.08.	No
	12.13	Both provisions require that all anthropogenic sources of bacteria be identified, quantified, and controlled prior to the implementation of the natural source exclusion approach. The City has a concern that the provisions provide no further details on the definition of anthropogenic bacteria sources and the demonstration of anthropogenic source control. Recommendation: The State Water Board should define "anthropogenic bacterial sources", provide guidelines for documenting control of these sources, and methods/tools for demonstrating that prerequisite requirements for the natural source exclusion approach have been met.	See response to comment 4.09, 6.04, and 23.05. Anthropogenic bacterial sources are broadly characterized as any source of bacteria that occur as a result of human activity. Exhaustively enumerating all potential anthropogenic sources of bacteria is infeasible and beyond the scope of the project. If a Regional Water Board chose to implement a natural sources exclusion approach they would identify all natural sources of bacteria as required by Chapter V.E.2 of the Bacteria Provisions for the ISWEBE plan. Any remaining	No

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			sources would be identified as anthropogenic and vary on a site-specific basis.	
	12.14	The analysis of economic considerations does not fully evaluate the additional increase in cost from the lower illness rate proposed in the provisions for stormwater dischargers, particularly during wet weather. The analysis presumes that the difference in the objectives is small and will therefore not result in additional costs to wastewater agencies, but does not assess stormwater agencies. Recommendation: Conduct an economic analysis for wet weather discharges to meet the lower illness rate.	Please see the response to comment 4.11. Additionally, Chapter 10 section 10.4 of the Staff Report was revised to clarify the economic analysis associated with storm water discharges. Storm water discharges to fresh and marine waters presently have to meet a bacteria objective or beach notification level set to achieve a slightly higher illness rate than the proposed objectives in the Bacteria Provisions, and it is expected that storm water permit requirements under the Bacteria Provisions will be broadly similar to current requirements. Stormwater permits currently require the discharger to develop and implement best management practices to the maximum extent practicable (for municipal dischargers and discharges from the California Department of Transportation's facilities) or using the best conventional pollutant control technology (for industrial and construction discharges). These requirements are not expected to change due to the Bacteria Provisions, best management practices will continue to be required, and possible incremental costs will be relatively low. Finally, the Bacteria Provisions include mechanisms which, if implemented, could further reduce the compliance burden for some municipal storm water permittees, such as high-flow and seasonal suspensions (for inland surface waters, enclosed bays, and estuaries) and natural background/reference condition adjustments (for all waters).	Yes
	12.15	The City is concerned that when a suspension is implemented, the provisions make clear that the REC-2 objectives still apply and no changes to the REC-2 objectives are included. Especially during a high flow condition, both REC-1 and REC-2 may not be supported due to safety concerns. Attainability of both REC-1 and REC-2 uses should be determined in the implementation of the suspensions. The Staff Report notes several times in Section 5.3.2 that REC-1 and REC-2 beneficial uses are not fully attainable during high flow events that justify the suspension of REC-1 objectives. This language is inconsistent with the exclusion of REC-2 from the suspensions in the Bacteria Provisions.	See response to comment 4.15.	No

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		Recommendation: Application of the suspensions to REC-2 beneficial uses should also be considered.		
	12.16	The City is concerned that the provisions maintain the AB411/CDPH standards but do not provide a clear distinction of the differences between the new bacteria WQOs and the AB411/CDPH standards and how the latter should be used. The language appears to state that all of the objectives would be used for permitting, but only the new objectives should be used for 303(d) listing decisions. Further, the continuing use of fecal and total coliform-based numeric values are not recommended as discussed in Comment 2. Recommendation: Replace the AB411/CDPH standards with State approved bacteria WQOs.	See responses to comment 4.17 and 33.18.	No
City of Watsonville Representative: Steve Palmisano	13.01	The City of Watsonville is a State recognized economically disadvantaged community (DAC) based on population and median household income. The City has been implementing pathogen TMDL requirements for compliance with the State Water Resources Control Board Small Municipal Separate Stormwater System Phase II permit (MS4 permit). This permit has been extremely challenging to implement given the level of service and requirements needed to stay in compliance with the program. Small DACs such as Watsonville simply do not have the revenue to comply with such extensive unfunded regulatory programs, and it puts undue financial burden on communities already struggling to meet basic public health and safety needs. It is critical that economic feasibility be considered as part of permit regulations.	See response to comment 2.02 and 9.01. Additionally, the Bacteria Provisions do not contain specific implementation requirements. The Bacteria Water Quality Objectives do not supersede or disturb existing TMDLs for the control of bacteria that support the REC-1 use that are established prior to the effective date of the Bacteria Provisions. For example, see Part 3 of the ISWEBE, Chapter III.E.3, which was revised to clarify this point (which was previously addressed in the draft Part 3 at Chapter IV.E.1). As a result, the economic analysis does not evaluate the economic factors or costs associated with existing permit requirements implemented pursuant to existing TMDLs.	No
	13.02	The bacteria provisions do not specify attainment of pathogen reductions for natural (birds and wildlife) and other uncontrollable sources, which account for the vast majority of contributions of fecal indicator bacteria (FIB). These uncontrollable sources in urban runoff and receiving waters may make attainment of waste load allocations and water quality objectives nearly impossible, particularly in urban areas. The proposed REC-1 variance is not attainable in sloughs. A reasonable variance needs to be considered for TMDL impacted water bodies that have a WAAP for pathogens	See responses to comments 3.09, 3.10, 3.12, and 22.05. The Bacteria Provisions identify the federal framework by which a Regional Water Board or State Water Board may establish a variance; the Bacteria Provisions do not establish any variance. A variance may be applied to a slough or other estuarine waterbody.	No
	13.03	The LREC-1 standard could be applied to the TMDL impacted slough system. However, there are no numeric criteria associated with LREC-1 designation. Numeric water quality objectives for LREC-1 need to be established and defined in the bacteria provisions.	See response to comment 3.15.	No
County of Los Angeles and the	14.01	For waterbodies with traditionally low level of recreational use, the bacteria criteria corresponding to 36 per 1,000 illnesses rate should be used. As	See responses to comments 2.02, 3.08, 4.01, and 4.02.	No

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Los Angeles County Flood Control District Representative: Daniel J. Lafferty		indicated in the staff report, the U.S. Environmental Protection Agency's (USEPA) 2012 recreational water quality criteria (RWQC) recommendations include criteria based on two estimated illness rates — 32 and 36 per 1,000 primary contact recreators. The determination of which to use is left to the States' discretion. The 2012 RWQC states: "EPA recommends that states make a risk management decision regarding illness rate which will determine which set (based on illness rate selected) of criteria values are most appropriate for their waters. The designated use of primary contact recreation would be protected if either set of criteria is adopted into the state [water quality standards (WQS)] and approved by EPA. "(Office of Water 820-F-12-058) The State Water Quality Control Board (State Water Board) is currently recommending the use of criteria corresponding to the 32 per 1,000 illness rate for all waterbodies. While this is the most conservative approach, we~ are concerned that it is overly conservative and can inadvertently drive up compliance costs. An alternate approach would be incorporating criteria corresponding to the 32 per 1,000 illness rate in waterbodies that have high level of recreational use, such as public beaches, and using the 36 per 1,000 illness rate for waterbodies with low or minimal water contact recreation, such as flood control channels. This approach can be equally protective of public health and more cost-effective over time. It is worth noting that USEPA's 2012 RWQC are based on studies conducted at coastal beaches where the intensity of recreational use is high relative to that at urban flood control channels. As a result, the criteria corresponding to the 32 per 1,000 illness rate is overly conservative for waterbodies that have a low level of recreational use. As acknowledged by USEPA, recreational waterbodies that are predominantly impacted by nonhumanfecal sources (such as stormwater discharges) have relatively lower public health risk than those impacted by wastewater discharges. This suggests that the criteria corresponding to the 36 per 1,000 illness rate can be appropriate for waterbodies that do not have a high level of recreational use and are not predominately impacted by sources of human fecal matter. Therefore, we request that State Water Board adopt a criteria corresponding to the 36 per 1,000 illness rate for waterbodies that have low level of recreational use and criteria corresponding to the 32 per 1,000 illness rate for waterbodies with high level of recreational use.		
	14.02	The State's Bacteria Provisions should allow the development of site-specific bacteria objectives using quantitative microbial risk assessment (QMRA) and provide appropriate guidance for implementing the QMRA. In its 2012 RWQC document, USEPA indicated that the source of microbial contamination is an important factor to be considered in determining human health risk in recreational waters. The risk to humans by fecal	See responses to comments 4.01 and 4.02.	No

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		contamination from non-human sources has been shown to be less than those from human sources. Consequently, USEPA has provided scientific tools, such as QMRA for developing alternative site-specific bacteria criteria for waterbodies that are predominantly impacted by non-human fecal sources. State Water Board's position on the issue of site-specific objectives requires clarification. The development of site-specific objectives is not included in the options considered, nor is it addressed elsewhere in the staff report. As discussed above in comment I, the cost of complying with overly conservative standards could be much higher than the cost of developing site-specific objectives. In Southern California, many stormwater agencies, as well as regulatory agencies, including the Los Angeles Regional Water Quality Control Board and USEPA Region 9, have shown interest in utilizing QMRA to develop site-specific bacteria criteria for sites where sources are characterized predominantly as non-human. It is important that the State Water Board recognize and allow the use of QMRA, as well as provide a guidance for purposes of site-specific criteria development in California. Accordingly, we request the addition of a new element on QMRA, as well as a guidance on how to implement the QMRA to the proposed bacteria provisions.		
	14.03	Exceedances of geometric mean objectives should be allowed under the reference system/antidegradation and natural sources exclusion approaches. The proposed amendment of the State's Bacteria Provisions only allows an exceedance of the statistical threshold value (STV) but not the geometric mean (GM) under the reference system/antidegradation and natural sources exclusion approaches. This inconsistent application of reference system and natural sources exclusion approaches is not based on science and potentially would require the treatment of non-anthropogenic sources of bacteria. Given the fact that non-anthropogenic sources can cause significant exceedances of the GM, State Water Board should re-assess its approach on the implementation of the GM standards. Studies conducted at non-human source-impacted waterbodies in southern California show that the GM objectives are frequently exceeded in these waterbodies as is the case for STV objectives. Based on the findings of these studies, on average, E. coli exceeds the GM objectives 16 percent of the time at freshwater reference sites in southern California. Further, at Leo Cabrillo Beach, one of the reference sites commonly used in the Los Angeles Region, the GM objectives exceeded at a rate of over 20 percent. These exceedances correlate with the STV exceedances. However, the proposed amendment does not consider these exceedances	See response to comment 4.09.	No

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		of GM that are caused by natural sources despite their correlation with exceedances of STV. Therefore, we request that GM exceedances be allowed, similar to STV, based on local reference systems where naturally generated bacteria sources are known to cause exceedances.		
	14.04	Allow the application of the reference system/antidegradation and the natural sources exclusion approaches outside of a TMDL. The proposed amendment of the State's Bacteria Provisions only allows the reference system/ antidegradation approach and the natural sources exclusion approach to be used in the context of a TMDL. Consequently, for a water body that has no bacteria TMDL, these approaches would not be available for use under the current proposal. The application of these approaches should not be limited to waterbodies with TMDLs; it should apply to all waterbodies with or without a TMDL.	See response to comment 4.08.	No
	14.05	The State should provide guidance for the implementation of the natural sources exclusion approach. Currently, no guidance exists on how to implement the natural sources exclusion approach, despite amendments in both the Los Angeles Region's and San Diego Region's Basin Plans allowing the use of the natural sources exclusion approach. In the Los Angeles Region, all Bacteria TMDLs address natural sources of bacteria using the reference system /antidegradation approach. This is partly due to the confusion behind implementing the natural sources exclusion approach. Thus, rather than dealing with the ambiguity of this approach, all Bacteria TMDLs utilized the better-defined reference system/antidegradation approach. To avoid a repeat of this problem Statewide, the State Water Board should provide a guidance or clarification regarding the implementation of the natural sources exclusion approach to remove the confusion behind its use and to allow the natural sources exclusion approach to be a useable tool for all regions.	See response to comment 4.09.	No
	14.06	The State should provide guidance for implementation of seasonal suspension of REC-1 beneficial use. The proposed amendment of the State's Bacteria Provisions allows the seasonal suspension of REC-1 beneficial use if a use attainability analysis determines certain factors prevent the attainment of the use. As indicated in the staff report, some examples of these factors include: • Naturally occurring pollutant concentrations prevent the attainment of the use; or Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or Human caused conditions or source of	See response to comments 4.13, 4.14, and 6.06. The Regional Water Boards have the discretion to both evaluate the necessity of a temporary suspension as well as determine the specific flows and temperatures that best apply to the water bodies and recreation activities of the region.	No

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		pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place. However, the proposed amendment does not go into further detail regarding how any of these factors would be evaluated. For instance, it is unclear as to what water level would be considered low flow for allowing season suspension of the REC-1 beneficial use. We request that State Water Board provides detail guidance on the implementation of seasonal suspension. This guidance would help prevent confusion at the regional level and ensure consistency in the implementation of the seasonal suspension policy throughout the State.		
	14.07	Clarify that the bacteria objectives for REC-1 beneficial use would not apply to LREC-1 beneficial use The water quality objectives in the proposed amendment of the State's Board should clarify that the objectives are applicable only to REC-1 beneficial use. The State Water Board should clarify that the objectives are applicable only to REC-1 beneficial use and do not apply to Limited REC-1 (LREC-1) beneficial use to prevent misapplication of the objectives for the wrong beneficial use.	See response to comment 3.15. Additionally, the Staff Report Indicates in Table 1, Table 2, and language in Section 2.3.2 that the proposed Water Quality Objectives are intended to apply to REC-1 beneficial use. The Staff Report indicates in 2.3.3 that the "designation of the LREC-1 beneficial use could include the development of site specific bacteria objectives." The Regional Water Boards have the discretion to a conduct a UAA for designation of LREC-1 at water bodies that meet the restricted access and very low water depths criteria. The Regional Water Boards also have the discretion to propose bacteria objectives best suited for the local circumstances.	No
	14.08	High flow suspension and seasonal suspension should also apply to LREC-1 beneficial use. The proposed amendment includes the application of high flow suspension and seasonal suspension, where appropriate, for REC-1 beneficial use. The application of these suspensions should also include LREC-1 beneficial use.	The high flow and season suspension options outlined within the Bacteria Provisions are specific to REC-1 as the scope of the bacteria water quality objectives and associated implementation options are focused on the REC-1 beneficial use. However, the Provisions do not preclude a Regional Water Board from developing high flow or seasonal suspensions for LREC-1 beneficial uses.	No
	14.09	The proposed amendment should include a provision that requires the reconsideration of existing Bacteria TMDLs to ensure consistency with the State's Bacteria Provisions. In the proposed amendment of the State's Bacteria Provisions, there is currently no language requiring the Regional Boards to reopen their respective region's Bacteria TMDLs. Previously, the State put language in the Statewide Trash Amendments, requiring the Los Angeles Regional Board to reopen all their trash TMDLs within their region, except for two watersheds, within one year. This has helped all the Trash TMDLs become consistent with the State's standards. Thus, we are seeking similar language	See response to comment 2.02. The Bacteria Provisions provides that where any of the bacteria water quality objectives supersede a water quality objective for bacteria for which a TMDL was established, the TMDL remains in effect (Part 3 Section II.E.3. of the ISWEBE plan, Chapter and Section III.D.1.b. of the Ocean Plan). A Regional Water Quality Control Board may convene a public meeting to evaluate the effectiveness of the TMDLs in attaining any of the applicable bacteria water quality objectives. Allowing the Regional Water Boards the flexibility to determine the appropriateness	No

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		requiring the Regional Boards to reopen Bacteria TMDLs to ensure consistency with the State's Bacteria Provisions.	of adopted bacteria TMDLs is appropriate given the nature of the pollutant and the existing point and non-point source controls. The Trash Amendments contained a narrative objective for trash and a prohibition of discharge with specific implementation requirements. The Trash Plan directed the Los Angeles Regional Board to reconsider the scope of its Trash TMDLs, except those pertaining to the Los Angeles River and Ballona Creek watersheds, to give particular focus of an implementation approach on high generating trash areas. Unlike the Trash Plan, the Bacteria Provisions do not contain requirements to implement a prohibition of a discharge. Therefore, the Bacteria Provisions would not require the Regional Water Boards to reopen existing TMDLs to evaluate approaches in light of approaches not identified in the Bacteria Provisions. The existing bacteria TMDLs will remain in effect to achieve water quality standards but a Regional Water Board may consider whether to reevaluate existing regulatory approaches.	
The County of Orange and the Orange County Flood Control District Representative: Chris Crompton	15.01	The County appreciated the large amount of work that has been put into the development of the Bacteria Provisions and supports the efforts made by the State Water Board to improve the policy for recreational waters.	Comment noted.	No
	15.02	USEPA's 2012 Recreational Water Quality Criteria provides a risk-based approach to recreational water quality that provides flexibility in reducing the risk of illness to recreational users rather than being solely focused on reducing densities of fecal indicator bacteria (FIB). In translating USEPA's approach, however, the proposed Bacteria Provisions and Staff Report, do not clearly set forth the risk-level basis for the proposed numeric criteria for E. coli and Enterococci, and do not discuss the limitations of using FIBs to demonstrate health risk.	See responses to comments 3.08, 4.01, and 4.02.	No
	15.03	The Bacteria Provisions further, and lack flexibility to allow Regional Boards and permittees dischargers to utilize alternative indicators (e.g. human markers), or take advantage of future scientific advancement which may identify indicators which better reflect risk to human health.	See responses to comments 4.01 and 4.02.	No
	15.04	The proposed Bacteria Provisions and its Staff Report should include a more in-depth discussion description of the risk based approach upon which the USEPA's 2012 guidance was premised and intended to reflect, and the risk-level basis of the proposed numeric criteria.	See responses to comments 3.08 and 4.01.	No

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	15.05	The Bacteria Provision should include and more flexibility for utilizing alternative indicators and evolving science to demonstrate that compliance with the established risk level.	See responses to comments 4.01 and 4.02.	No
	15.06	2. AB411 requirements (Ocean Plan 11.B.1.b and 111.D.l.c) The County is concerned that the proposed Bacteria Provisions will create dual requirements for beach water quality monitoring given that AB411, administered under the California Department of Public Health (CDPH), will continue to utilize Total Coliform and Fecal Coliform, based largely on USEP A's 1986 guidance and the 1997 Ocean Plan. AB411 requires beach monitoring standards to be established by CDPH, but does not strictly specify the indicators and numeric targets that should be used (Section 1, 115880(c)(2-3)). Until such time as AB411 regulations are updated by CDPH, language should be provided to clarify that AB411 requirements should be utilized for beach posting purposes but not for NPDES permit or any other regulatory purposes (e.g. 303(d) listing).	See responses to comments 4.17 and 33.18.	No
	15.07	3. Salinity thresholds (ISWEBE 111.E.2 Table 1 and Staff Report 2.3.2 and 5.2.2) The County supports using E.coli as a fresh water indicator and Enterococcus as a marine water indicator. However, the salinity thresholds defined in the Bacteria Provisions do not cover all waterbodies especially tidal prisms and estuaries that fluctuate considerably in salinity. Using Aliso Creek mouth in Orange County as an example, during the past three years, the recorded salinity level has been up to 20% higher and 80% lower than 10 parts per thousand, which does not fit into either the fresh water or marine water category. The Staff Report suggestion to select the indicator based on salinity conditions would result in more complicated monitoring and data analysis and slow down monitoring efforts that are highly driven by very tight sample holding times. Furthermore, as the Staff Report implicitly acknowledges in its discussion of the false positives that may result from sampling for Enterococcus in water bodies with salinity of less than 10 parts per thousand, a static application of the threshold to water bodies which fluctuate in salinity may result in unreliable data and result in reporting violations where no actual violation exists. The County requests that either salinity thresholds be adjusted so that all waterbodies can be covered or that more clear guidance be provided on how to implement the Bacteria Provisions with respect to waterbodies which fluctuate in salinity and/ or do not distinctly fall into either the freshwater or marine category. Consideration should be given to moving compliance monitoring out of these areas entirely into a downstream, more consistent marine environment.	See response to comment 4.16.	No

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	15.08	4. "Equally spaced" sampling (ISWEBE 111.E.2 Table 1 and Ocean Plan 11.B.1.(1)) The proposed Bacteria Provisions indicate that a "statistically sufficient number of samples" to determine attainment is "generally not less than 5 samples equally spaced over a six week period." While equal spacing may be planned, a number of actions can impact the spacing of sampling, especially in regional monitoring programs that are collaborations between agencies under different mandates (public health, sanitary sewer, and stormwater, for example). Other factors affecting spacing include resampling after an elevated bacteria reading and rescheduling of sampling due to rain or other weather events, both of which may be discouraged if equal spacing of samples is a requirement of the Bacteria Provisions. The reference to equally spaced samples should therefore be deleted or at a minimum clarified as not being a requirement based on factors such as field conditions and instances where back-to-back sampling may be appropriate (i.e. to verify an exceedance, etc.).	See response to comment 4.07.	No
	15.09	5. Dry and wet weather conditions (ISWEBE 111.E.2 Table 1 and Ocean Plan 11.B.1.(1)) The County is concerned that the proposed Bacteria Provisions do not distinguish between wet and dry weather conditions. Wet weather events are sporadic, short term events that do not have lasting impacts on receiving waters but often result in high bacterial indicators due to uncontrollable sources, many of which are natural. As a result, wet weather data should not be considered in the longer term conditions represented by the geomean or otherwise be used in conjunction with dry weather data to assess conditions. Similarly, the Statistical Threshold Value (STV) is derived in a manner similar to the Single Sample Maximum (SSM) and is sensitive to bacterial fluctuations. It should not be used as a dry weather objective. The 2004 EPA Great Lakes Rule utilized SSM only for beach notification and closure decisions and determined that the geomean is the more relevant value for ensuring that appropriate actions are taken to protect and improve water quality in dry weather. Even though the STV contains an underlying allowable exceedance rate of 10%, its use will still force more frequent monitoring, if used on a monthly basis, because once an exceedance is observed, at least ten more samples need to be below the STV before water quality can meet objectives. It is therefore recommended that: 1) language be included that acknowledges the distinct difference of wet weather conditions; 2) wet weather data be excluded from any geomean calculations; and 3) STV be applied only under conditions (wet or dry) where data is not available to calculate a geomean.	See response to comment 3.03 and 4.06.	No

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	15.10	6. Calculation of geometric mean (ISWEBE 111.E.2 Table 1, Ocean Plan 11.B.1.(1) and Staff Report 5.2.5) The Bacteria Provisions and Staff Report recognize that using a rolling average to calculate the STV could result in exceedances over a 6-week period when the actual exceedance no longer exists. The same issue applies to geomeans and yet a rolling average is still being proposed. Although a geomean is less sensitive to random variations, the use of rolling geomeans may still result in persistent identification of a violation even when the actual violation no longer exists. Consideration should be given to calculating geomeans on a static rather than rolling basis.	See response to comments 4.07.	No
	15.11	7. Limited Water Contact Recreation (LREC-1) beneficial use (ISWEBE II) The proposed Bacteria Provisions would allow Regional Boards to designate waterbodies under the LREC-1 beneficial use. Little guidance is provided, however, in the draft Staff Report for implementing such a designation other than it would require a Use Attainability Analysis (UAA). Additional guidance should be provided on the implementation of LREC beneficial use.	See response to comment 3.15.	No
	15.12	8. High flow suspensions (HFS) (ISWEBE IV .E.3 and 4) The County supports provisions allowing for high flow or seasonal suspensions, which recognize the danger or infeasibility of recreational activities in rivers or streams under certain circumstances. However, the County does not believe that a UAA is legally required for implementing such provisions and is concerned that such a requirement would make this implementation option overly burdensome and/ or impracticable. An HFS was adopted under the implementation provision of the Santa Ana Region Basin Plan through resolution No. R8-2012-0001, in which, the HFS criteria (e.g. velocity or depth) was numerically defined for all engineered or heavily modified streams and applies to all streams that meet the thresholds. It did not require development of UAA. Such a Basin Plan amendment approach has created an efficient pathway to apply suspension provisions to all streams in the region that are delineated according to the criteria without going through a UAA for every individual case. A similar approach should be followed in the Bacteria Provisions.	See response to comment 4.14.	No
	15.13	9. Mixing zones (Overall and Staff Report 2.7) The Ocean Plan includes mixing zones for discharges that are implemented through NPDES permits and some Regional Boards have limited language allowing mixing zones in their Basin Plans. However, there is no statewide policy on the application of mixing zones for point sources that contain bacteria. Adding mixing zone language to the Bacteria Provisions would be beneficial and remove a burden from Regional Boards to establish such provisions individually.	See response to comment 1.02.	No

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	15.14	10. Allowable exceedance frequencies (ISWEBE IV.E.2.b and Ocean Plan III.D.1.b & 111.D.2.) Inclusion of the reference system and natural source exclusion (NSE) approaches based on allowable exceedances is appropriate. However, limiting the allowable exceedance frequencies only to STV is inappropriate. When the STV is exceeded due to natural sources, geomean exceedances are often observed in natural reference systems as well, especially in estuary areas (SCCWRP, 2016). The State Board is encouraged to provide further guidance on how the reference system approach should be applied and allow Regional Boards to determine if the reference system approach and NSE can apply to both the geomean and STV depending on local results.	See response to comment 4.09.	No
	15.15	11. Implementation provisions for natural source of bacteria (ISWEBE IV.E.2 and Ocean Plan III.D.1.b & III.D.2) Provisions allowing for reference system and natural sources exclusion approaches, which recognize that natural sources of bacteria are beyond control, are appropriate. However, they should not be limited to only TMDL waterbodies. The County believes that establishing such approach and applying it to all qualified waterbodies can avoid 303(d) listing at the first place, more quickly and effectively address other non-TMDL waterbodies, and allow valuable resources to be directed to high priority water bodies that have controllable sources. By limiting such provisions to TMDL water bodies, Regional Board's will have to develop TMDLs for waterbodies that could be addressed by a more efficient method	See response to comment 4.08.	No
	15.16	12. Water Quality Standards Variances (ISWEBE IV.F and Ocean Plan III.N) The inclusion of the federal regulatory framework for the adoption of a water quality standards variance is a welcome step. It is an important regulatory tool when treatment technologies and pollutant minimization programs are not feasible.	Comment noted.	No
	15.17	13. Economic analysis for stormwater dischargers (Staff Report 10.4) The Economic Analysis does not address the fact that the requirements are more stringent than earlier requirement (risk level of 32 vs 36 illnesses per 1000) and it does not reflect the formidable challenges that municipalities face in dealing with the requirements, especially for wet weather. As far as cost savings, the analysis projects cost savings in going from three indicators to one indicator but does not consider that AB411 requirements will still require all three fecal indicator bacteria to be monitored.	Please see the responses to comments 4.11 and 12.14. Additionally, section 10.4 of the Staff Report describes monitoring costs that may be slightly reduced or increased depending on which indicator bacteria is currently being monitored by the facility. A facility would no longer need to sample for total coliform, but may see higher sampling costs associated with enterococci if enterococci are not part of the facility's current monitoring efforts. The commenter is correct that coastal counties monitoring to assess beach notification levels under Assembly Bill 411 (Title 17) will	No

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			not experience this change. Please refer to the revisions in the Staff Report at section 10.4.1.1.	
County of San Diego Representative: Todd E. Snyder	16.01	The County supports the State Water Resources Control Board's (State Board's) effort to align the State's recreational water quality standards with the United States Environmental Protection Agency's (USEPA's) 2012 Recreational Water Quality Criteria, which are based on recent epidemiological studies linking indicator bacteria levels to human health impacts. The County has identified some suggested modifications that will support efforts to use emerging science being developed in Region 9 and target control measures on the bacteria sources most likely to reduce the risk of illness for recreators.	Comment noted.	No
	16.02	1. Provide a more in-depth description of the risk-based approach to the Bacteria Provisions. The County requests that the State Board include a more detailed description of the risk level that is the basis for the Bacteria Provisions. The only mention of risk level in the Bacteria Provisions occur in the header of the WQOs table. Since risk level is the basis upon which fecal indicator bacteria levels are established to protect human health, it should be clearly described in both the Bacteria Provisions and the Staff Report. The USEPA has a long record of establishing recreational water quality criteria based on acceptable risk levels. The USEPA published recommended criteria in 1986 that establish the ambient condition of a recreational water body necessary to protect the designated use of primary contact recreation. Criteria values were selected for E. coli and enterococci in order to carry forward the same level of public health protection believed to be associated with USEPA's previous criteria recommendations based on fecal coliform. The USEPA carried forward this risk-based approach in its 2012 Criteria development. Elevated levels of indicator bacteria were linked to increased risk of gastrointestinal illness through epidemiological studies conducted by USEPA during the National Epidemiological and Environmental Assessment of Recreational Water (NEEAR) and the 2012 Criteria were established to carry forward the risk-based approach to setting recreational criteria based on corresponding indicator bacteria levels. At the same time, the science behind recreational water quality criteria is evolving rapidly. Research in southern California is at the forefront of scientific advancements that have increased the number of pathogens and indicators that can be measured in recreational waters, lowered the cost of sample analysis, and increased the reliability of health risk estimates at local sites based on site-specific data. The recent Surfer Health Study (SHS) conducted in the San Diego region was the second largest epidemiology study of its kind, and the first to focus on ocean recreation-related health outcomes during the winter season.	See responses to comments 3.08 and 4.01.	No

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		In addition to its epidemiological component, the SHS included a Quantitative Microbial Risk Assessment (QMRA), which found a different relationship between indicator bacteria levels and human health risk than the epidemiological studies used to establish the USEPA criteria. Importantly, the study also found frequent detection of human waste markers in runoff from two urban watersheds, suggesting that elimination of human bacteria sources may be the most effective way to reduce illness risk since human sources of fecal bacteria are known to contain more pathogens than other sources. The ultimate goal of recreational water quality improvement programs should be to reduce risk of illness to recreators, as opposed to focusing solely on reducing densities of fecal indicator bacteria. As such, incorporating a discussion of the risk-basis for the Provisions will allow them to be adaptable to the evolving science in the event that a better indicator becomes available. It will also ensure a clear understanding that the risk-level established in the provisions is protective of human health. Recommendation: Include a discussion within the Bacteria Provisions of the risk-level basis of the E. coli and Enterococci numeric criteria, and acknowledge that the fecal indicator-based criteria were established by USEPA to support an acceptable risk level.		
	16.03	2. Allow flexibility in the frequency of samples, and method of calculating the GM and STV to determine compliance The County supports the inclusion of a minimum of a six-week period for the calculation of the geometric mean (GM). However, we recommend that the Bacteria Provisions not require this calculation on a weekly, rolling basis and that the provisions allow Regional Water Boards to implement a different averaging period if justified by a site-specific analysis or within the context of a TMDL. A requirement for weekly, equally spaced samples is unnecessarily restrictive for stormwater programs, as it limits flexibility to adapt sampling frequency in response to weather conditions, or in response to exceedances. The requirement for a rolling GM calculation may result in the persistent identification of a violation even when the actual violation no longer exists. This same reasoning was cited in the Staff Report to justify performing a static statistical threshold value (STV): "Using a rolling average to calculate the STV could result in the reporting violations over a 6-week period where the actual violation no longer exists." There should be consistency between how the GM and STV are calculated. Recommendation: Allow flexibility in sampling timing by removing the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STV, remove the specification of a rolling calculation for the	See responses to comments 4.07 and 4.01.	No

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		GM, and allow Regional Water Boards to establish site-specific averaging periods and compliance determinations.		
	16.04	3. Seasonal considerations should guide the applicability of the objectives The 2012 Recreational Criteria were derived based on epidemiological studies in climates very different from California's (e.g., which do not have distinct wet and dry seasons). Within California, there are areas with disparate patterns of pollutant concentrations between dry and wet conditions, with high pollutant runoff occurring during infrequent wet events confined to a distinct wet season. The analysis of the objectives should clearly evaluate the applicability of the science to these disparate conditions and identify appropriate implementation procedures for the objectives under the two conditions.	See response to comment 4.01 and 4.06.	No
	16.05	Under the California Water Code (Section 13241), the State Board and Regional Boards are required to consider a number of factors when adopting water quality objectives, including in relevant part here: "Past, present and probable future beneficial uses of water, and water quality conditions that could reasonably be achieved through coordinated control of all factors which affect water quality in the area". The Staff Report should include appropriate information separately for wet and dry weather events to ensure that the State Board has all of the necessary information to consider the required 13241 factors. Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. The language in the draft Bacteria Provisions does not indicate if differences between wet and dry conditions were evaluated in the Section 13241 analysis. Without such information, the State Board will be unable to properly consider compliance with section 13241. In short, such considerations might result in different requirements for wet weather since achieving the proposed objectives during wet weather may not be reasonable to achieve. Further, implementation provisions for WQOs should clearly define implementation requirements for both wet and dry weather. The implementation procedures should be developed based on the 13241 analysis results, consideration of the underlying science used to develop the objectives, consideration of the short duration of storm events, and the associated potential impacts to beneficial uses. Establishing water quality objectives should assess the ecological impact of wet weather exceedances and establish associated implementation procedures that account for allowable exceedances and impacts that occur as a result of the exceedance during wet weather as distinct from dry weather.	See response to comment 4.06.	No
	16.06	In order to address this issue, the County recommends the Bacteria Provisions be amended to exclude data collected during wet weather	See responses to comments 4.06, 4.07, and 4.09. Setting a weather-specific bacteria water quality	No

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		events from GM calculations and only apply the acute STV endpoint to wet weather events. A similar approach is currently in place for AB411 data such that GM calculations only include dry weather events. The epidemiological studies that were the basis for the 2012 USEPA criteria were used to establish relationships with indicator bacteria collected during dry weather. Wet weather events are sporadic, short-term events that do not have lasting impacts on bacteria water quality in receiving waters. As a result, wet weather data is not appropriate to be considered in the longer term conditions represented by the GM. Because the GM and STV both offer the same level of risk protection, using only the STV for wet weather conditions will not result in higher risk to human health and will be more representative of impacts from wet weather events. In addition, the implementation section needs to be amended to provide explicit guidance to the Regional Water Boards on how to apply the WQOs during wet and dry weather conditions. Recommendation: Conduct a 13241 analysis specific to wet weather and modify the objectives for wet weather if necessary after the analysis; and specify that the GM is to be calculated based on data from dry weather conditions only, and that only the STV should apply for wet weather events.	objective would require a site-specific or region-specific evaluation. The Bacteria Provisions were revised to allow a Regional Water Board's Basin Plan to contain a site-specific bacteria objective that is developed before or after the effective date of the Bacteria Provisions. Providing additional statewide guidance would not be appropriate given the site specific nature of the analysis.	
	16.07	4. Allow high flow and seasonal suspensions of the objectives without a use attainability analysis The County fully supports the State Board's inclusion of high flow and seasonal suspension of REC-1 beneficial use as implementation options in the Bacteria Provisions. However, we request that the State Board allow these to be completed without a use attainability analysis (UAA). The requirement to complete a UAA requires review by USEPA, and places an unnecessary burden upon the dischargers and Regional Boards, which will likely impede these options from being implemented. There is precedent within Regional Board Basin Plans for a temporary suspension of objectives. The Santa Ana Regional Board includes criteria within the Basin Plan for temporary suspension of recreational use designations and objectives, which can be implemented without a UAA. As part of the work that led to the adoption of the Santa Ana Basin Plan recreation standards amendments in 2012, the Stormwater Quality Standards Task Force considered the merits of, and various alternatives for, modifying the REC-1 definition to improve clarity and precision, based on careful consideration of the scientific basis of the 1986 USEPA Recreational Criteria and earlier criteria guidance. The Santa Ana Basin Plan provides definitions for site-specific flow triggers, eligibility for temporary suspensions, engineered or highly modified channels, and for the termination of the temporary suspension. The County suggests that the	See response to comment 4.14	No

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		State Board either provide similar guidance, or allow Regional Boards to develop regional guidance for temporary suspensions without development of a UAA. Recommendation: Remove the requirement to conduct a UAA to use the implementation provisions provided in the amendments (high flow suspension, seasonal suspension, etc.), and allow Regional Boards to develop region-specific guidance.		
	16.08	5. Allow for mixing zones in the Ocean Plan Bacteria Provisions The County encourages the State Board to incorporate mixing zones for stormwater and wastewater discharges within the Bacteria Provisions, and to allow the bacteria objectives to be calculated taking into account dilution as applicable, and/or for receiving water monitoring points to be located where discharges are mixed with receiving waters. Within the Staff Report, State Board staff include mixing zones for point sources within the "Issues eliminated from further consideration after early outreach and public consultation," and acknowledge that with no statewide policy, existing Regional Board policies and procedures will apply. Regional Water Boards would likely continue their current practices for allowing mixing zones where appropriate. The County is concerned that the Ocean Plan definition of Receiving Water on page 60 of the Ocean Plan and the lack of specific authorization and discussion of mixing zones for stormwater in the Ocean Plan may preclude the ability of the Regional Boards to apply a mixing zone for stormwater if desired. As noted in the Staff Report, the Ocean Plan already has a statewide policy regarding mixing zones for toxic pollutants which are implemented through NPDES Permits. It is logical to extend a similar policy to the Bacteria Provisions in order to establish a statewide standard for addressing stormwater discharges. A statewide standard would remove burden from individual Regional Boards to establish appropriate practices, and would be protective of recreational use in waters (such as oceans) where discharge and receiving water are mixed. This would also clarify that mixing zones are allowed for stormwater dischargers. Furthermore, the Surfers Health Study supports allowing a mixing zone for stormwater discharges since dilution factors for Enterococci ranged from 22 to 300 times from the mouth of the San Diego River to the nearby ocean beach recreation areas. The measured illness level at the beach recreation areas during storm events and the three days following the storm was also relatively low despite large exceedances of bacterial indicators standards in the San Diego River just upstream of the mixing zone with the ocean. Recommendation: Include language in the Ocean Plan Provisions and Staff Report to allow for mixing zones for stormwater dischargers.	See response to comment 1.02.	No

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	16.09	6. Specify that the objectives only apply to waters where ingestion is reasonably possible. The County requests that the State Board specify that the Bacteria Provisions do not apply to waters designated as REC-2 or other waters where ingestion is not reasonably possible, to be consistent with USEPA guidance on the applicability of the recreational objectives. The 2012 Criteria, and the prior 1986 Criteria, are based on epidemiologic studies of illness following full-body contact recreation. USEPA's rule promulgating E coli objectives for recreational freshwaters in certain Great Lakes states provides that the pathogen indicator objectives apply "only to those waters designated by a State or Territory for swimming, bathing, surfing or similar water contact recreation activities, not to waters designated for uses that only involve incidental contact." USEPA defines this "secondary contact" recreation as "those activities where most participants would have very little direct contact with the water and where ingestion of water is unlikely. Secondary contact activities may include wading, canoeing, motor boating, fishing, etc." Basin Plan definitions of REC-2 are functionally equivalent to the USEPA description of "secondary contact" recreation and some activities included in the REC-1 definition fall in this category. To avoid misinterpretation of the USEPA 2012 Criteria, it is important to only apply the objectives where ingestion of water is reasonably possible. Recommendation: Specify that the Bacteria Provisions are not applicable to REC-2 and waters where ingestion is not reasonably possible.	The bacteria water quality objectives apply to REC-1 waters. The REC-1 beneficial uses applies to uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. Provision III.E.A. of Part 3 of the Water Quality Control Plans for Inland Surface Waters, Enclosed Bays and Estuaries of California – Bacteria Provisions and Water Quality Standards Variance Policy states: “Chapter III.E.2 establishes water quality objectives for reasonable protection of people that recreate within all surface water enclosed bays, and estuaries of the state that have the water contact recreation beneficial use (REC-1).” The Amendment to the Ocean Plan has a similar statement (at Chapter II.B.1.a.(1)).	No
	16.10	7. The Economic Analysis should consider Stormwater in addition to Wastewater The County requests that the State Board consider the economic impact to stormwater dischargers within the Economic Analysis. The Staff Report only considers the cost savings for municipal wastewater treatment plants and industrial plants for bacteria monitoring, as the required indicators would be reduced from three to one. However, this is not the case for stormwater dischargers subject to AB411 monitoring requirements. Within the Staff Report, it is stated that monitoring costs will be reduced at popular public beaches, as only Enterococci would be required to be monitored. This statement conflicts with the inclusion of the AB411 Total coliform, Fecal coliform, and Enterococci objectives included within the Ocean Plan Bacteria Provisions. Recommendation: Modify the Staff Report Economic Analysis to consider the impact to stormwater dischargers.	See response to comment 12.14.	No
	16.11	8. Amendments should include the option to develop site-specific objectives using procedures outlined in the USEPA 2012 Criteria.	See responses to comments 4.01 and 4.02.	No

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		The ISWEBE Plan includes language that bacteria WQOs do not supersede any site specific numeric water quality objective for bacteria established for the REC-1 beneficial use (ISWEBE Provisions Ill. E.3). However, the Ocean Plan Provisions do not include similar language. Furthermore, neither Provision includes a discussion for developing site-specific objectives. Such an approach was encouraged in the USEPA 2012 Criteria (e.g. Quantitative Microbial Risk Assessment [QMRA]), which includes the following language: "States could adopt site-specific alternative criteria to reflect local environmental conditions and human exposure patterns" and include examples of tools to develop the site-specific numeric values: "{1) an alternative health relationship derived using epidemiology with or without QMRA; (2) QMRA results to determine water quality values associated with a specific illness rate; or (3) a different indicator/method combination." (USEPA 2012 Criteria, p. 48) As mentioned in Comment 1, the recent SHS in the San Diego region incorporated an epidemiological component and QMRA component, and found a different relationship between indicator bacteria levels and human health risk than the epidemiological studies that supported the US EPA criteria. The County would like to focus resources on mitigating human health risk, and such QMRA studies are critical in developing site-specific objectives that are protective of human health. The County strongly encourages the State Water Board to include implementation language supporting the development of site-specific objectives within the Bacteria Provisions as well as more detailed guidance in the Staff Report as that will streamline adoption of site-specific objectives if conducted. Recommendation: Include an option to develop site-specific objectives via QMRA or an equivalent approach in both the ISWEBE and Ocean Plan Provisions. Update the Staff Report to provide guidance on how to develop and streamline adoption of site-specific objectives.		
	16.12	9. Reassess all existing waterbodies included on the 303(d) List for REC-1 bacteria exceedances with the new WQOs. While many TMDLs have been developed for bacteria in San Diego County, several waterbodies are still included on the 2010 303(d) list as impaired due to indicator bacteria, pathogens, fecal coliform, total coliform, Enterococci, E.coli, or enteric viruses. Currently, the provisions do not address how these new WQOs will be used to evaluate legacy water body 303(d) listings. The County requests that the Bacteria Provisions require these listings to all be reassessed using the new, scientifically defensible WQOs. Any waterbodies that no longer meet the 303(d) Listing Policy's criteria for impairment should be delisted, regardless of whether or not they meet the delisting requirements. At a minimum, any water body	See response to comment 4.04.	No

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		undergoing TMDL development should be required to be reassessed for exceedances with the new WQOs prior to developing the TMDL. This requirement should be clearly stated in the Bacteria Provisions and discussed in the Staff Report in order to standardize the regional approach and avoid unnecessary TMDLs for waterbodies that are not in exceedance under the new objectives. Recommendation: Include language in the Bacteria Provisions requiring legacy 303(d) bacteria listings to be reassessed under the next 303(d) Listing cycle using the new WQOs and the criteria for listing (not delisting) waterbodies. Include language in the Staff Report requiring that development of any new bacteria TMDL must include an analysis of bacteria exceedances with respect to the new WQOs prior to TMDL development and implementation.		
County Sanitation Districts of Los Angeles County Representative: Ann T. Heil	17.01	The Sanitation Districts have followed and worked with State Water Resources Control Board (State Water Board) staff on bacterial objectives over the years and are appreciative of their efforts and their willingness to accept stakeholder input throughout the process. In general, the Sanitation Districts are supportive of State Water Board's efforts to ensure that the most effective bacteria indicators are used and to adopt statewide standards conforming to United States Environmental Protection Agency's (US EPA) recommendations.	Comment noted.	No
	17.02	Comment 1 - Support Enterococcus as the single indicator for marine waters Based on decades of experience monitoring the coastal ocean, the Sanitation Districts concur with the US EPA and State Water Board staff report findings that Enterococcus is an appropriate single indicator for marine waters.	Comment noted. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing California Ocean Plan because California-specific epidemiological studies provide data that suggest fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposure and environmental conditions. The Water Board will consider evaluating the fecal coliform water quality objective at a later date. Chapter 5 of the Staff Report provides justification for retaining fecal coliform.	No
	17.03	Comment 2- Support inclusion of the LREC-1 and suspension ofREC-1 where appropriate The Sanitation Districts support the inclusion of the LREC-I and suspension of the REC-I beneficial use designation during periods when recreational water conditions are unsafe or access is restricted. The provision should clarify that existing LREC-I designations and suspensions of REC-I beneficial uses currently adopted into Basin Plans shall remain in place.	The Bacteria Provisions provide a statewide definition for the LREC-1 beneficial use. The Bacteria Provisions will not impact any waters currently designated with the LREC-1 or bacteria objectives promulgated for the protection of the LREC-1 use. Commenter's suggested language is not needed because Part 3 of the ISWEBE of the Bacteria Provisions provides (at Chapter II) that the Regional Water Board are to use the definition of LREC-	No

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			1 to the extent that such activities are defined in the respective water quality control plan after the effective date of Part 3. As a result, a definition for the limited recreational use contained in a basin plan prior to the effective date of Part 3 would not be disrupted by the Bacteria Provisions nor would any related implementation.	
	17.04	Comment 3 -Procedures and allowances to adjust the geometric mean should be incorporated when natural bacteria levels contribute to an exceedance The Sanitation Districts agree that a reference system/antidegradation approach is a reasonable approach to quantify the non-anthropogenic contribution to fecal indictor bacteria (FIB) levels. However, the Sanitation Districts are concerned that where natural bacteria levels contribute to exceedance of bacteria standards, the current proposal only allows for adjustment of the statistical threshold value (STY). If a water body has a confirmed natural source of FIB, then an adjustment of the geometric mean (GM) should also be considered.	See response to comment 4.09.	No
	17.05	Comment 4- Requiring control of all anthropogenic sources before allowing for consideration of a natural source exclusion is inappropriate As currently proposed, the natural source exclusion approach can only be utilized after all anthropogenic sources of bacteria have been identified, quantified, and controlled; any anthropogenic loadings, no matter how slight, would prevent a Regional Water Board from considering a natural source exclusion. However, there are likely instances where minor anthropogenic sources have been identified but are not significantly contributing to the water quality exceedances due to overwhelmingly large natural loadings. In these instances, it seems wasteful and inefficient to require complete control of all anthropogenic sources before allowing for a natural source exclusion. This provision should instead permit a natural source exclusion unless an anthropogenic source is demonstrated to be significantly contributing to the water quality exceedance.	As discussed in Chapter 5 section 5.3.1 the requirements for utilizing a natural sources exclusion approach is consistent with what has been previously approved as basin plan amendments by U.S. EPA (see Chapter 12 of the Staff Report for numerous citations of approved basin plan amendments to account for natural sources of bacteria). If all anthropogenic sources are identified, quantified, and subsequently controlled to an extent that a risk to public health no longer exists, a natural source**s** exclusion approach could be utilized within the context of a TMDL.	No
Heal the Bay Representative: Steven Johnson	18.01	The State Board's interest to streamline processes, reduce the time and money involved in monitoring, and make the path to compliance appealing to entities across the state in the name of consistency is perplexing. Coming into full compliance allows for those involved to feel like they've done their job and can move on to other equally as pressing issues. This is especially understandable when considering the limited resources of everyone involved. But compliance-oriented provisions could actually do a disservice by lulling the people of California into a false sense of protection. Regulations that are easily met, but don't protect public health are more	Comment noted. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing California Ocean Plan because California-specific epidemiological studies provide data that suggest fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposure and environmental conditions. The Water Board will consider evaluating the fecal coliform	No

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		detrimental than regulations that are not met at all. Limiting bacteria regulations to only one indicator species would do exactly that.	water quality objective at a later date. Chapter 5 of the Staff Report provides justification for retaining fecal coliform. Additionally, please see responses to comments 3.08, 4.17, and 33.18.	
	18.02	The SWRCB should continue to require the use of both Fecal Coliform (E.coli) and Enterococcus standards for all monitoring of receiving waterbodies (freshwater, estuarine, and marine) with REC-1 and REC-2 designated beneficial uses. Though intestinal enterococci might make for a more ideal indicator for human health effecting pathogens, fecal indicator bacteria sampling should remain as it provides insight into how safe it is to swim in recreational waters. As documented on page 5 of the Bacteria Provisions Staff Report, the 2012 U.S. Environmental Protection Agency (EPA or USEPA) Recreational Water Quality Criteria recommends using enterococci as an indicator for marine waters and either enterococci or Escherichia coli (E. coli) as an indicator for fresh waters. Considering this we understand why the State Board is considering using the EPA's standards. But within the EPA's "2012 Recreational Water Quality Criteria" two-page summary sheet, the EPA reminds us that "Water Quality criteria recommendations are intended as guidance in establishing new or revised water quality standards," and that "states and authorized tribes have the discretion to adopt, where appropriate, other scientifically defensible water quality criteria that differ from EPA's recommended criteria." When did the EPA become the gold standard for the Golden State? In this light, the State Board should look at the EPA's recommendations as a start and implement slightly more rigorous provisions for our own coast where they would be even more protective of our beneficial uses. Heal the Bay recommends, in the interest to human health, to implement and maintain sampling and restrictions on fecal coliform bacteria as well as the EPA guidance for enterococci and E. coli. This will bolster the surveillance of the bacteria in both marine and fresh waters and will help human health in multiple ways. Considering marine waters, studies have shown that enterococci count is a good indicator for Cryptosporidium parvum, Giardia duodenalis, and Enterocytozoon bieneusi in recreational marine water. All of these pathogens are very dangerous to healthy individuals and deadly to the very young, the immunosuppressed, and the elderly. Enterococci are found in the feces of humans and other warm-blooded animals and were made the bacteria indicator of choice for marine waters by the EPA in the mid-1980s. Though it is easy to maintain that Enterococci might be the closest to an ideal indicator if we were forced to only have one, we argue that there is not much to be gained by doing so and in the consideration of human	See response to comment 3.08 for a discussion on the Bacteria Provisions use of the bacteria water quality criteria based on the lowest illness rate shown to correlate with public health. The U.S. EPA Recreational Water Quality Criteria has continuously refined the bacteriological indicators as they relate to public health based on better science and increased data. For decades, epidemiological studies have been used to evaluate how fecal indicator bacteria levels are associated with health effects of primary contact recreation on a quantitative basis. The 1986 criteria recommendations are supported by epidemiological studies conducted by U.S. EPA in the late 1970s and early 1980s. In those studies, enterococci and *E. coli* exhibited the strongest correlation to swimming-associated gastroenteritis. Because enterococci and *E. coli* correlate with illness, U.S. EPA recommended *E. coli* as the indicator to be measured in fresh water and enterococci as the indicator to be measured in both marine and fresh water. Both indicators continue to be used in epidemiological studies conducted throughout the world, including in the European Union and Canada. The World Health Organization recommends the use of enterococci as water-quality indicators for recreational waters. Meta-analyses and systematic reviews of epidemiological studies conducted worldwide indicate that these indicators generally provided substantial improvements over the indicators that were favored previously, such as total and fecal coliforms. Furthermore, during the development of the 2012 U.S. EPA Recreational Water Quality Criteria, a systematic review and meta-analysis of 27 non-U.S. EPA published studies evaluated the evidence linking specific microbial indicators of recreational water quality specific health	Yes

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		health the state could have a lot to lose. From our records, if enterococcus were the sole bacterial indicator sampled for in California beaches over the last ten years, 25% of the bacterial exceedances would have been missed. Looking at all of our Beach Report Card data from all of our beach sampling sites from 2007 to present, approximately 75% of our exceedances held enterococcus exceedances within (Fig.1). The remaining 25% had exceeded only for either fecal coliform, total coliform or both. Making a case for fecal coliform, it registered exceedances for 80% of the exceedances that Enterococcus did not. A Venn diagram providing a summary of bacteria indicator exceedances is provided below. The argument that the EPA or the State Board might make is that enterococcus is much more accurate indicator for the possible human pathogens that are in the water, so where only fecal, total, or a mixture of coliforms are represented there isn't necessarily danger. Heal the Bay would disagree with that conclusion. Looking at the EPA's own document released in 2006, The Volunteer Estuary Monitoring Manual, they mention that fecal coliforms are recommended as an indicator by the U.S. Food and Drug Administration for classifying shell-fishing waters in addition to testing recreational waters. They do acknowledge that some bacteria in the fecal coliform group includes species that have a non-fecal origin and there's a possibility for members to regrow in tropical waters. Still, this doesn't seem to be likely in California's mostly temperate waters. The EPA goes further to claim on page 17-5, "Even though fecal coliform bacteria have some deficiencies when it comes to being a "perfect" indicator, they are generally considered the best available indicators of contamination at the present time." This is hardly the description of an indicator that should be discarded, and if anything should be used in combination with Enterococcus to make the waters of California protective of human health for its recreational centered beneficial uses. We also want to make the point that the sources of fecal bacteria contamination can come from a myriad of places. Some of the main sources are wastewater treatment plants, compromised septic tanks, landfill leachate, marina waste, and human swimmers. Because enterococcus is found in the intestinal tract of all warm-blooded animals, they are particularly adept at indicating the presence of human feces. This makes the above anthropogenic sources ideal for being indicated for by enterococcus. But when looking at non-point sources, contamination may be harder to discover without using the coliform indicators. In a Santa Monica Bay study, Haile et al. reported a correlation between enterococcus, fecal, and total coliforms and swimming-related illnesses. Studies like this were responsible for the establishment of water-quality standards for fecal indicator bacteria at beaches though out California. Other advantages to sampling for fecal coliform bacteria is that it shows	outcomes under non-outbreak conditions. These studies concluded that: (1) good indicators of fecal contamination and demonstrated predictors of gastro intestinal illness in fresh waters are enterococci and *E. coli,* and enterococci in marine water, but not fecal coliform; and (2) the risk of gastro intestinal illness is considerably lower in studies where enterococci and *E. coli* densities were below levels established by U.S. EPA in 1986. The 2012 U.S. EPA Recreational Water Quality Criteria recommends the use of enterococci as the sole indicator for both fresh and marine waters, or to apply enterococci to marine waters and *E.coli* to fresh waters. As discussed in Chapter 5 section 5.2.1 of the Staff Report, studies have shown that enterococci can exist and multiply in warm freshwater habitats creating false positives. Consequently, the Bacteria Provisions utilize *E.coli* as the most reliable organism in all fresh waters. While the use of two indicators would appear to provide better protection of the REC-1 beneficial use, it could also lead to false positives from the enterococci indicator in freshwaters. Additionally, the use of two indicators would increase costs because a test for each indicator organism would need to be conducted for every sample. As there is the chance of false positives from enterococci, spending money for these tests could be wasteful. Allowing the use of one indicator would free up money that could be spent on additional monitoring for that single indicator. However, requiring the sampling of both indicators for freshwaters within permits or other regulatory programs is not precluded by the Bacteria Provisions and can be required by the Regional Water Boards. Enterococci is the preferred indicator for estuarine waters within the Bacteria Provisions because if its ability to survive in saline environments. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing Ocean Plan because recent California-specific epidemiological	

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		more recent fecal contamination when compared to enterococcus because they are thought to die off more quickly in the environment. This could be important in sourcing the origin of the pollution by fecal coliform giving a limit to how long it has feasibly been there. Because both pathogens and the fecal index organisms that flag them are inactivated at varying rates, the use of just one index organism can be limiting in pathogen estimation. Studies of fecal coliforms have shown them to be higher as beach crowds grow due to both present time shedding from the bathers themselves in addition to becoming re-suspended from their attachment to sediment as a result of "disturbance of bottom sediments and sand from bathers, surface runoff, boat traffic, storms, tides, and dredging." To be sure, Heal the Bay agrees that if entities had the opportunity to monitor for only one indicator bacteria, enterococcus would be the clear one to sample. But when a small suite of bacteria, including fecal coliform, can be sampled for at a low cost and minimal extra resources, it seems like the State Board should request that they be part of the State Bacteria Provisions. At some date in the future, much more advanced bacteria sampling at a low cost is likely to have the ability to trace an exact point of origin of human pathogens. Until that day, erring on precaution when it comes to public health seems like the prescient path to take. Just weeks ago in late July 2017, three adults and eleven children contracted E. coli from recreating in Lake Wildwood in Nevada County, CA. When you discover how close one of the younger victims came to having his kidneys fail it is a sobering reminder how much is at stake when it comes to monitoring California's waterbodies to protect public health. Considering this, and erring on caution with the public health of our citizens, Heal the Bay asks that the State Board require the use of both fecal coliform and enterococcus standards for all monitoring of receiving waterbodies (freshwater, estuarine, and marine) with REC-1 and REC-2 designated beneficial uses.	studies demonstrate that fecal coliform is a good indicator of fecal contamination and is a better indicator than enterococci of gastrointestinal illness during certain types of water exposure and environmental conditions. Section 5.2.3 of the Staff Report has been revised to provide the justification for retaining fecal coliform. As discussed in Chapter 5 section 5.2.3 of the Staff Report, changing the Ocean Plan's REC-1 contact standards to require enterococci and fecal coliform would still leave in effect the Title 17 bacteriological standards for total coliform, to which local public health agencies performing beach water quality monitoring and public notification must adhere. Although the State Water Board has the authority to change or update the Ocean Plan's REC-1 objectives, the Title 17 minimum protective bacteriological standards for coastal waters would still require public beach monitoring using multiple indicators until either a legislative or regulatory change. In addition, it was recently found by the manufacturer, that the IDEXX colilert test that has been widely used for beach monitoring in California's coastal waters is inappropriate for measuring total coliform in marine waters due to the high level of false positives. In additions, the fecal coliform testing that has been done for beach monitoring in California's coastal waters using the IDEXX e-colilert test has been reported as fecal coliform but the actual results are for *E.coli* and indicator shown to have a poor correlation with human illness in marine waters due to its short life span. These findings could indicate that the 25% exceedances identified within the comment and Beach Report Cards are based on faulty data or indicators. Requiring the collection of data for indicators that has been shown by the most recent science to be obsolete is not appropriate. However, Title 17 requirements will continue to apply in coastal waters and the Regional Water Boards can elect to require multiple indicators to be collected in freshwaters within their regional	

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			boundaries. In addition, as described in response to comment 4.02 the Staff Report has been revised to add a discussion on developing alternative bacterial indicators and laboratory analysis methods based on developing science. See also responses to comments 4.01 and 4.15, and 24.01.	
	18.03	The SWRCB should not apply a Limited REC-1 beneficial use statewide The SWRCB cite the Los Angeles Regional Water Quality Control Board's (RWQCB or Regional Board's) implementation of a LREC-1 beneficial use for Ballona Creek as a rationale to expand this policy across the State. This was a bad precedent in 2003 and makes for even poorer policy today. Heal the Bay was highly critical of this decision at both the local Regional Board (2003) and the State Board (2004)—our letters are included as Attachments A and B. In fact, the local Regional Board did not agree with the Limited REC-1 decision proposed by the Los Angeles County Department of Public Works at the time and decided that it was a premature request given the opportunities being developed and explored by the Ballona Creek Task Force and Regional Board regulatory implementation. Our arguments to the SWRCB in 2004 on the County's appeal aptly apply to this policy as well: In summary, the County's petition makes a multitude of assumptions regarding recreational uses in Ballona Creek without providing any additional data beyond those presented in the RWQCB's UAA [Use Attainability Analysis]. This UAA was extremely limited in scope, relying on seven field visits and one small survey, and likely does not meet the requirement that a UAA must be a structured, scientific assessment. Insufficient evidence has been provided to show that REC-1 and REC-2 uses are not occurring along Ballona Creek. Importantly, a significant multi-stakeholder process to develop a comprehensive restoration plan for Ballona Creek is being finalized, with water quality identified as a top priority. This plan will contain the stakeholders' vision of a restored Ballona Creek and will have a significant impact on future uses. It is imperative that the SWRCB and the RWQCB comprehensively consider the actual existing uses and potential future uses of Ballona Creek, an important community asset, before any decisions regarding designated beneficial uses are made. Yet the Draft Provisions will only incentivize communities to further fence off, and channelize their urban creeks and streams so they can receive the LREC-1 designation. Given the remarkable increase in river and watershed restoration in California, including public access to urban rivers in urban Los Angeles, there is an increasing amount of attention to integrating natural	See responses to comments 3.15, 3.18, and 4.14.	No

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		resources protection and public recreation. There are a multitude of state-funded restoration programs from diverse legislative mandates, ballot initiatives, and citizen-sponsored programs focused on restoring our urban waterways. Before allowing communities to further degrade their urban waterways, the State Water Board should consider the unanticipated consequences of allowing a LREC-1 beneficial use. For project option 5.1.1, the SWRCB should select Option 1, no action on LREC-1 beneficial uses.		
	18.04	USEPA's 2012 Recreational Water Quality Criteria Beach Action Value should be incorporated into the SWRCB's Bacteria Provisions In the Executive Summary, the SWRCB explicitly states "The Bacteria Provisions are intended to protect human health by reducing the risk of illness associated with exposure to water containing fecal bacteria." If this is the case, then the SWRCB should adopt the Beach Action Values (BAV) instead of the Statistical Threshold Value (STV) as a more conservative approach to public notification or resource impairment? As the EPA states, "…use a BAV as a conservative, precautionary tool for making beach notification decisions. For states that do not use a BAV, EPA suggests using the criteria STV values as "do not exceed" values for beach notification or retaining their current beach notification values in their WQS." The Bacteria Provisions do not provide a rationale for why the BAV could not be applied. If the SWRCB is arguing that the single indicator enterococcus for marine waters at a value of 110 for STV is more protective than the existing standards, then logically using the BAV values of either 60 or 70 would be even more protective. It is arbitrary for the SWRCB to stop short of being most protective of public health.	See response to comment 4.17. Additionally, section 10.7 of the Staff Report has been revised to clarify that the Bacteria Provisions generally would not result in a lower of water quality because the proposed objectives are generally more protective of public health than existing *E. coli* and enterococci objectives for the protection of REC-1 uses. Insofar as it is conceivable that the Bacteria Provisions' water quality objectives could effectuate a lowering of existing water quality in limited circumstances for a particular waterbody, such lowering is consistent with the maximum benefit of the people of the state, is reasonable protective of beneficial uses, and would protect the REC-1 use.	No
	18.05	The Geometric mean should continue to be a rolling-mean calculated based on samples collected within a 30-day period There is no scientific valid reason to extend the geometric mean time-period from 30 days to 45 days. Given that the SWRCB has gone to great lengths to continuously cite the USEPA's 2012 RWQC as its rationale for updating the Bacterial Provisions, it is ironic that it chooses to ignore the USEPA's recommended 30-day time period for determining a geometric mean. Instead, the SWRCB should have required monitoring agencies to actually collect the samples—i.e. increase the frequency—if we are truly concerned with protecting public health. Unfortunately, extending the timeframe to 45-days is a matter of convenience for monitoring agencies and not in the best interest of public health. Heal the Bay commented extensively on the LARWQCB and City of Los Angeles study of various averaging periods, and found that all proposed averaging time-periods that were not the 30-day and rolling—as required by the Ocean Plan and recommended in the 2012 RWQC, such as summer,	See response to comment 4.07 and Staff Report section 5.2.5.	No

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		6-week, and 30-day non-rolling, produced less exceedances. Instead of protecting public health, the monitoring agencies were seeking regulatory relief. For project option 5.2.5, the SWRCB should select Option 1, no action or Option 2.		
	18.06	Criteria need to be developed for Natural Source Exclusion, Use Attainability Analysis, High Flow Suspension, Seasonal Suspension before SWRCB encourages these options for non-compliance. The SWRCB proposes a number of avenues for monitoring agencies to address non-compliance with bacterial standards such as employing a natural source exclusion, conducting a use attainability analysis, or implementing a high flow or seasonal suspension policy. Such administrative policies should not be used to manage or address water quality issues stemming from regulatory compliance that adversely impact ecological or public health. Implementation of such policies should be an extremely rigorous process and explored only as a last resort after all BMPs and water quality improvement project efforts toward improving water quality have been implemented. Furthermore, to ensure that water quality standards are not being weakened, the regional boards, State Board and USEPA must require that the policies be a high quality analysis which appropriately assesses water-bodies of concern. Heal the Bay has commented at length to the Regional and State Boards about such policies—see Attachment C. However, many of these policies have little to no guiding criteria to ensure a high level of rigor and scientific assessment actually occur. As such, the SRWCB should not be pushing monitoring agencies to these compliance avoidance policies until criteria are developed. The SWRCB is need to develop criteria for statewide consistency of these policies. For example, EPA's current UAA criteria are extremely vague and do not provide much needed implementation guidelines. It is extremely vital for the state to develop strong UAA criteria to best preserve beneficial uses, support meeting water quality standards in receiving waters, strengthen public health protection, and provide statewide consistency during UAA implementation. Statewide UAA criteria should include the following: · At least five years of consistent water quality monitoring data (at least weekly) showing chronic water-body impairment (exceedances of state water quality standards). These data must be consistent among all areas seeking to undergo a UAA. · All efforts towards improving water quality (BMPs, water quality improvement projects, source tracking etc.) must be exhausted. These efforts should include an analysis of water quality monitoring data before	The Bacteria Provisions include the natural source exclusion, high flow suspension, and seasonal suspension implementation options because they are viable and legally supported, and have been used in successfully in Regional Water Boards. The State Water Board is not pushing the use of these implementation options on any Regional Water Board; however, they do provide a list of options that may be used by the Regional Water Boards to successfully address bacteria impairments effecting the REC-1 beneficial use and the appropriate applicability of the REC-1 use. The Bacteria Provisions provide the basic requirements for using the Natural Source Exclusion approach, which is that it must be applied within the context of a TMDL designed to meet the proposed water quality objectives for bacteria and all anthropogenic sources of bacteria must be identified, quantified, and controlled. The Bacteria Provisions define a UAA as a structured scientific assessment of the factors affecting the attainment of a water body's designated use, including physical, chemical, biological, and economic factors, in accordance with 40 Code of Federal Regulations section 131.10(g). The Bacteria Provisions also provide an option for a high flow suspension and seasonal suspension of the REC-1 use. The Regional Water Boards would establish under the conditions under which the suspension would occur, and the suspensions would need to be approved by the Regional Water Board, State Water Board, and U.S. EPA. The temporary suspension of the REC-1 use would be site-specific in nature. Establishing specific criteria for when such a suspension would occur statewide is not feasible. Please see the response to comment 4.09.	No

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		and after project implementation. · Must provide adequate data to demonstrate human sources are not contributing to water quality impairment. Must prove significant documentation on the suggested lack of public use or access (pictures alone do not justify). This should be demonstrated by obtaining information through a combination of documented historical use, personal interviews, historians and digital archives.		
Karuk Tribe Representative: Susan Fricke	19.01	1. Proposed statewide objectives for indicator bacteria weaken the Regional Board's current numeric standards Current numeric standards in Region 1 for fecal coliform are 50 cfs/100 mL, whereas the proposed threshold for E. coli is 100 cfs/100 mL. E. coli is a component of fecal coliform, and although the percent composition of E. coli in a fecal coliform sample is variable, it is never more than 100%. Therefore, the State Board's proposed increase in the bacterial threshold would at the minimum double the acceptable bacteria levels, and subsequently increase the illness rate which has become accepted by the public residing in Region 1 under the current regulations. This is an important point, because the EPA noted that the illness rates of 32 and 36/1000 were chosen in the new bacteria standards because these illness rates were accepted by the public. Because there is variability in the ratios of E. coli to fecal coliform, agreeing on a comparable E. coli threshold is challenging. For example, the E. coli concentration presented in appendix C of the Staff Report suggests that an E. coli threshold of 45 cfu/100 mL corresponds to the current fecal coliform limits, based on a 90% conversion factor used by the Ocean Plan staff. Data from the Scott River watershed showed a range of E. coli to fecal coliform ratios, with a median ratio of about 50%, based on 160 paired samples (Genzoli et al. 2015), which points to an E. coli threshold of about 25 cfu/100 mL as a comparable threshold to the current standards. The figures below show the range in E. coli to fecal coliform ratios, and the paired E. coli and fecal coliform samples from the Scott River Watershed with the median regression (black line), the current fecal coliform thresholds (dashed red line), and the corresponding E. coli threshold of 25 cfu/100 mL (dashed blue line) that we propose for Region 1. The proposed E. coli threshold was plotted where the fecal coliform threshold crossed the median linear regression. See graph in letter. In addition to a lower illness rate being accepted by those living in Region 1, the illness rate of 32/1000 water users is unacceptably high for people with increased levels of water contact. In the Tribal communities within the Klamath Basin, many people, including young children, use lakes and rivers for recreation, subsistence, and ceremonies throughout the year. Some individuals are immersed in water daily during summer months. At an illness rate of 32/1000, and a	Please see responses to comments 2.05, 3.06, 3.08, and 26.02. As detailed in Chapter 2 section 2.3.2 of the Staff Report, the water quality objectives for bacteria presented within the Bacteria Provisions are for the protection of the public utilizing the REC-1 use. Any individual, be they a tribal or non-tribal member, is afforded the same level of protection while swimming, wading, fishing, and engaging in another water contact activity. Other beneficial uses like tribal tradition and culture (CUL) may involve ingestion of water and could require the development of water quality objectives specific to those uses. Chapter 2 section 2.3.2 further describes that epidemiological studies have been conducted to link levels of fecal indicator bacteria to the risk of illnesses resulting from recreating in waters contaminated by fecal pollution. Using fecal indicator bacteria concentrations, it is possible to make a reasonable determination that the beneficial use of REC-1 is potentially impacted. The Bacteria Provisions include updated water quality objectives for bacteria to protect human health for the beneficial use of REC-1 in fresh, estuarine, and marine waters based on the best information and science provided by the 2012 U.S. EPA Recreational Water Quality Criteria. In addition, the Ocean Plan Amendment would retain the fecal coliform objective contained in the existing Ocean Plan because recent California-specific epidemiological studies demonstrate that fecal coliform is a good indicator of fecal contamination and is a better indicator than enterococci of gastrointestinal illness during certain types of water exposure and environmental conditions.	Yes

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		daily E. coli level of 100 cfu/100mL, an individual who swims every summer day would be expected to become ill three times that summer. For a single individual, three bouts of gastrointestinal illness due to water contact is unacceptable. Region 1 also has numerous water-bodies that warrant increased levels of protection due to their pristine nature, including high mountain lakes used for drinking water by wilderness travelers and proposed Outstanding National Resource Water (Smith River). Additionally, rivers coming out of minimally disturbed ecosystems should receive, at a minimum, the current levels of protection against bacterial contamination. The Region 1 Basin Plan contains a narrative objective, which states, "the bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels". The Staff Report says that these narrative objectives would not to be superseded by the proposed statewide numeric objectives; however, the narrative objective requires demonstrating what background levels are in a specific water-body. Further, because background levels are not currently understood for many water bodies, there could be debate as to what background levels should be. Therefore a threshold for E. coli should be established for use, when background values are not available, that is at least as protective as current thresholds. Under section 5.2.4 (Issue E - Level of Public Health Protection for Illness Rate for Fresh and Marine Waters), there should be an option for Region 1 (North Coast) waters similar to option 4, which states, "Continue to maintain a higher standard for Fecal Indicator Bacteria for Lake Tahoe which is designated as an Outstanding National Resource Water. Under this option Lake Tahoe would retain an equivalent objective to their bacteria objective of 20/100ml fecal coliform (17cfu/100ml for E. coli)." As was done for Lake Tahoe, Region 1 should also retain previous protective levels based on both the more pristine waters and the high water contact levels of many individuals residing in Region 1, especially from within tribal communities.	The comment incorrectly concludes that a single individual swimming every summer day would be expected to be ill three times under the proposed water quality objectives for bacteria which are correlated with an estimated illness rate of 32 illnesses per 1,000 recreators. The illness rate does not apply on a per day basis; rather, it is an overall probability of becoming ill while undertaking the activities defined under the REC-1 use at a given level of indicator bacteria. Every recreators has a 3.2 percent chance of becoming ill every time they partake in the REC-1 use assuming the levels of bacteria are at or below the water quality objectives. Furthermore, as described in Chapter 5 section 5.2.4 of the Staff Report the 2012 estimated illness rate of 32 illnesses per 1,000 recreators is equivalent to the 1986 estimated illness rate of 7 illnesses per 1,000 recreators with the discrepancy due to a broader definition of gastrointestinal illness that does not require the presence of a fever. Chapter 5 section 5.2.4 of the Staff Report has been revised to reflect that the numeric objective currently found within the North Coast Regional Basin Plan is indicative of what should be found in high quality coastal and mountain waters, and is not related to a specific risk of illness for REC-1 uses. It is appropriate to supersede the current water quality objective in the North Coast basin plan with an objective based on the protection of public health and the REC-1 use. As described in response to comment 3.06 the site-specific objective for Lake Tahoe has been removed from the Staff Report and Bacteria Provisions.	
	19.02	2. Narrative objectives that will not be superseded for Region 1 should be clearly stated in the new bacterial provisions Currently, the Bacteria Provisions only mention how the old numeric criteria from the Basin Plans will be treated in response to the Bacteria Provisions. It should be clearly stated in the Bacteria Provisions that narrative water quality criteria will supersede the new draft provisions.	The Staff Report Chapter 2 section 2.3.2 adequately explains the Bacteria Provisions will not supersede narrative objectives in the Regional Water Board Basin Plans. Providing additional information to Table 1 of the Bacteria Provisions for Part 3 of the ISWEBE is not warranted. Part 3 of the ISWEBE of the Bacteria	Yes

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		These exceptions for each region should be clearly stated in the Bacteria Provisions so that water quality managers do not have to search through multiple documents (Staff Report and Basin Plans) in order to understand what the most current bacterial regulations are for their regions. All deviations to the state-wide standard, numeric or narrative, should appear in Table 1 of the Bacteria Provisions, as the exception for Lake Tahoe does currently.	Provisions (Chapter III.E.3) specifies that "numeric" objectives are superseded. That same section in the provisions has been revised to expressly state that the bacteria objectives do not supersede narrative objectives.	
	19.03	3. Proposed weekly sampling intervals are too restrictive to tribal natural resource departments' water quality monitoring programs: alternative sampling schedules should be accepted Sampling water bodies for bacterial exceedances is time consuming and expensive for small water quality programs, especially in cases where staff are traveling to water-bodies that are not part of regular water quality sampling or to water-bodies in remote locations. Although the weekly sampling schedule suggested by the State Board is more relaxed than the five samples in 30 days suggested by the EPA, other sampling regimes should be accepted. For example, many programs already sample other water quality parameters twice per month (Karuk Tribe of California 2013, Yurok Tribe Environmental Program 2013). In these cases, adding bacterial sampling to the established survey routine would provide five samples over a 10-week period. Page 72 of the Staff Report explained that the shorter duration (30 days) was chosen as the interval by the EPA in order to "help get the information out to the public more quickly and insuring a better health perspective." Using Beach Action Values, explained below, avoids the need to strictly define the time intervals between bacteria samples because it provides an alternative indicator for public health notifications based on the most recently collected bacteria samples. Although the six-week period suggested in the Staff Report is a good time period to strive for, longer sampling windows should be accepted when listing impaired water bodies. Acceptance of alternative sampling timelines should be stated in the Bacteria Provisions so that water quality monitoring departments can plan sampling in a way to most efficiently utilize their available resources. The case for flexible sampling schedules is especially relevant when sampling in remote locations. The Quartz Valley Indian Reservation has been sampling lakes and streams in wilderness areas to assess the degree of bacterial contamination associated with cattle grazing (Genzoli et al. 2015). These water bodies are important to monitor because the Marble Mountains are recreational and cultural resources, but sites are remote and require long hikes to reach these sites.	See responses to comments 3.03, 4.07 and 4.17.	No
	19.04	4. Beach action values should be included in the Bacteria Provisions to guide public health warnings	See responses to comments 4.17 and 33.18.	No

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		Beach action values (BAVs) were suggested in the EPA 2012 draft bacteria standards as single sample thresholds to be used to warn the public of potentially dangerous water conditions. Although BAVs were not suggested by the EPA to be used for regulatory thresholds, a public warning level is helpful in informing water users of potentially dangerous conditions as they occur rather than waiting for a six-week average to base public health postings from. The EPA suggested a BAV of 190 cfu/100ml E. coli using the 32/1000 illness rate. More protective bacterial standards in Region 1 should correspond to more protective BAVs, based on the EPA suggested method: BAV corresponds to the 75th percentile of the E. coli water quality distribution.		
	19.05	5. LREC-1 designation should not be applied to Region 1 at any time, and anywhere in the state due to low-water conditions associated with impairment by flow alteration We disagree with several aspects of the State Board's proposal to add a new Limited Water Contact Recreation (LREC-1) beneficial use for waters where body contact with water and ingestion of water is infrequent due to restricted access or very shallow water depth, such as in concrete flood conveyance channels. Los Angeles is currently the only Regional Board that has designated any water bodies as LREC-1. The State Board's support for additional designation of LREC-1 waters promotes an unfortunate vision for the future of the state's water bodies. The State should promote restoration of water quality and increased public access. The LREC-1 designation would be a step in the opposite direction. The LREC-1 designation would be particularly inappropriate in Region 1 due to the high water contact of people throughout the calendar year. Especially in the tribal communities, ceremonial, fishing and gathering practices occur throughout the year in a wide range of temperature and flow conditions. Additionally, downgrading the REC-1 beneficial use designation to LREC-1 due to low-water conditions is not protective of public health. Some people will be drawn toward any water left during hot and dry conditions. Further, downgrading the beneficial use category, and thus holding the water-body to lower bacterial standards, does not promote systematic improvements in water quality that often require increased in-stream flows. Therefore, the State Board should not expand the LREC-1 designation.	See responses to comments 3.15 and 3.18.	No
Klamath Riverkeeper, Pacific Coast Federation of Fishermen's Associations,	20.01	Klamath Riverkeeper supports the State Board's decision to maintain the narrative objective for Region 1 (North Coast), which states, "The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels."	Comment noted.	No
	20.02	Our primary concern is the increased numeric objectives for Region 1, which presumably would be used if background levels of fecal indicator	See responses to comments 3.06 and 3.08.	No

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Institute for Fisheries Resources Representative: Konrad Fisher		bacteria were unavailable or contested. The current numeric standard of 50 cfu of fecal coliform is more protective of public health than the proposed statewide threshold of 100 cfu of E. coli. Studies conducted in the Klamath River Watershed suggest that fecal coliform is on average 50% E. coli (Genzoli et al. 2015). Thus, 25 cfu E. coli would be a comparable threshold to the current numeric object for Region 1. Region 1 should maintain a more protective numeric objective for E. coli, similar to what was suggested for Lake Tahoe. The illness rate of 32/1000 water users is unacceptably high for the people of the North Coast and specifically the Klamath Basin, where water contact is high throughout the year due to cultural, subsistence, and recreational practices. A family of five that swims daily throughout the summer in waters at the proposed E. coli threshold of 100 cfu should expect to spend two weeks with a sick family member during the summer (5 people × 92 days = 15 person-sick days).	Although the North Coast Region's fecal coliform objective is associated with REC-1 waters, the objective is indicative of what should be found in high quality coastal and mountain waters, and is not related to a specific risk of illness for REC-1 uses (per recent research on the origin of the region's fecal coliform objective as found in California Department of Health Services Memorandum, 1990). In other words, the fecal coliform objective was established to provide protection against degradation. The North Coast Basin Plan also has a narrative objective, which will not be superseded by the Bacteria Provisions. Their narrative objective states: "The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels." The use of this narrative objective will allow the North Coast Water Board to prevent the degradation of the water quality of their waters beyond natural background levels. Because the North Coast Basin Plan contains the narrative bacteria objective, which applies to all inland surface waters, enclosed bays, and estuaries within the region, the State Water Board expects the Regional Water Board will implement the narrative bacteria objective. The State Water Board would expect that new dischargers would be required to perform pre- and post-discharge monitoring to ensure the waters are not degraded beyond natural background. For existing permitted discharges, the State Water Board would expect that the narrative bacteria objective would be implemented in any amended permit, as applicable. Section 10.7 of the Staff Report has been revised to clarify that the Bacteria Provisions generally would not result in a lower of water quality because the proposed objectives are generally more protective of public health than existing *E. coli* and enterococci objectives for the protection of REC-1 uses. Insofar as it is conceivable that the Bacteria Provisions' water quality objectives could effectuate a lowering of existing water quality in limited circumstances for a particular	

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			waterbody, such lowering is consistent with the maximum benefit of the people of the state, is reasonable protective of beneficial uses, and would protect the REC-1 use. It is appropriate for the North Coast Water Board to interpret the narrative objective and the meaning of natural background levels for their waters. While the translation of fecal coliform to *E. coli* as expressed in the now stricken Appendix C to the Staff Report is inappropriate for North Coast freshwaters (see the response to comment 2.05), the use of data from Genzoli et al. 2015, other studies, or the evidence underlying the 1990 Department of Health Services memorandum might be appropriate. The North Coast Water Board is more knowledgeable about the geography, hydrology, land use, and other factors of North Coast watersheds and is better able to assess translation data and interpret their narrative objective then the State Board within the scope of this project. This project is focused on protecting water contract recreational uses from bacteria. The protection against illness from bacteria and pathogens during water contact recreation is as critical in the North Coast Region as in the rest of the state and it is appropriate to apply the statewide bacteria water quality objectives to the region. Finally, the illness rate does not apply on a per day or a per summer season basis; rather, it is an overall probability of becoming ill while undertaking the activities defined under the REC-1 use at a given level of indicator bacteria. Every recreators has a 3.2 percent chance of becoming ill every time they partake in the REC-1 use assuming the levels of bacteria are at or below the water quality objectives.	
	20.03	For many families in the rural North Coast Region, swimming is not optional, but rather, the only way to cool off when living without air conditioning. Further, ceremonial and subsistence practices with many of	See responses to comments 3.06 and 3.08. Please also note that developing bacteria water quality objectives for the Tribal Traditional Culture and Tribal Subsistence	No

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		the tribal communities require increased water contact throughout the year, including during run-off events when E. coli levels increase.	Fishing beneficial uses is not within the scope of this project.	
	20.04	To better protect public health, the State Board should adopt Beach Action Values (BAVs) that guide public notifications of bacterial contamination. BAVs were suggested in the EPA Recreation Water Quality Criteria, but were not addressed in the State Board's Bacteria Provisions. The citizens of California deserve to know if water is contaminated as soon as possible, rather than waiting six weeks for a geometric mean.	See responses to comments 4.17 and 33.18.	No
	20.05	It would be irresponsible for the state of California to significantly weaken the current bacteria thresholds that residents of the North Coast are accustomed to. We expect our streams to be protected from pollution and for polluters to be held accountable for cleaning up and restoring degraded waters.	See responses to comments 3.06 and 3.08.	No
	20.06	Clean water should be a public resource for all to enjoy and backtracking on water quality standards does not represent the public interest. As such, we oppose statewide adoption of the LREC-1 criteria and seasonally removal of REC-1 criteria, which would allow for loopholes for increased bacterial pollution.	See responses to comments 3.15, 3.18, 4.14, 6.05, and 6.06.	No
KMI	21.01	Generally, this policy will be an improvement over existing provisions. The switch to E.coli as a standard is more likely to indicate true risk than previous reliance on Total coliform or Fecal coliform standards. A statewide policy that provides guidance on development of bacterial TMDLs is useful. Likewise, the creation of a limited REC1 beneficial use for waters where there is restricted and/or limited human exposure from swimming or wading provides a more reasonable standard. However, many questions were generated when reading draft materials. Comments will largely be confined to these questions:	Comment noted.	No
	21.02	It is my understanding that the EPA E. coli standards were generated based upon research performed in the Great Lakes? • Could Staff elaborate on the source of research used to develop EPA standards that are now the basis for proposed California standards? • If the standards are based upon research conducted in temperate climates, rather than the semi-arid West, how can Staff justify the use of these standards? • Please comment on how those standards might be improved for use in the West? • In general, shouldn't California develop standards based upon geography-driven research?	Chapter 12 of the Staff Report has been revised to include the following hyperlink to the U.S. EPA 2012 Recreational Water Quality criteria: https://www.epa.gov/wqc/2012-recreational-water-quality-criteria. U.S. EPA conducted epidemiological investigations at nine locations that included fresh water, marine, tropical and temperate beaches (see section 2.0 of the U.S. EPA 2012 Recreational Water Quality Criteria). In addition, the U.S. EPA supported additional studies to look at the differences between inland and coast recreational waters and epidemiological studies specifically at California beaches. EPA used these studies to propose criteria applicable nationwide. The Bacteria Provisions include	Yes

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			water quality objectives based on the U.S. EPA 2012 Recreational Water Criteria. In addition, the Ocean Plan Amendment would retain the fecal coliform objective contained in the existing Ocean Plan because recent California-specific epidemiological studies demonstrate that fecal coliform is a good indicator of fecal contamination and is a better indicator than enterococci of gastrointestinal illness during certain types of water exposure and environmental conditions.	
	21.03	TMDLs: Draft Part 3 states that "a Regional Water Quality Control Board may convene a public meeting to evaluate the effectiveness of [a} TMDL in attaining the BACTERIA WATER QUALITY OBJECTIVES. How can the regions be allowed discretion on revisiting previous TMDLs? For example, the Central Coast has adopted 15 pathogen, bacteria, Fecal coliform, and/or Fecal indicator bacteria TMDLs since 2003. Throughout the adoption of these TMDLs, there were many concerns expressed about sufficiency of data and/or analysis. What if existing pathogen, bacteria, and/or Fecal coliform TMDLs are listed based upon only one line of evidence or seasonally-influence data, or lack appropriate calculations of natural (non-controllable) background sources, or do not contain appropriate reference sites? The proposed Policy should provide firmer guidance to the Regional Water Boards to correct TMDLs that may have been improperly listed in the past or do not conform to adopted Statewide Policy implementation requirements. Without a concerted effort to correct listed TMDL deficiencies, adopted standards and TMDLs in Regional Basin Plans will not be aligned.	See responses to comments 4.01, 13.01, 14.09, and 33.12. TMDLs are reviewed and approved by the SWB and U.S. EPA and are valid and presumed to address the applicable bacteria impairment.	No
	21.04	Reference Sites: Often, reference sites are not available. For example, in the Lower Salinas Fecal coliform TMDL, Staff were not able to identify monitoring sites in Monterey County that fit their reference site criteria. Therefore, sites from other parts of the Central Coast Region were used. This might or might not have been appropriate depending the definition of a reference site in this Statewide Policy. • Will the state provide guidance on the use of reference sites? • What if no appropriate reference sites are available for a watershed? • What is TMDLs were adopted using inappropriate reference sites? • What is the recourse under this statewide policy?	See responses to comments 4.09, 23.05, and 33.12. Reference systems are not required to be located in the same waterway but should reflect similar hydrologic conditions in an environment minimally impacted by anthropogenic activities in order to appropriately characterize the representative exceedance frequency of bacteria water quality objectives. It is unclear what the commenter means by "What is the recourse under this statewide policy?" A Regional Water Board retains discretion to determine what constitutes an appropriate reference site commensurate with the definition for a reference system contained in the Bacteria Provisions. Interested	No

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			persons may address their concerns concerning the appropriateness of such reference systems to be utilized during TMDL development with the Regional Water Board that has established or is in the process of establishing a TMDL using such approach.	
	21.05	Natural Backgrounds: "Federal regulations (40 D.F.R section 130.7) require that TMDLs include waste load allocations for point sources and load allocations for non-point sources and natural background levels and that the individual sources for each must be identified and enumerated." How can the Natural Source Exclusion, as described in this statewide policy, be implemented if natural background has not been calculated as part of an existing TMDL?	See response to comment 5.06.	No
	21.06	Could Staff comment on the Use Attainability Analysis (UAA) method for suspending REC-1 use during high flows and during a specific season? • Who performs the UAA? • Will the state adhere to the EPA requirements for performing a UAA or will requirements be tweaked by the states making this tool either easier or more difficult for the state to use? • What is the anticipated timeframe from the time of initiating an UAA to EPA approval of an UAA?	See response to comment 4.14. The UAAs will be performed at the Regional Water Board level. The Water Board developing the UAA will adhere to the federal requirements for performing a UAA to demonstrate that attaining the REC-1 use is not feasible. The anticipated timeframe for UAA development, adoption by the Regional Water Board, approval by the State Water Board, and approval by U.S. EPA will vary. The Regional Water Board conducting and adopting a UAA, and the State Water Board approving the UAA, would do so in accordance with the planning process applicable to revising a water quality control plan (basin plan) (see Water Code §§ 13240-13246). Upon being approved by the State Water Board, in accordance with Clean Water Act section 303(c)(3), the U.S. EPA has 60 days to approve a new or revised water quality standard or the U.S. EPA may disapprove it within 90 days. (See https://www.epa.gov/sites/production/files/2014-09/documents/handbook-chapter6.pdf)	No
	21.07	Limited REC-1 beneficial uses: • What is the process to re-evaluate waterbodies to determine if a Limited REC-1 beneficial use would be more appropriate for a water body or reach of a water body? • Will this beneficial use be restricted to urban waterbodies or will it also apply to grazed areas? • How can a private landowner request to application of a Limited REC-1 beneficial use designation to a water body or reach of water body that flow through or is adjacent to his property?	See responses to comments 3.15, 3.18, and 4.14. The Regional Water Boards have the authority to designate a water body with the LREC-1 regardless of the land use or location, although those factors could be examined within the requisite UAA. Persons interested in requesting a UAA be considered to remove a designated use that is not an existing use are encouraged to contact the applicable Regional Water	No

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			Board to identify and discuss the issue and associated process.	
Los Angeles Department of Water and Power Representative: Katherine Rubin	22.01	LADWP understands that the need to develop updated Bacteria Objectives is fundamental to achieving water quality improvements in recreational use water bodies. LADWP recognizes and supports the protection that these Bacteria Objectives provide for those water bodies.	Comment noted.	No
	22.02	1. It is not clear how changes to the Bacteria Objectives will be implemented LADWP has reviewed the Draft Staff Report; Draft Bacteria Provisions; and Draft Ocean Plan and has concerns that not enough guidance is provided as to how the policies will be implemented. It is respectfully suggested that the SWRCB address NPDES permitting issues within the draft policy, specifically addressing how the new bacteria objectives will be used in permitting. By doing so, the SWRCB could provide a clear understanding on the reasonable potential analysis and how it should be conducted; how objectives are to be implemented, i.e. as BMPs, TBELs, or WQBELs; how objectives will be implemented in permits when not required by a TMDL; how objectives will be implemented in permits before a TMDL is developed, and if/how permit limitations can later be adjusted; what the process is for existing TMDLs to be updated/evaluated/rescinded given the new standards; and how these provisions will be applied to existing and future NPDES permits. The LADWP requests that the SWRCB provide guidance to the Regional Water Boards regarding implementation of the revised objectives.	See responses to comments 3.05, 4.01, and 14.09. The Bacteria Provisions include numeric bacteria water quality objectives for the protection of public health during water contact recreation that will supersede the numeric water quality objectives found in Regional Water Board basin plans where a conflict exists. The Regional Water Boards currently have existing bacteria water quality objectives as detailed in Table 5 of the Staff Report. The existing objectives are being implemented by the Regional Water Boards using established mechanisms including but not limited to TMDLs and NPDES permits. The Bacteria Provisions will also be implemented using these mechanisms, with the addition of implementation options and tools that have been successfully utilized by various Regional Water Boards across the state. Chapter 6 of the staff report provides a detailed discussion on potential methods of compliance for point and non-point sources.	No
	22.03	2. The use of a rolling Geometric Mean and STV approaches - The Draft Bacteria Provisions and Draft Ocean Plan revise how Bacteria Objective limitations will be calculated. In doing so, the use of the Single Sample Maximum is replaced by the use of a statistical threshold value (STV), and the Geometric Mean is changed from a geometric mean using at least 5 samples in a 30-day period to a Geometric Mean in a rolling six-week period. LADWP is concerned that the revised averaging periods to determine compliance may have adverse effects on exceedance reporting. If a rolling six-week averaging period is used, each weekly sample would be used to compute overlapping geometric means - this approach may cause a single bacteria objective exceedance to cause multiple exceedances, even though the bacteria objectives were met six weeks prior and six weeks after the exceedance. The LADWP respectfully suggests that maintaining the current practice for calculating the geometric mean using at least 5 samples in a 30-day period will reduce the possibility of a single exceedance leading to double or triple jeopardy with respect to exceedance while maintaining	See responses to comments 4.07. In the scenario presented by the commenter, multiple weeks of high levels of bacteria would need to occur which would signal a public health concern. A single exceedance in one week would be averaged with the previous and future six weeks of data effectively smoothing that single high value out with multiple lower values. However, if values are consistently high over those previous and post weeks then multiple exceedance would appropriately occur signaling a concern to public health. This is further discussed in Chapter 5 section 5.2.5 of the Staff Report. As discussed in Table 2 of the Staff Report, Table 1 of Bacteria Provisions for Part 3 of the ISWEBE, and Table	No

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		REC-1 standards. Additionally, the LADWP requests clarification on how the STV approach will be applied, specifically whether the STV will be used only when geometric mean data is unavailable, and whether the STV can ever be exceeded.	1 of the Bacteria Provisions for the Amendment to the Ocean Plan, the STV shall not be exceeded more than 10 percent of the time, calculated in a single calendar month. Please also note that the language regarding a statistically sufficient number of samples distributed over a six-week period pertains to 303(d) standards assessment under the Listing Policy. It does not pertain to permit conditions and is not a requirement for permittees. The Bacteria Provisions were revised to clarify the applicability of the language.	
	22.04	A) Application of the Natural Source Exclusion Approach is unclear. During the July 10, 2017 Staff Workshop, SWRCB staff indicated that a Quantitative Microbial Risk Assessment (QMRA) is the process by which the Natural Sources Exclusion could be applied. Additionally, SWRCB staff noted that the quantification of natural sources may be calculated as the total minus the human contribution (presumably also the livestock). EPA technical guidance document Site-Specific Alternative Recreational Criteria Technical Support Materials for Predominantly Non-Human Fecal Sources, which appears to be the technical document which describes how a Natural Sources Exclusion is used within a QMRA, is cited on the EPA website within the 2012 Recreational Water Quality Criteria section, but appears to be unavailable. The LADWP requests that the Draft Bacteria Provisions and Draft Ocean Plan be revised to include further clarification regarding how a Natural Sources Exclusion may be applied, specifically within the context of a QMRA.	A quantitative microbial risk assessment (QMRA) can be used to develop site specific objectives based on alternative indicators and or methods when scientifically defensible as discussed in the Staff Report Chapter 5 section 5.2. A QMRA applied within the context of a TMDL for a natural sources exclusion approach could aid in the identification, quantification, and control of anthropogenic sources of bacteria. Exactly how helpful a QMRA would be to this process would depend on the specific conditions of the water body. A working link to the EPA technical guidance for site-specific alternative recreational criteria has been added to the references of the Staff Report.	No
	22.05	B) The Natural Source Exclusion Approach should be used outside of a TMDL context. The Draft Bacteria Provisions and Draft Ocean Plan each allow for a Natural Source Exclusion approach to address natural sources of bacteria, but only in the context of a TMDL -the LADWP recommends that these approaches be allowed outside the TMDL context. This can be accomplished by inserting "controllable factors" language into the new standards. Pursuant to Resolution No. RS-2012-001, the Santa Ana Basin Plan includes a discussion about "controllable factors" as follows: Some of these water quality objectives refer to "controllable sources" or controllable water quality factors." Controllable sources include both point and nonpoint source discharges, such as conventional discharges from pipes and discharges from land areas or other diffuse sources. Controllable sources are predominantly anthropogenic in nature. Controllable water quality factors are those characteristics of the discharge and/or the	See response to comment 4.08. The reference system/antidegradation approach and natural sources exclusion approach are applied within the context of a TMDL because it acknowledges that beneficial uses are not being supported while also allowing for flexibility in meeting standards by taking into account natural sources of bacteria and not requiring regulation of natural systems. The comment does not provide examples of the manner in which the natural sources exclusion should be considered to be allowed outside the context of TMDL development or how the natural sources exclusion approach is related to the concept of controllable factors that may affect water quality	No

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		receiving water that can be controlled by treatment or management methods. Examples of other activities that may not involve waste discharges, but which also constitute controllable water quality factors, include the percolation of storm water, transport/delivery of water via natural stream channels, and stream diversions. Uncontrollable sources of pollutants can occur naturally or as the result of anthropogenic activities. These sources are not readily managed through technological or natural mechanisms. LADWP recommends that the Draft Bacteria Provisions and Draft Ocean Plan each be revised to adopt such language, or language consistent with the Santa Ana Basin Plan, which would allow the Natural Source Exclusion approach to be applied outside of a TMDL context.	conditions. Santa Ana's basin plan explains that whether or not sources are "controllable" affects the Regional Board's ability to regulate those sources to reasonably protect beneficial uses. A "controllable source" or "controllable factors" may include anthropogenic and natural sources. Because "controllable factors" or "controllable sources" may be regulated (and encompass any source of bacteria, whether or not it is anthropogenic), the Reference System/Antidegradation or Natural Sources Exclusion Approach is a method that may be used to alleviate strict compliance with an objective or TMDL targets where the controllable discharge to the waterbody includes natural sources which may causes persistent exceedances of bacteria objectives. The Santa Ana basin plan provides, at chapter 5: "Uncontrollable bacteria sources refer to contributions of bacteria within the watershed from nonpoint sources that are not readily managed through technological or natural mechanisms or through source control and that may result in exceedances of water quality objectives for indicator bacteria. Specific uncontrollable indicator bacteria sources within the Santa Ana Region may include: • Wildlife activity and waste • Bacterial regrowth within sediment or biofilm • Resuspension from disturbed sediment • Marine vegetation (wrack) along high tide line • Concentrations (flocks) of semi-wild waterfowl • Shedding during swimming" "Controllable bacteria sources refer to any bacteria indicator source that can be controlled by treatment or management methods. Requirements for the application of Best Available Treatment technology (BAT) and Best Conventional Treatment technology (BCT) apply to some of these sources (e.g., POTWs); in other cases, such as discharges regulated under the areawide municipal separate storm system permits	

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			("MS4" permits), reasonable actions to reduce or eliminate the contribution of these sources to the maximum extent practicable are required. These include the implementation of best management practices or other mechanisms. Controllable sources are predominantly anthropogenic in nature and can be reduced in varying degrees." "Specific anthropogenic controllable indicator bacteria sources within the Santa Ana Region may include: • Improper use of fertilizers on residential and commercial properties and agricultural lands • Improper handling of pet waste • Cross-connections between the sanitary and storm sewer systems • Leaky sanitary sewer conveyances • Discharges from POTWs • Improper handling and disposal of food waste • Improper management of CAFO waste and washwater • Runoff from yards containing fertilizers, pet waste, and lawn trimmings • Homeless encampments" "Certain techniques are available to identify human sources; when practical, those techniques should be used in areas where persistent exceedances of bacteria objectives occur."	
	22.06	C) The Natural Source Exclusion Approach should allow for the exceedance of the Geometric Mean as well as the STV. A reading of the Draft Bacteria Provisions and Draft Ocean Plan indicates that the Natural Source Exclusion approach allows for exceedances of the Bacteria Objectives STV, but not the geometric mean. The LADWP respectfully suggests that this language appears to be inconsistent with EPA recommendations that allow for revised objectives based on whether they are "equally protective" through the use of a QMRA. LADWP recommends that the Draft Bacteria Provisions and Draft Ocean Plan each be revised to include language that allows for exceedances of the Bacteria Objective STV, as well as the Geometric mean, based on the use of a QMRA. This change would harmonize the Draft Bacteria Provisions and Draft Ocean Plan with EPA recommendations and insure equally protective Bacteria Objectives under the Natural Source Exclusion Approach.	See response to comment 4.09.	No

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	22.07	The Draft Bacteria Provisions have proposed revised water quality bacteria objectives for REC-1 water bodies with the stated intention of providing a consistent regulatory framework throughout the State of California. Although the intent of the Bacteria Provisions is to provide consistent REC-1 standards throughout the State, LADWP believes that there may be uncertainty as to whether the Draft Bacteria Provisions will apply to the Lahontan Basin Plan's current bacteria objectives. During the July 10, 2017 SWRCB Staff Workshop there were differences of opinion amongst the panelists regarding whether the revised bacteria objectives would supersede Lahontan bacterial water quality objectives of 20 per 100 ml in REC-1 water bodies. The LADWP requests that the SWRCB clarify whether the revised bacteria objectives, as well as the implementation provisions such as the Natural Source Exclusion approach; high flow suspension; seasonal suspension; or Water Quality Standards Variance would apply to the Lahontan bacteria objectives.	The Lahontan Regional Water Board basin plan presently has a fecal coliform bacteria objective that applies to all waters and is not expressly established for the protection of the REC-1 beneficial use. The Bacteria Provisions (including any implementation provisions) apply to REC-1 waters statewide. The Bacteria Provisions will not supersede the Lahontan Region's fecal coliform objective; however, the provisions will add the *E. coli* and enterococci bacteria objectives to all waters in the region with the REC-1 beneficial use. Chapter 5 section 5.2.4 of the Staff Report has been revised with this clarification. The implementation options listed within the Bacteria Provisions apply specifically to the implementation of the proposed bacteria water quality objectives for REC-1 waters. As such the implementation options would only be applicable for the new objectives being added to the Lahontan basin plan and not the existing bacteria objectives. The Water Quality Standards Variance would apply to any water quality standards so long as it comports with the requirements outlined under 40 CFR 131.14.	Yes
	22.08	A) The fecal coliform standards in the Lahontan basin plan are not based on current science. The Draft Staff Report includes the following discussion regarding the Lahontan Regional Water Board's current bacteria objectives: In the North Coast and the Lahontan Regional Water Boards, the REC-1 bacteria objectives for fecal coliform are more stringent than the 200/100ml criterion established by U.S. EPA in 1976. In the Lahontan Regional Water Board, the current bacterial objective is a log mean of 20/100 ml of fecal coliform. This objective is not linked to any specific beneficial use and applies to all waters within the region. Circa September 2012, the Lahontan Regional Water Quality Control Board (LRWQCB) offered its response to United States Department of Agriculture (USDA) comments on the 2012 Triennial Review of the Lahontan Basin Plan and defended the use of fecal coliform as "scientific-state-of-knowledge" by citing a 1976 US EPA recommendation. In the 1986 EPA Ambient Water Quality Criteria, the EPA recommended the use of alternative indicators due to the lack of correlation between fecal coliform and illness in swimmers, stating: The freshwater studies confirmed the findings of the marine studies with respect to enterococci and fecal coliforms in that the densities of the former in bathing water showed strong correlation with	See response to comment 22.07. The State Water Board will encourage the Lahontan Regional Water Board to work with relevant stakeholders to evaluate whether the region's fecal coliform water quality objective (described in recital 14) should be identified during the region's upcoming triennial review process as suitable for consideration of revision or its broad application to all surface waters in the region, or both.	No

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		swimming associated gastroenteritis rates and densities of the latter showed no correlation at all. The similarities in the relationships of E. coli and enterococci to swimming associated gastroenteritis in freshwater indicate that these two indicators are equally efficient for monitoring water quality in freshwater, whereas in marine water environments only enterococci provided a good correlation. The 1986 EPA Ambient Water Quality Criteria expected that the more reliable Fecal Indicator Bacteria (FIB) would replace currently used fecal and total coliform: EPA recognizes that it will take a period of at least one triennial review and revision period for States to incorporate the new indicators [E. coli and enterococci] into State Water Quality Standards and start to accrue experience with the new indicators at individual water use areas. Thus, fecal coliform should not be considered as the current scientifically-justified FIB for recreational waters more than 30 years later.		
	22.09	B) The current fecal coliform standards in the Lahontan basin plan are based on an incorrect extrapolation of epidemiological data. Circa September 2012, the RWQCB offered the following response to USDA comments: In sum, the available scientific evidence, taken as a whole, demonstrates that the presence of FIB (including fecal coliform bacteria) in water indicates a risk to human health. The existing 20 cfu/100ml standard has a risk to human health of less than one person in 1000 to become ill who contact waters containing fecal contamination. Based on the 1986 EPA data, fecal coliform was shown to have no correlation to illness rate. Without a correlation, you cannot extrapolate the 200 per 100 ml objective's estimated illness rate to the 20 per 100 ml rate. The initial use of the 200 per 100 ml objective was based on studies which translated the fecal coliform indicator from total coliform concentrations measured in epidemiological studies. These studies found no statistically significant increase in the rate of illness at levels equivalent to 400 fecal coliforms per 100 ml (so 400 per 100 ml represented the level at which no effect of fecal coliform could be observed). The objectives were set at half that (200 per 100 ml) to provide a safety buffer. The Lahontan region's use of 20 per 100 ml, is equal to 20 times lower than the level at which the studies showed no effect at all. Therefore, it is not possible to quantitatively estimate the risk level based on the lower objective. The use of a fecal coliform measurement that is 10 times less than that number, which represented half of the lowest detected illness risk in epidemiological studies more than 40 years old and subsequently replaced by newer studies with better data, is not scientifically defensible in 2017. The EPA's suggested illness rate of 8 per 1000 swimmers for a 200 per 100 ml fecal coliform level was intended to approximately translate current (1986 era) fecal coliform data and measurements while the new indicators were put in place, not serve as a	See response to comment 2.05 and 3.06. The current fecal coliform objective of 20 cfu/100ml found in the Lahontan Water Board Basin Plan is applicable to all waters in the region and is not expressly established for any beneficial use in particular. Hence, the Lahontan Region's existing fecal coliform objective lacks a clear relationship to beneficial uses, and it is beyond the scope of the Bacteria Provisions to evaluate the fecal objective because this project is focused solely on REC-1 use and updating the bacteria objectives to protect that use.	No

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		reasonable target for future objectives: EPA's evaluation of the bacteriological data indicated that using the fecal coliform indicator group at the maximum geometric mean of 200 per 100 ml, recommended in Quality Criteria for Water could cause an estimated 8 illness per 1,000 swimmers at fresh water beaches and 19 illness per 1,000 swimmers at marine beaches. These relationships are only approximate and are based on applying ratios of the geometric means of the various indicators from the EPA studies to the 200 per 100 ml fecal coliform criterion. However, these are EPA's best estimates of the accepted illness rates for areas which apply the EPA fecal coliform criterion. Further, the lack of a correlation between fecal coliform and illness rate in epidemiological studies means that it is not possible to extrapolate to an illness rate of "less than one" per 1000 swimmers simply by dividing the EPA's 1986 estimated illness rate by 10. As there is no correlation between illness and fecal coliform, there should be no expectation of a linear relationship. The 1986 EPA Ambient Water Quality Criteria recommend the use of E. coli and enterococcus as fecal indicator bacteria in fresh and marine waters, respectively, because they were correlated with occurrences of gastrointestinal illnesses in a series of epidemiological studies, in which fecal coliform "showed no correlation at all". Holding all surface waters to a standard based on an indicator that has been shown to not correlate with negative effects is not protective of beneficial uses. The bacterial objectives outlined in the Staff Report allow for additional protections for Lake Tahoe, a unique resource, and are sufficiently protective for other REC-1 waters in the Lahontan Region. The stated purpose of the revised statewide bacteria water quality objectives is to ensure that bacterial objectives for REC-1 waters are based on the most recent science and are consistently updated statewide. "The Bacteria Provisions seek to establish consistent statewide water quality objectives for California waters". The Lahontan Regional Water Board's current bacteria objectives do not appear to be indicative of human health risk or based on current data. As such, the LADWP requests that the SWRCB work with the Lahontan Regional Water Board's Bacteria Objectives in the Basin Plan to ensure that the revised statewide bacteria objectives are consistently applied throughout the state.		
	22.10	5. The Shellfish Harvesting Standards as outlined in Draft Ocean Plan should be reserved for commercial shellfish growing areas The Draft Ocean Plan contains provisions that set the following Shellfish Harvesting Standards: 2. Shellfish Harvesting Standards a. At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the following bacterial objectives shall be maintained throughout the water column: (1) The median total coliform density shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230	The comment is noted and will be considered during the prioritization of future planning efforts. Amending the Ocean to revise the shellfish bacteria beneficial use or objectives is not within the scope of this project. The proposed Bacteria Provisions are focused on bacteria as it applies to the REC-1 beneficial use.	No

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		per 100 ml. LADWP is concerned that the Shellfish Harvesting Standards that currently exist in the Draft Ocean Plan may be potentially unattainable. The Draft Ocean Plan objective is derived from the Federal National Shellfish Sanitation Program (NSSP), which was designed to apply where shellfish are intended for commercial sale, in transactions that traverse state boundaries. The LADWP respectfully suggests that because these Shellfish Harvesting Standard Limits were originally derived from the NSSP, they are part of a larger program of implementation within the NSSP, and may not be suitable for use in isolation as part of the Draft Ocean Plan Provisions. In particular, the application of this standard to areas with no viable or historical shellfish fisheries on the basis that "shellfish may be harvested" for future use does not seem appropriate. In order to reduce uncertainty regarding where the Shellfish Harvesting Standards will apply, the LADWP recommends that the Bacteria Provisions be revised to include language that explicitly provides that the California Department of Public Health (CDPH) will continue to have primary regulatory authority over shellfish commercial growing areas, particularly because said areas exist only in a few clearly designated areas. LADWP further recommends that the proposed bacteria objectives for Shellfish Harvesting Standards be revised to include language that provides that such bacteria objectives are to be applied solely to receiving waters, and not effluent waters.		
	22.11	6. The objective and use of LREC-1 is unclear based on a reading of the Draft Bacteria Provisions The Draft Bacteria Provisions outlines a new beneficial use definition for Limited Water Contact Recreation (LREC-1) water bodies. During the Staff Workshop held on July 10, 2017, the State Water Resources Control Board (SWRCB) staff provided the following proposed definition for LREC-1: Uses of water that support limited recreational activities involving body contact with water, where the activities are predominantly limited by physical conditions such as very shallow water depth or restricted access and, as a result, body contact with water and ingestion of water is infrequent or insignificant. The LADWP is concerned by the uncertainty of which physical condition factors will be considered in order for a water body to be classified as LREC-1. The current LREC-1 definition is predicated on a physical condition, such as a "shallow water depth". SWRCB staff indicated in their response to comments that the shallow water depth will be determined on a "case by case basis based on the site". LADWP recommends that the proposed Draft Bacteria Provisions for LREC-1 be revised to clarify what physical condition factors would be considered when determining whether a water body meets the LREC-1 standard in order to reduce any confusion on the classification of a LREC-1 water body.	See response to comment 3.15. Additionally, the Regional Water Boards have the discretion to propose a UAA for specific water bodies to have their beneficial use removed and designated as LREC-1 based on physical conditions such as restricted access and water depth. Such a UAA, if undertaken to remove a REC-1 use, must be adopted by the Regional Water Board and approved by the State Water Board and U.S. EPA. The site specific knowledge of the Regional Water Boards is essential to conducting the LREC-1 UAA. Statewide definition of factors may not be broadly applicable in all regions based on several factors including but not limited to the diversity of environment and climate.	No

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	22.12	7. The Bacteria Objective policy does not address REC-2 The Draft Bacteria Provisions and Draft Ocean Plan provide new Bacteria Objectives and tools to meet those objectives for REC-1 use water bodies. The LADWP respectfully requests that the proposed natural sources / reference approaches for REC-1 be broadened to apply to REC-2. The SWRCB can ease the challenge of complying with REC-2 standards by applying science based approaches currently proposed for REC-1 use by the policy. The LADWP recommends that the Santa Ana Basin Plan approach be taken for REC-2 - i.e. waters designated REC-2 be regulated using an anti-degradation approach, and that existing numeric objectives for fecal coliform for REC-2 uses be deleted. Additionally, the LADWP suggests that the natural source/reference approaches, high flow suspension, and seasonal suspension, apply to REC-2 as well as REC-1.	See response to comment 4.15.	No
	22.13	8. The Economic Analysis may not reflect the actual economic impact of the Draft Bacteria Provisions and Draft Ocean Plan On June 27, 2017 the SWRCB released an Economic Analysis of the Draft Bacteria Provisions and Draft Ocean Plan to address the potential economic impact related to compliance with the water quality Bacteria Objectives. The costs used in the economic analysis are based on Bureau of Labor Statistics data from between 2004 and 2006. The LADWP believes that the use of older data to estimate the economic impact of the Draft Bacteria Provisions and Draft Ocean Plan may not reflect the current day cost to implement the proposed water quality bacteria objectives. Implementation of the proposed Bacteria Objectives has the potential to impact LADWP's generating stations, lakes and reservoirs, and industrial facilities that may directly impact its ratepayers. The LADWP respectfully suggests that the SWRCB revise the Economic Analysis of the impact of the Draft Bacteria Provisions and Draft Ocean Plan to include the latest available data.	The labor rates in the Economic Analysis report were adjusted using appropriate price inflation indices to account for the changes in price over time (i.e., all labor rates were escalated to 2016-equivalent dollars; see footnote 1 to Exhibit 5-1). This is true of all non-labor costs as well. These indices capture fluctuations in prices over time at a level appropriate for the scope of this analysis. For the particular labor rates of interest in this analysis (wastewater plant operators and environmental engineers), actual labor rates appear to have increased slightly faster in California than is predicted using national average inflation indices. However, this effect is minimal and approximately similar to the rounding error of the analysis—recalculating process modification costs using May 2016 Bureau of Labor Statistics rates results in an estimated process modification cost increase of only 1 percent.	No
Middle Santa Ana River Bacteria TMDL Task Force Representative: Timothy F. Moore	23.01	The following comments are submitted on behalf of the Middle Santa Ana River Bacteria TMDL Task Force administered by the Santa Ana Watershed Project Authority (SAWPA). In general, the Task Force supports the proposed revisions to the statewide Water Quality Control Plan but would like to offer some additional suggestions for the State Board's consideration.	Comment noted.	No
	23.02	The proposed policy should explain that the EPA and the State have not yet developed or approved water quality objectives for pathogen indicator	The non-contact recreation or REC-2 beneficial use and any associated bacteria objectives are outside the	No

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		bacteria in waterbodies designated REC-2 (Non-Contact Recreation). The policy should also explain that, at present, EPA has determined that there is insufficient scientific information for establishing bacteria objectives for secondary contact conditions.	scope of the Bacteria Provisions which are specific to contact recreation or REC-1 beneficial use. The Bacteria Provisions would establish components of two separate statewide water quality control plans (and are not proposed water quality control *policies*), one pertaining to inland surface waters, enclosed bays, and estuaries, and the other to the state's ocean waters.	
	23.03	The proposed policy should recommend a scientific procedure for developing appropriate water quality objectives for waterbodies designed Limited REC-1. It is important to note that, in some cases, it may not be possible to evaluate a sufficient number of cases to rely on the epidemiological approach traditionally used to derive such standards. An alternate approach will be needed when this occurs.	See response to comment 3.15 and 3.18. Regional Water Boards have the discretion to select water bodies for LREC-1 designation, conduct a UAA for consideration, and develop water quality objectives for protection of the LREC-1 beneficial use on a site by site basis. See responses to comments 4.01 and 4.02.	No
	23.04	It would be helpful if the State Board could provide some specific examples of waterbodies that should be designated Limited REC-1 rather than REC-1. We suggest that the State Board use an approach similar to that found in the Sources of Drinking Water Policy (88-63) which describes the specific conditions for an exception from the presumptive MUN designation.	See responses to comments 3.15, 3.18, and 4.14.	No
	23.05	The proposed policy should provide a more detailed description of what constitutes "natural sources." We recommend that the State Board consider using the definition of "natural, uncontrollable sources" that was developed by the Santa Ana Regional Board (Res. No. R8-2012-0001) and subsequently approved by both the State Board and U.S. EPA. Since Section 13241 of the California Water Code requires consideration of all water quality conditions "that can be controlled" it is important to specify the natural conditions that the Board does not believe can be controlled in order to properly interpret and apply the proposed policy in future water quality assessments (e.g. 303D listings).	The definition of the term "reference system" has been revised in the Bacteria Provisions (Appendix A: Glossary) as follows: "A watershed or water body segment determined by the WATER BOARD to be minimally disturbed by anthropogenic stresses but otherwise is representative of conditions of the assessed site, watershed, or water body segment." As discussed in Chapter 5 section 5.3.1 of the Staff Report, natural sources are considered to be the sources of bacteria that are non-anthropogenic. Providing a detailed description of natural sources and including a distinction that such sources are uncontrollable should be provided by the Regional Water Board during the development of a TMDL. Natural sources may or may not be controllable and the types of natural sources vary by water body, therefore providing an exhaustive list applicable statewide is not feasible. The Regional Water Boards are uniquely knowledgeable about the distinctive geography, hydrology, sources of natural and anthropogenic	Yes

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			bacteria, channel design, effluent, nature of the use, and other factors which vary by site. As such, it is appropriate for the Regional Water Boards to provide a more detailed definition of a natural sources based on site-specific data and information. Additionally, Chapter 10 section 10.3 of the Staff Report was revised to expand the discussion of water quality conditions that could reasonably be attained through coordinated control of all factors affecting water quality.	
	23.06	As written, the proposed policy only allows Regional Board to authorize a natural source exclusion in the context of an approved TMDL. However, where an exceedance occurs due solely to natural sources, no TMDL may be needed. The State Board should consider adopting the language found in the Central Valley Basin Plans which specifies that, where the natural concentration of pollutants is higher than the water quality objective, that natural concentration becomes the objective. The Central Valley Basin Plans also include a provision that explicitly states that there is no obligation to reduce the natural concentration of pollutants in order to comply with the default water quality objective.	See response to comment 4.08. Adopting the recommended language statewide is beyond the scope of the project. Additionally, the Bacteria Provisions do not supersede the provisions in the Central Valley Basin Plans' Policy for Application of Water Quality Objectives regarding cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective. Section IV.E.1 of the ISWEBE Bacteria Provisions and Section III.D.d of the Ocean Plan Provisions were revised to remove the phrase "strictly applied in all circumstances" from the statement that the geometric mean and the STV contained in the applicable bacteria water quality objectives shall be applied in all circumstances, except in the context of a TMDL. This changes was made in recognition that objectives may not be applied when evaluating a mixing zone, in a compliance schedule, and when applying the Central Valley Basin Plans' Policy for Application of Water Quality Objectives. Furthermore, if natural sources of bacteria are at levels that make REC-1 uses unsafe for public health, then the Water Board should consider performing a use attainability analysis to determine if the REC-1 use designation is appropriate. This process is explained within the Water Quality Control Policy for Addressing Impaired Water: Regulatory Structure and Options.	Yes
	23.07	The proposed policy should provide additional guidance on how the bacteria objectives should be applied when developing a TMDL.	See response to comment 5.06.	No

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		Traditionally, a TMDL is the sum of point sources (WLA), non-point sources (LA), natural sources and a Margin of Safety (MOS). However, if natural sources (by themselves) cause an exceedance of the applicable objectives, this can result in an allocation of "zero" bacteria to point sources such as MS4 discharges. The policy should make clear that, where there is no assimilative capacity available, waste discharge requirements should be set equal to the water quality objective. The mass-based approach for developing TMDLs does not work well for bacteria.	It is uncertain from the comment if the natural source referenced is associated with the discharge or with the receiving waterbody. It is not appropriate for the Bacteria Provisions to determine how to establish requirements in waste discharge requirements. It is appropriate for the Regional Water Board to establish such requirements after consideration of the unique characteristics of the waterbody, watershed, and discharge in question. The Bacteria Provisions are clear that, in order to apply the natural sources exclusion approach of the Bacteria Provisions, natural sources can only be determined to be the sole cause of bacterial exceedances if all anthropogenic sources of bacteria have been identified, quantified, and controlled. In other words, all human sources of bacteria to that waterbody would be determined to be zero. Therefore, no additional clarifications are needed to the policy. Furthermore, Chapter 6 of the Staff Report provides a detailed description of reasonable foreseeable methods to achieve compliance with the Bacteria Provisions through the TMDL process. The process for developing and adopting TMDLs is outlined in the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options. The TMDL would be subject to approval by the Regional Water Board, State Water Board, and U.S. EPA to determine adequate protection of beneficial uses and compliance with applicable water quality standards. Finally, it is appropriate for the Regional Water Board, and not the Bacteria Provisions, to determine the most appropriate form of a TMDL for bacteria or another pollutant.	
	23.08	The policy should provide guidance on how compliance is to be computed and reported when data from multiple sample points in the same lake or stream segment are collected on the same day. Is compliance evaluated on a water body-wide basis or is compliance judged independently for each and every sampling location?	Compliance evaluations will be determined by the Regional Water Boards based on the site-specific conditions of the steam segment or lake. The specific situation being evaluated would determine if samples are judged independently or evaluated on a water body-wide basis. Additionally, temporal and spatial	No

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			dependence of sample analysis as it applies to assessment for Clean Water Act section 303(d) is provided in Section 6.1.5 of the Water Quality Control Policy for Developing the California 303(d) List.	
	23.09	Because the proposed policy establishes a new water quality objective that is more stringent than the current water quality objectives for pathogen indicator bacteria, it should make clear that dischargers are entitled to a new compliance schedule in order to meet the new standard.	See response to comment 1.01. For those facilities that require a new compliance schedule to meet the new standard, the current Compliance Schedule Policy (Resolution No. 2008-0025) will apply. See also Chapter 2 section 2.7 of the Staff Report for a brief discussion on the Compliance Schedule Policy.	No
	23.10	The proposed policy should include a provision that allows dischargers to make an alternate compliance demonstration by showing that the incidence of actual illness does not exceed the acceptable risk level even if the measured concentration of pathogen indicator bacteria is higher than the water quality objective. It is the risk-level that is the actual water quality standard; the pathogen indicator bacteria is merely one translator mechanism for evaluating probable compliance with that standard. There are other valid translators as well.	See responses to comments 4.01, 4.02, and 22.04.	No
	23.11	There is no evidence offered to support the claim made in the Economic Analysis that the level of effort required to meet the more stringent risk standard is the same as the level of effort required to meet the less stringent risk standard. If a water body was actually in compliance with the latter, any additional effort/cost required to achieve the former should be considered an unfunded state mandate because the additional implementation obligations were not required in order to comply with the Clean Water Act.	See response to comment 7.02 and 15.17. As an initial matter, the assertion that the proposed bacteria water quality objectives contained in the Bacteria Provisions are an unfunded state mandate is premature until the issuance of an applicable permit. The bacteria water quality objectives are based on U.S. EPA's 2012 Recreational Water Quality Criteria, which are authorized under Clean Water Act sections 304(a)(1) and 304(a)(9) and are for the protection of primary contact recreation in both coastal and non-coastal waters, based upon consideration of all available information relating to the effects of fecal contamination on human health. The Bacteria Provisions do not establish a program of implementation to achieve the updated bacteria water quality objectives. Any requirements on NPDES permittees are not a state, reimbursable mandate because they are required under the broad, federal mandate of the Clean Water Act NPDES program. The Clean Water Act and its implementing regulations require NPDES permittees to demonstrate their discharge will not cause or contribute to a violation of	No

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			water quality standards. If there is "reasonable potential," that the discharge may cause or contribute to an excursion above the applicable water quality objective, the Water Boards are obligated under the Clean Water Act to develop water quality based effluent limitations to ensure attainment of water quality standards. (40 CFR § 122.44(d).)	
	23.12	It appears that the Economics Analysis performed by Abt Associates does not understand the critical distinction between EPA's 1986 bacteria criteria and EPA's 2012 bacteria criteria. The 1986 criteria does not require that a water body demonstrate simultaneous compliance with BOTH the geometric mean and the single sample maximum (SSM). The geometric mean is the preferred compliance metric and the SSM is only used if there is insufficient data to compute a geomean. The SSM is also recommended as a mechanism for triggering public notifications. The 2012 criteria does require that a water body demonstrate simultaneous compliance with BOTH the geomean and the Statistical Threshold Value (STV) and, as such, is considerably more stringent than the 1986 approach. Abt's assumption that the new criteria impose no additional compliance burden compared to the old criteria is incorrect and, as such, greatly undermines the validity of the subsequent economic analysis.	The comment is incorrect. Page 8 of the 1986 U.S. EPA Ambient Water Quality Criteria for Bacteria states "Noncompliance with the criterion is signaled when the maximum acceptable geometric mean is exceeded or when any individual sample exceeds a confidence limit, chosen accordingly or to a level of swimming use." In other words both the geometric mean and single sample maximum value should not be exceeded. Similarly, the 2012 U.S. EPA Recreational Water Quality Criteria recommends that both the geometric mean and STV be met to establish compliance. Since Abt Associated completed their analysis, the Bacteria Provisions were revised to clarify the use of the geometric mean unless a statistically sufficient number of samples is not available, in which case the STV or SSM value is used. Section 10.4 of the Staff Report has been revised accordingly.	Yes
	23.13	The Economic Analysis performed by Abt Associates relies on an obsolete and invalid version of the Santa Ana Region's Basin Plan. The Economic Analysis states that fecal coliform are used as the pathogen indicator bacteria. This is not correct. The Santa Ana Regional Board deleted the fecal coliform objective from the Basin Plan and replaced them with E. coli objectives in 2012. The State Board approved this change in 2014 and EPA approved the change in 2015. The updated Basin Plan has been posted on the Regional Board's website since February of 2016.	The comment is correct. Abt Associates. misunderstood Chapter 4 page 4-4 of the Santa Ana Basin Plan as applying to all waters rather than being applicable to only bays and estuaries. Table 6 of the Staff Report has been revised to show that the fecal coliform objectives for REC-1 in the Santa Ana Basin Plan only apply to bays and estuaries. The economic analysis in Chapter 10 section 10.4 of the Staff Report was revised to correct inaccuracies and reflect revisions made to the Bacteria Provisions. The monitoring costs and treatment process costs for municipal wastewater discharges to freshwater in the Santa Ana Region are not likely to change significantly due to the water quality objectives included in the Bacteria Provisions. These dischargers will either continue to monitor for total coliform if implementing	Yes

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			the Title 22 recycled water criteria as effluent limits or will implement the *E. coli* objective, which is expressed as the same geometric mean of 126 cfu/100 mL as the statewide water quality objectives.	
	23.14	Abt's Economic Analysis also inaccurately describes the TMDL compliance obligations for the San Bernardino County MS4 program. San Bernardino's obligations are substantively identical to those described for the Riverside MS4 program. Both counties must implement the Comprehensive Bacteria Reduction Plan (CBRP) approved by the Regional Board.	The comment is correct. The information provided in Exhibit A-1 of the Economics Analysis prepared by Abt Associates is incomplete for San Bernardino County. NPDES permit CAS618036 applies to San Bernardino County and was last renewed on January 29, 2010. Page 52 of the NPDES permit outlines several requirements for the Middle Santa Ana River Bacteria TMDLs for dry weather including the development and implementation of a comprehensive bacteria reduction plan. https://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2010/10_036_SBC_MS4_Permit_01_29_10.pdf. This mischaracterization will not have an effect on the analysis and conclusions reached in the Economic Analysis. See also response to comment 12.14.	No
	23.15	The Economic Analysis should be revised to provide an estimate of the expected number of illnesses avoided by adopting the proposed water quality objective and compare that to the expected number of illnesses avoided if the (slightly) less stringent pathogen indicator objective were adopted. It is not enough to evaluate only the risk rate, the probability of illness is also a function of the number of people exposed. Requiring strict compliance at stream locations where there is little (if any) actual water contact recreation provides no measurable improvement in public health even if the theoretical risk is lower. We recommend that the State Board instruct Abt to carefully consider the detailed Cost-Benefit Analysis now being prepared by the San Diego Regional Board (in collaboration with local stakeholders). Preliminary results show that focusing implementation efforts on areas where bacteria objectives are being exceeded AND there is a strong indication of human sources provides the highest reduction in actual illnesses. The San Diego analysis shows the cost-per-illness avoided for various implementation alternatives. This is a more useful and pragmatic approach for considering "Economics" as required in section 13241 of the California Water Code.	Estimating the amount of illnesses avoided by implementing the Bacteria Provisions vs. implementing the less stringent alterative illness rate is not within the scope of the economic analysis required by section 13241 of the California Water Code. The process for selecting the more stringent illness rate of 32/1000 recreators is discussed in Chapter 5 section 5.2.4 and Chapter 9 of the Staff Report. The U.S. EPA 2012 Recreational Water Quality Criteria is based on a statistical distribution from national epidemiological studies estimating the probability of illnesses occurring based on a revised definition of illness given a defined level of bacterial indicators. The Cost-Benefit Analysis being conducted by the San Diego Water Board is based on several region- and site-specific studies examining specific implementation provisions of TMDLs. The level of detail being undertaken by the San Diego Water Board is in excess of that required by section 13241 of the California Water Code for the Bacteria Provisions. Under the	No

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			requirements of California Water Code sections 13170 and 13241, subdivision (d), and Cal. Code Regs., tit. 23, section 3777, subdivisions (b)(4) and (c), the State Water Board must consider economics when establishing water quality objectives. This consideration of economics is not a cost-benefit analysis, but a consideration of potential economic factors associated with a suite of reasonably foreseeable measures to comply with the Bacteria Provisions.	
Monterey County Public Health Laboratory Representative: Donna Ferguson	24.01	I'd like to comment on the Water Quality Objectives for Estuarine and Marine Water Bacteria Indicator. I agree that it's time to eliminate total coliform testing; however, I don't recommend dropping fecal coliform testing. First, based of years of monitoring estuarine and marine waters, labs have observed that enterococci can also cause false positives. In fact, the high false positive rates using IDEXX Enterolert in estuarine water were one of several reasons why Orange County Public Health and OC Sanitation District decided to use EPA Method 1600 (membrane filtration). Second, you gain more information using two indicators and comparing the relative levels. If BOTH fecal and enterococci levels are high, this indicates a greater possibility of fecal contamination than if enterococci levels alone. If enterococci levels are consistently high but fecal coliform levels are relatively lower, this could indicate natural source input or enterococci regrowth. Although certain fecal coliforms can also grow in estuarine and marine waters, most do not survive as well as enterococci because unlike enterococci, they do are not salt tolerant. I'm unaware of any long term studies comparing the two indicator counts at chronically elevated beach sampling sites; however, I can tell you based on my experience comparing historical monitoring data and working on multiple microbial source tracking studies that comparing fecal coliform and enterococci counts can be far more informative than relying on enterococci data alone. I might be in favor of using enterococci alone if it was paired with an alternate indicator sometime in the future. Also, it's been my experience, along with other lab and microbial source tracking folks that E. coli is more specific than fecal coliforms for fecal waste at many beaches, fresh water bodies and urban runoff streams in California. I realize that the EPA recommends enterococci for marine because they survive longer than E. coli; however, there are far more genera and species of fecal coliforms that occur naturally in the environment as compared to E. coli.	Comment noted. See response to comment 18.02. Overall, U.S. EPA determined that the state of the science is not developed sufficiently to distinguish environmental sources from other sources of fecal indicator bacteria on a national basis. In some circumstances, the presence of fecal indicator bacteria in water is not necessarily an indication of recent fecal contamination or potential health risk. Therefore, U.S. EPA has concluded that states adopting the 2012 U.S. EPA Recreational Water Quality Criteria would result in water quality standards that are protective of the primary contact recreation designated use. Furthermore, a detailed source analysis could be undertaken during the regulatory process utilizing several indicators as appropriate on a site specific basis. The Ocean Plan Amendment would retain the fecal coliform objective contained in the existing Ocean Plan because recent California-specific epidemiological studies demonstrate that fecal coliform is a good indicator of fecal contamination and is a better indicator than enterococci of gastrointestinal illness during certain types of water exposure and environmental conditions. Section 5.2.3 of the Staff Report has been revised to provide the justification for retaining fecal coliform.	Yes
San Diego Unified Port District	25.01	The District is in support of the comment letter submitted by the County of San Diego (County) on behalf of the San Diego Copermittess. The District is consistent with the County and is supportive of the State's efforts to align	Comment noted.	No

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Representative: Karen Homan		recreational water quality standards with the United States Environmental Protection Agency's (USEPA) 2012 Recreational Water Quality Criteria.		
	25.02	The District supports the concepts discussed in the County's comment letter, such as (but not limited to the need for a more in-depth description of the risk-based approach, seasonal consideration to objectives and the application of the reference reach/ Antidegradation approach to all waterbodies and calculations.	See response to comments 4.01, 4.06 and 4.08.	No
	25.03	2. The District suggests including language that addresses specific minimum sampling frequency requirements when calculating the rolling geomean for E.coli and Enterococci. A define sampling frequency minimum will help standardize analyses across the state. A standardized approach may assist in clearly defining listing and delisting policies under California's Clean Water Act Section 303(d) Listing Policy for impaired waterbodies. As such, in the third paragraph under "Enterococci" on page 3, the District suggests the following edit (new text added/removed text); a. To determine attainment of the E. coli and enterococci BACTERIA WATER QUALITY OBJECTIVES, the GEOMETRIC MEAN values shall be applied based on a statistically ~~sufficient~~ significant number of samples, which is ~~generally~~ not less than five samples equally spaced over a six-week period. If a statistically ~~sufficient~~ significant number of samples are not available to calculate the GEOMETIC MEAN, the attainment of the water quality standard shall be determine based on the STV.	Comment noted. The proposed language changes could create scenarios where the geometric mean could not be calculated if samples could not be collected due to weather conditions or failed equipment. A minimum of weekly sampling is the preferred sampling frequency to determine compliance with the bacteria water quality objectives. However, flexibility should be allowed in cases where collection could not occur for one or two sampling events. Such a determination will be left to the Regional Water Boards. See also response to comment 4.07.	No
	25.04	The District supports the State Board's efforts toward the protection of beneficial uses and is committed to our respective agencies' shared goal of improving the recreational water quality in San Diego Bay. The District greatly appreciates the State Board's on-going work and looks forward to continued collaboration on programs and initiatives that assist in water quality protection throughout the Bay, which, in turn benefits all residents and visitors alike.	Comment noted.	No
Quartz Valley Indian Reservation Representative: Crystal Robinson	26.01	1. Proposed statewide objectives for indicator bacteria weaken the Regional Board's current numeric standards Current numeric standards in Region 1 for fecal coliform are 50 cfs/100 mL, whereas the proposed threshold for E. coli is 100 cfs/100 mL. E. coli is a component of fecal coliform, and although the percent composition of E. coli in a fecal coliform sample is variable, it is never more than 100%. Therefore, the State Board's proposed increase in the bacterial threshold would at the minimum double the acceptable bacteria levels, and subsequently increase the illness rate which has become accepted by the public residing in Region 1 under the current regulations. This is an important point, because the EPA noted that the illness rates of 32 and 36/1000 were chosen in the new bacteria standards because these illness rates were accepted by the public. Because	See responses to comments 2.05, 3.06, 3.08, and 20.03.	No

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		there is variability in the ratios of E. coli to fecal coliform, agreeing on a comparable E. coli threshold is challenging. For example, the E. coli concentration presented in appendix C of the Staff Report suggests that an E. coli threshold of 45 cfu/100 mL corresponds to the current fecal coliform limits, based on a 90% conversion factor used by the Ocean Plan staff. Data from the Scott River watershed showed a range of E. coli to fecal coliform ratios, with a median ratio of about 50%, based on 160 paired samples (Genzoli et al. 2015), which points to an E. coli threshold of about 25 cfu/100 mL as a comparable threshold to the current standards. The figures below show the range in E. coli to fecal coliform ratios, and the paired E. coli and fecal coliform samples from the Scott River Watershed with the median regression (black line), the current fecal coliform thresholds (dashed red line), and the corresponding E. coli threshold of 25 cfu/100 mL (dashed blue line) that we propose for Region 1. The proposed E. coli threshold was plotted where the fecal coliform threshold crossed the median linear regression. In addition to a lower illness rate being accepted by those living in Region 1, the illness rate of 32/1000 water users is unacceptably high for people with increased levels of water contact. In the Tribal communities within the Klamath Basin, many people, including young children, use lakes and rivers for recreation, subsistence, and ceremonies throughout the year. Some individuals are immersed in water daily during summer months. At an illness rate of 32/1000, and a daily E. coli level of 100 cfu/100mL, an individual who swims every summer day would be expected to become ill three times that summer. For a single individual, three bouts of gastrointestinal illness due to water contact is unacceptable.		
	26.02	Region 1 also has numerous water-bodies that warrant increased levels of protection due to their pristine nature, including high mountain lakes used for drinking water by wilderness travelers and proposed Outstanding National Resource Water (Smith River). Additionally, rivers coming out of minimally disturbed ecosystems should receive, at a minimum, the current levels of protection against bacterial contamination. The Region 1 Basin Plan contains a narrative objective, which states, “the bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels”. The Staff Report says that these narrative objectives would not be superseded by the proposed statewide numeric objectives; however, the narrative objective requires demonstrating what background levels are in a specific water-body. Further, because background levels are not currently understood for many water bodies, there could be debate as to what background levels should be. Therefore a threshold for E. coli should be established for use, when background values are not available, that is at least as protective as current thresholds.	Comment noted. The Bacteria Provisions only apply to the protection of the REC-1 beneficial use. The North Coast Water Board can utilize the existing narrative objective within the basin plan to create specific water quality objectives for the protection of other designated beneficial use like Native American Culture. Part of establishing water quality objectives for other beneficial uses would require a determination of background levels as described by the comment. Establishing such objectives and a natural background level is outside the scope of the Bacteria Provisions. Chapter 2 section 2.3.2 describes that epidemiological studies have been conducted to link levels of fecal indicator bacteria to the risk of illnesses resulting from recreating in waters contaminated by fecal pollution.	No

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			Using fecal indicator bacteria concentrations, it is possible to make a reasonable determination that the beneficial use of REC-1 is potentially impacted. The Bacteria Provisions include updated water quality objectives for bacteria to protect human health for the beneficial use of REC-1 in fresh, estuarine, and marine waters based on the best information and science provided by the 2012 U.S. EPA Recreational Water Quality Criteria. In addition, the Ocean Plan Amendment would retain the fecal coliform objective contained in the existing Ocean Plan because recent California-specific epidemiological studies demonstrate that fecal coliform is a good indicator of fecal contamination and is a better indicator than enterococci of gastrointestinal illness during certain types of water exposure and environmental conditions.	
	26.03	Under section 5.2.4 (Issue E - Level of Public Health Protection for Illness Rate for Fresh and Marine Waters), there should be an option for Region 1 (North Coast) waters similar to option 4, which states, "Continue to maintain a higher standard for Fecal Indicator Bacteria for Lake Tahoe which is designated as an Outstanding National Resource Water. Under this option Lake Tahoe would retain an equivalent objective to their bacteria objective of 20/100ml fecal coliform (17cfu/100ml for E. coli)." As was done for Lake Tahoe, Region 1 should also retain previous protective levels based on both the more pristine waters and the high water contact levels of many individuals residing in Region 1, especially from within tribal communities.	See responses to comments 3.06 and 3.08.	No
	26.04	2. Narrative objectives that will not be superseded for Region 1 should be clearly stated in the new bacterial provisions Currently, the re only mention how the old numeric criteria from the Basin Plans will be treated in response to the Bacteria Provisions. It should be clearly stated in the Bacteria Provisions that narrative water quality criteria will supersede the new draft provisions. These exceptions for each region should be clearly stated in the Bacteria Provisions so that water quality managers do not have to search through multiple documents (Staff Report and Basin Plans) in order to understand what the most current bacterial regulations are for their regions. All deviations to the state-wide standard, numeric or narrative, should appear in Table 1 of the Bacteria Provisions, as the exception for Lake Tahoe does currently.	See response to comment 19.02. Additionally, the site-specific objective for Lake Tahoe has been removed from the Bacteria Provisions and Table 1, as described in Chapter 5 section 5.2.4 of the Staff Report.	No

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	26.05	Proposed weekly sampling intervals are too restrictive to tribal natural resource departments' water quality monitoring programs: alternative sampling schedules should be accepted Sampling water bodies for bacterial exceedances is time consuming and expensive for small water quality programs, especially in cases where staff are traveling to water-bodies that are not part of regular water quality sampling or to water-bodies in remote locations. Although the weekly sampling schedule suggested by the State Board is more relaxed than the five samples in 30 days suggested by the EPA, other sampling regimes should be accepted. For example, many programs already sample other water quality parameters twice per month (Karuk Tribe of California 2013, Yurok Tribe Environmental Program 2013). In these cases, adding bacterial sampling to the established survey routine would provide five samples over a 10-week period. Page 72 of the Staff Report explained that the shorter duration (30 days) was chosen as the interval by the EPA in order to "help get the information out to the public more quickly and insuring a better health perspective." Using Beach Action Values, explained below, avoids the need to strictly define the time intervals between bacteria samples because it provides an alternative indicator for public health notifications based on the most recently collected bacteria samples. Although the six-week period suggested in the Staff Report is a good time period to strive for, longer sampling windows should be accepted when listing impaired water bodies. Acceptance of alternative sampling timelines should be stated in the Bacteria Provisions so that water quality monitoring departments can plan sampling in a way to most efficiently utilize their available resources. The case for flexible sampling schedules is especially relevant when sampling in remote locations. The Quartz Valley Indian Reservation has been sampling lakes and streams in wilderness areas to assess the degree of bacterial contamination associated with cattle grazing (Genzoli et al. 2015). These water bodies are important to monitor because the Marble Mountains are recreational and cultural resources, but sites are remote and require long hikes to reach these sites.	See responses to comments 3.03, 4.07 and 4.17. Individual sampling design is beyond the scope of the project. The Bacteria Provisions provide flexibility for determining assessment of water quality standards in the event a sufficient number of samples cannot be collected to calculate the geometric mean on a rolling six-week basis due to limitations related to access and remoteness. In these cases, determination of REC-1 beneficial use support will be determined utilizing the STV.	No
	26.06	4. Beach action values should be included in the Bacteria Provisions to guide public health warnings Beach action values (BAVs) were suggested in the EPA 2012 draft bacteria standards as single sample thresholds to be used to warn the public of potentially dangerous water conditions. Although BAVs were not suggested by the EPA to be used for regulatory thresholds, a public warning level is helpful in informing water users of potentially dangerous conditions as they occur rather than waiting for a six-week average to base public health postings from. The EPA suggested a BAV of 190 cfu/100ml E. coli using the 32/1000 illness rate. More protective bacterial standards in Region 1 should	See responses to comments 4.17 and 33.18.	No

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		correspond to more protective BAVs, based on the EPA suggested method: BAV corresponds to the 75th percentile of the E. coli water quality distribution.		
	26.07	5. LREC-1 designation should not be applied to Region 1 at any time, and anywhere in the state due to low-water conditions associated with impairment by flow alteration We disagree with several aspects of the State Board's proposal to add a new Limited Water Contact Recreation (LREC-1) beneficial use for waters where body contact with water and ingestion of water is infrequent due to restricted access or very shallow water depth, such as in concrete flood conveyance channels. Los Angeles is currently the only Regional Board that has designated any water bodies as LREC-1. The State Board's support for additional designation of LREC-1 waters promotes an unfortunate vision for the future of the state's water bodies. The State should promote restoration of water quality and increased public access. The LREC-1 designation would be a step in the opposite direction. The LREC-1 designation would be particularly inappropriate in Region 1 due to the high water contact of people throughout the calendar year. Especially in the tribal communities, ceremonial, fishing and gathering practices occur throughout the year in a wide range of temperature and flow conditions. Additionally, downgrading the REC-1 beneficial use designation to LREC-1 due to low-water conditions is not protective of public health. Some people will be drawn toward any water left during hot and dry conditions. Further, downgrading the beneficial use category, and thus holding the water-body to lower bacterial standards, does not promote systematic improvements in water quality that often require increased in-stream flows. Therefore, the State Board should not expand the LREC-1 designation.	See responses to comments 3.15 and 3.18.	No
Sacramento Regional County Sanitation District Representative: Terrie L. Mitchell	27.01	In general, Regional San is supportive of the State Water Resources Control Board's (State Water Board) goal to ensure that the most effective bacteria indicator is used, and to adopt statewide standards conforming to United States Environmental Protection Agency's (US EPA) recommendations.	Comment noted.	No
	27.02	However, we do have questions and comments on the proposed Bacteria Provisions and Draft Staff Report. Our overarching comment is that multiple regulatory issues are attempting to be addressed within the Bacteria Provisions, including bacteria criteria, a new beneficial use, and the proposed Variance Policy. Combining these issues into a single document creates some confusion and requires clarification.	See responses to comments 4.03, 5.06, 23.06, 27.03 27.05, 27.06, 27.07, 27.08.	No
	27.03	Regional San supports the concept of suspending the REC-1 beneficial use designation during periods when water conditions are unsafe or when the use is inapplicable. It should be recognized and reflected in the staff report and provisions that high flows may not be limited to a single season. For	Chapter 5 section 5.3.2 of the Staff Report indicates that a "use attainability analysis would need to be developed for any channels or rivers that are seeking a high flow suspension of the objectives. " (Code of	No

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		example, high flows can occur during late spring, summer, or fall rain events.	Federal Regulations 40 121.10 (g)(2)). There is no distinction that high flows are limited to a specific single season but rather when the actual conditions exist such that the REC-1 use cannot be attained as determined by the applicable use attainability analysis.	
	27.04	Also, it is not clear how water quality objectives are intended to be addressed for waters that exceed the REC-1 water quality objectives. The Bacteria Provisions provide for a natural sources exclusion approach and on page 73 states that "…requirements placed upon anthropogenic dischargers may not reduce the actual sources of bacteria if those sources are natural". And would require "…the control of all anthropogenic sources of bacteria and the identification and quantification of natural sources of bacteria." The report acknowledges that, for bacteria, many major Publicly Owned Treatment Works (POTWs) are already subject to existing State Water Board Division of Drinking Water (DDW) guidelines based on recycled wastewater effluent recommendations that are more stringent than the proposed REC-1 bacteria water quality objectives. Also, using the current treatment practices, these facilities have little difficulty meeting permit conditions based on the proposed objectives. The State Water Board should clarify the intended plan for achieving the proposed Bacteria Water Quality Objectives when a majority of loading comes from natural sources that are excluded.	See responses to comment 5.06 and 23.06.	No
	27.05	In some regulatory programs that involve Total Maximum Daily Loads (TMDLs), natural and legacy sources are the predominant sources of contaminants (such as bacteria and mercury), but their control is not included or is specifically excluded from the program implementation requirements. This often shifts regulatory requirements for control to NPDES permittees, even when control of those sources may not result in significant or measurable environmental improvement. We recommend that the State Water Board develop a policy or guideline for exclusion of insignificant dischargers and di minimus sources in these types of instances.	The comment is noted and will be considered during the prioritization of future planning efforts. Developing a specific policy or guidance for exclusion of insignificant dischargers and di minimus sources is outside the scope of the Bacteria Provisions.	No
	27.06	The Bacteria Provisions propose a new limited water contact recreation (LREC-1) beneficial use for designation. However, the report doesn't propose water quality criteria or guidance associated with the water quality that would support LREC-1. The distinction between REC-1 in which ingestion is "reasonably possible" and LREC-1 where ingestion is "infrequent or insignificant" appear to overlap, and…	See responses to comments 3.15 and 3.18. There is an overlap with the definitions of LREC-1 and REC-1 because they are both types of recreational beneficial use. The difference is that LREC-1 has a small likelihood of ingestion of water as a result of recreation activities which can be due to several factors. Water quality objective to protect the LREC-1 beneficial use would be developed as part of the UAA process.	No

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	27.07	…determining which beneficial use applies may be difficult. It's also unclear what is meant by very shallow water depths – this should be clarified. If public assets (water body) exist on private (restricted or no access) lands, there should not be a designated beneficial use such as LREC-1, or for that matter, REC-1. Waters that are restricted from public use such as those that are fenced, posted, or otherwise prohibit public use and access should not have the LREC-1 beneficial use, and the staff report and/or definition should indicate this	See responses to comments 3.15 and 3.18. The LREC-1 beneficial use must be designated through a UAA where such would be supported by a less stringent bacteria objective. A water body with very shallow water depth or located behind a fence would not support a LREC-1 designation. Waterbodies on private lands behind fences may still be required to meet REC-1 water quality objectives if they are upstream and flow into waterbodies that are designated with the REC-1 beneficial use.	No
	27.08	Since the proposed LREC-1 beneficial use could be impacted by contaminants other than bacteria such as cyano-toxins, we believe that a discussion is appropriate in this staff report to address appropriate water quality objectives and specific related contaminants.	Cyano-toxins and the impacts to LREC-1 beneficial uses are not within the scope of the Bacteria Provisions.	No
	27.09	The Bacteria Provision Draft Staff Report should be clarified for the method(s) for monitoring E. coli and enterococci. On page 19 the first paragraph states "The Bacteria Provisions include the U.S. EPA recommended use of method 1603 or equivalent for monitoring E. coli and method 1600 or equivalent for monitoring enterococci." Also, there are numerous places in the report that a table for U.S. EPA 2012 Recreation Water Quality Criteria is presented (e.g. Table 5). In the notes below these tables it states "U.S. EPA recommends using U.S. EPA Method 1600 (U.S. EPA, 2002a) to measure culturable enterococci, or another equivalent method that measures culturable enterococci and using U.S. EPA Method 1603 (U.S. EPA, 2002b) to measure culturable E. coli, or any other equivalent method that measures culturable E. coli." EPA 1603 is a membrane filtration method and it can be costly and complicated. As per the method: "Water samples containing colloidal or suspended particulate material can clog the membrane filter and prevent filtration, or cause spreading of bacterial colonies which could interfere with enumeration and identification of target colonies." The proposed Bacteria Provision should remove any reference to a specific method. Instead, alternate appropriate methods that measure culturable E. coli" should be allowed. Under 40 CFR 136.3 there are other methods approved for E. coli in wastewater and ambient water. Some of them would not have the same performance issues as method 1603, and are less complicated and less costly. These are Most Probable Number (MPN) methods as opposed to membrane filtration (direct count) methods. The provisions and report should list methods such as SM 9221 B.F. (2006) and Colilert (IDEXX). Both of these methods are approved under 40 CFR 136.4 for wastewater and ambient water.	See responses to comments 4.03	No

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Sacramento Stormwater Quality Partnership Representative: Dana Booth, and Sherill Hunn	28.01	The Partnership has reviewed comments prepared by the California Stormwater Quality Association (CASQA) on the Bacteria Provisions; we fully support CASQA's comments in support of the State Water Resources Control Board (State Water Board)'s effort to develop the Bacteria Provisions, and we agree with the specific concerns that CASQA raised. The State Water Board's effort will provide consistency statewide through the use of recreational objectives based on the United States Environmental Protection Agency (USEPA)'s 2012 Recreational Water Quality Criteria (USEPA 2012 Criteria). The objectives reflect current epidemiologic data and consider implementation issues relevant to stormwater agencies.	Comment noted.	No
	28.02	The Partnership supports the use of the reference reach/antidegradation approach and natural sources exclusion approach, which will provide Regional Water Boards with flexibility to adapt the water quality objectives (WQOs) to their specific regions. It is important that stormwater agencies focus bacteria reduction efforts on anthropogenic sources. However, the Partnership requests that these implementation tools not be limited to waterbodies that have an existing Total Maximum Daily Load (TMDL) or TMDL in development. The General MS4 Permit specifies a Pollutant Prioritization approach for permittees to implement stormwater management programs focused on their prioritized water quality constituents, to address priority water quality issues and preclude the need for TMDLs to be developed. It would be appropriate for dischargers to have the same tools available as they actively work to address bacteria as a water quality issue so as to preclude the need for TMDL development.	Comment noted. See response to comment 4.08.	No
	28.03	The Partnership requests that the State Water Board allow the high flow and seasonal suspension of the REC-I beneficial use implementation provisions to be completed without a UAA. The requirement to complete a UAA requires review by USEPA, and places an unnecessary burden upon the dischargers and Regional Water Boards, which will likely impede these options from being implemented. There is precedent within Regional Water Board Basin Plans for a temporary suspension of objectives, without a UAA. The Santa Ana Regional Water Board includes criteria within the Basin Plan for temporary suspension of recreational use designations and objectives, which can be implemented without a UAA. As part of the work that led to the adoption of the 2012 amendments to the Santa Ana Basin Plan recreation standards, the Stormwater Quality Standards Task Force considered the merits of and various alternatives for modifying the REC-1 definition to improve clarity and precision, based on careful consideration of the scientific basis of the 1986 USEPA Recreational Criteria and earlier criteria guidance. The Santa Ana Basin Plan provides definitions for site-	See response to comment 4.14.	No

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		specific flow triggers, eligibility for temporary suspensions, engineered or highly modified channels, and for the termination of the temporary suspension. The Partnership suggests that the State Water Board either provide similar guidance, or allow Regional Water Boards to develop regional guidance for temporary suspensions without development of a UAA.		
	28.04	Thirdly, the Partnership appreciates the inclusion of these implementation options in the Bacteria Provisions, and requests that the State Water Board provide implementation guidance to the Regional Water Boards and dischargers. The implementation options within the Bacteria Provisions provide a useful toolkit, but place a significant technical burden on the Regional Water Boards and dischargers - which will result in statewide inconsistencies. Guidance developed by the State Water Board would support statewide consistency for regulatory programs and technical evaluations.	See response to comment 22.02. The purpose of the Bacteria Provisions is to provide statewide consistency with the indicator organisms used to determine compliance and provide protection for the REC-1 beneficial use. The Regional Water Boards are given the authority to determine the methods for implementation of water quality objectives for waters within their region.	No
	28.05	COMMENT 2 - ALLOW FLEXIBILITY IN THE SAMPLING FREQUENCY AND METHOD OF CALCULATING GEOMETRIC MEAN AND STATISTICAL THRESHOLD VALUE. The Partnership supports the inclusion of a minimum of a six-week period for the calculation of the geometric mean (GM). However, we recommend that the Bacteria Provisions not require this calculation on a weekly, rolling basis and that the provisions allow Regional Water Boards to implement a different averaging period if justified by a site-specific analysis. A requirement for weekly, equally spaced samples is unnecessarily restrictive for stormwater programs, as it limits flexibility to adapt sampling frequency in response to weather conditions, or an exceedance. In addition, the requirement for a rolling GM calculation may cause a single exceedance to result in repeated exceedances of the GM, long after the exceedance is no longer present. State Water Board staff noted within the Staff Report that "Using a rolling average to calculate the [statistical threshold value (STY)] could result in the reporting violations over a 6-week period where the actual violation no longer exists." The Partnership requests that the State Water Board allow flexibility in sampling timing by removing the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STY, removing the specification of a rolling calculation for the GM, and allowing Regional Water Boards to establish site-specific averaging periods and compliance determinations.	See response to comment 4.07.	No
	28.06	COMMENT 3 - ACKNOWLEDGE THE RISK BASIS FOR THE BACTERIA PROVISIONS. The Partnership requests that the State Water Board include a more detailed description of the risk level that is the basis for the Bacteria	See responses to comments 3.08 and 4.01.	No

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		Provisions. The only mention of risk level in the Bacteria Provisions occurs in the header of the table presenting the WQOs. The proposed objectives do not acknowledge that the USEPA 2012 Criteria are standards based on an allowable risk level, derived from epidemiological studies. This risk level is the basis for the objective, and the E. coli objectives are the tool to implement the risk-based objective. Since the risk level is the driving mechanism to protect human health, it should be clearly described in both the Bacteria Provisions and Staff Report. The USEPA has a long record of establishing recreational criteria based on risk levels. The USEPA published recommended recreational water quality criteria in 1986 that establish the ambient condition of a recreational water body necessary to protect the designated use of primary contact recreation. Criteria values were selected for E. coli and enterococci in order to carry forward the same level of public health protection that were believed to be associated with the USEPA's previous criteria recommendations based on fecal coliform. The USEPA carried forward this risk-based approach in its 2012 Criteria development. Elevated levels of indicator bacteria were linked to increased risk of gastrointestinal illness through epidemiological studies conducted by USEPA during the National Epidemiological and Environmental Assessment of Recreational Water (NEEAR) and the 2012 Criteria were established to carry forward the risk-based approach to setting recreational criteria based on indicator bacteria levels. The ultimate goal of recreational water quality improvement programs is to reduce risk of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. As such, incorporating a discussion of the risk-basis for the Bacteria Provisions will allow them to be adaptable to the evolving science in the event that a better indicator becomes available. It will also ensure a clear understanding that the risk-level established in the provisions is protective of human health.		
	28.07	COMMENT 4 - ALLOW INDICATORS IN ADDITION TO E. COLI AND ENTEROCOCCI THAT MAY BETTER CHARACTERIZE RISK. The focus on numeric objectives for culturable E. coli and enterococci, rather than on the appropriate risk level, does not allow for other pathogen indicators or analytical methods that may better characterize risk. The Bacteria Provisions recommend USEPA Methods 1603 and 1600 or other equivalent method to measure culturable E. coli and enterococci, respectively. This language may be interpreted as precluding the use of new methods to measure E. coli and enterococci that are not culture based, or if newly developed rapid indicators could be used. Rapid indicators to measure the presence of pathogens outside of a lab culture continue to be an active	See responses to comments 4.01, 4.02, and 4.03.	No

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		area of research. In addition, if an alternative indicator (e.g., coliphage) is developed and approved, the current Bacteria Provisions language could be problematic, assuming that the use of those methods is interpreted as a requirement. The Partnership recommends that the text in the Bacteria Provisions specifying preferred methods be rewritten to be adaptable to future scientific developments such as improved measurements of E. coli and enterococci, as well as alternative indicators that better characterize human health risk.		
	28.08	COMMENT 5 - SPECIFY HOW SITE-SPECIFIC EVALUATIONS COULD BE FACILITATED THROUGH THE BACTERIA PROVISIONS The proposed bacteria provisions include a consideration for Water Quality Standards Variances, which may be a mechanism for site specific evaluations for mixing zones, fate and transport, duration of impacts, among other factors, but the Bacteria Provisions do not specifically include those considerations. The Partnership requests that the State Water Board staff provide language within the Bacteria Provisions that acknowledge that these are factors which may be considered with a Water Quality Standards Variance. As discussed in Comment 1, this is an additional area where guidance from the State Water Board would be useful in promoting consistency among Regional Water Boards in implementing the Bacteria Provisions.	See responses to comments 1.02, 4.01, 4.02, and 3.09.	No
	28.09	COMMENT 6 - CONSIDER THE ACHIEVABILITY OF WATER QUALITY CONDITIONS WITHIN THE CALIFORNIA WATER CODE SECTION 13241 ANALYSIS. Under the California Water Code (Section 13241), the State Water Board and Regional Water Boards are required to consider a number of factors when adopting water quality objectives (WQOs). In establishing WQOs, the following factors (and others) shall all be considered: • The ability to reasonably achieve water quality conditions through coordinated control of all factors which affect water quality in the area; and • Economic considerations. The Staff Report needs to include appropriate information to satisfy the required Section 13241 analysis. The current language of the Bacteria Provisions included in the Staff Report does not indicate the water quality conditions that could reasonably be attained through coordinated control of all factors affecting water quality. The Staff Report simply states that "The proposed water quality objectives for bacteria and implementation provisions can be implemented through NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act, water quality certifications issued pursuant to section 401 of the Clean Water Act, WDRs, waivers of	See response to comment 7.03.	0

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		WDRs, and TMDLs." This is a statement describing the regulatory mechanisms to enforce water quality objectives not an analysis that fulfills the Section 13241 requirement. There are many sources of bacteria to receiving waters, including natural, background sources in addition to storm water. The controllability of these background sources must also be considered in order for the State Water Board to evaluate whether or not the proposed WQOs can "reasonably be obtained", per Section 13241. In addition, the economic analysis must consider whether control measures and associated costs are reasonable in terms of achieving the desired water quality conditions as reflected in the proposed WQOs.		
San Diego Co-permittees (County of San Diego) Representative: Jo Ann Weber	29.01	The Copermittees support water quality improvements in our watersheds through implementation of the MS4 Permit. We are fully supportive of the State Water Resources Control Board's (State's) effort to align the State's recreational water quality standards with the United States Environmental Protection Agency's (USEPA's) 2012 Recreational Water Quality Criteria, which are based on recent epidemiological studies linking indicator bacteria levels to human health impacts. We believe that the regulatory decisions based upon sound science are appropriate.	Comment noted.	No
	29.02	The Copermittees request that the State include a more detailed description of the risk level that is the basis for the Bacteria Provisions. The only mention of risk level in the Bacteria Provisions occurs in the header of the WQOs table as 32 per 1,000 water contact recreators. Since the risk level is the driving mechanism to protect human health, it should be clearly described in both the Bacteria Provisions and Staff Report. Emphasizing the risk based approach is important to future public understanding of the standard and the significance of the WQOs.	See responses to comments 3.08 and 4.01.	No
	29.03	The recent Surfer Health Study (SHS) conducted in the San Diego region was a large study that incorporated an epidemiological component and a Quantitative Microbial Risk Assessment (QMRA) component, which found a different relationship between indicator bacteria levels and human health risk than the epidemiological studies that supported the USEPA criteria - and pointed out that human sources of indicator bacteria posed the greatest health risk, and that elimination of human sources is most effective at reducing the risk of illness • The ultimate goal of recreational water quality improvement programs is to reduce risk of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. As such, incorporating a discussion of the risk-basis for the Provision will allow them to be adaptable to the evolving science in the event that a better indicator becomes available and ensure a clear understanding that the risk-level established in	See responses to comments 3.08 and 4.01.	No

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		the provisions is protective of human health. Recommendation Include a discussion within the Bacteria Provisions of the risk-level basis of the E. coli and Enterococci numeric criteria, and acknowledge that the fecal indicator based criteria were established by USEPA to support an accepted risk level.		
	29.04	Allow flexibility in the frequency of samples, and method of calculating the GM .and STV to determine compliance The Copermittees support the inclusion of a minimum of a six-week period for the calculation of the GM. However, we recommend that the Bacteria Provisions not require this calculation on a weekly, rolling basis and that the provisions allow Regional Water Boards to implement a different averaging period if justified by a site-specific analysis or within the context of a TMDL. A requirement for weekly, equally spaced samples is unnecessarily restrictive for stormwater programs, as it limits flexibility to adapt sampling frequency in response to weather conditions, or in response to an exceedance. In addition, the requirement for a rolling GM calculation may cause a single high value to result in repeated exceedances of the GM, long after the exceedance is no longer present. State staff noted in the Staff Report that "Using a rolling average to calculate the STV could result in the reporting violations over a 6-week period where the actual violation no longer exists." We believe that this position is supported by sound science. Recommendation: Allow flexibility in sampling timing by removing the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STV, remove the specification of a rolling calculation for the GM, and allow Regional Water Boards to establish site-specific averaging periods and compliance determinations.	See response to comment 4.07.	No
	29.05	Seasonal considerations should guide the applicability of the objectives The 2012 Recreational Criteria were derived based on epidemiological studies in climates that are different from California's (e.g., which do not have distinct wet and dry seasons). Within California, there are areas which have disparate patterns of pollutant concentrations between dry and wet conditions, with high pollutant runoff occurring during infrequent wet events which are confined to a distinct wet season. The analysis of the objectives should clearly evaluate the applicability of the science to these disparate conditions and identify appropriate implementation procedures for the objectives under the two conditions.	See response to comment 4.06.	No
	29.06	Under California Water Code (Section 13241), the State Water Board and Regional Water Boards are required to consider a number of factors when adopting water quality objectives, including in relevant part here: "Past, present and probable future beneficial uses of water; and water quality conditions that could reasonably be achieved through coordinated control of all factors which affect water quality in the area".	See responses to comments 4.06, and 7.03.	0

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		We believe that the Staff Report should include appropriate information separately for wet and dry weather events to ensure that the State has all the necessary information to consider the required 13241 factors. Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. The current language of the Bacteria Provisions does not indicate if the differences between wet and dry conditions were evaluated in the Section 13241 analysis. Without such information, the State will be unable to properly consider compliance with section 13241. In short, such considerations might result in different requirements for wet weather when achieving the proposed objectives may not be plausible, much less, reasonable to achieve. Further, implementation provisions for WOOs should clearly define implementation requirements for both wet and dry weather. The implementation procedures should be developed based on the 13241 analysis results, consideration of the underlying science used to develop the objectives, consideration of the short duration of storm events, and the associated potential impacts to beneficial uses. Establishing water quality objectives should assess the ecological impact of wet weather exceedances and establish associated implementation procedures that account for allowable exceedances and impacts that occur as a result of the exceedance during wet weather as distinct from dry weather.		
	29.07	In order to address this issue, the Copermittees recommend the Bacteria Provisions be amended to exclude wet weather events from GM calculations and only apply the acute STV endpoint to wet weather events. A similar approach is currently in place for AB411 data such that GM calculations only include dry weather events. The epidemiological studies that were the basis for the 2012 USEPA criteria were used to establish relationships with indicator bacteria predominantly collected during dry weather. Wet weather events are sporadic, short-term events that do not have lasting impacts on bacteria water quality in receiving waters. As a result, wet weather data is not appropriate in the long term conditions represented by the GM. Because the GM and STV both offer the same level of risk protection, using only the STV for wet weather conditions will not result in higher risk to human health and will be more representative of the conditions during wet weather events. In addition, the implementation section needs to be amended to provide explicit guidance to the Regional Water Boards on how to apply the WOOs during wet and dry weather conditions.	See response to comment 4.09.	No
	29.08	Allow high flow and seasonal suspensions of the objectives without a use attainability analysis	See response to comment 4.14.	No

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		The Copermittees fully support the State's inclusion of high flow and seasonal suspension of REC-1 beneficial use as implementation options in the Bacteria Provisions. However, we request that the State allow these to be completed without a use attainability analysis (UAA). The requirement to complete a UAA requires review by USEPA, and places an unnecessary burden upon the dischargers and Regional Water Boards, which will likely impede these options from being implemented. There is precedent within Regional Water Board Basin Plans for a temporary suspension of objectives. The Santa Ana Regional Water Board includes criteria within the Basin Plan for temporary suspension of recreational use designations and objectives, which can be implemented without a UAA. As part of the work that led to the adoption of the Santa Ana Basin Plan recreation standards amendments in 2012, the Stormwater Quality Standards Task Force considered the merits of and various alternatives for modifying the REC-1 definition to improve clarity and precision, based on careful consideration of the scientific basis of the 1986 USEPA Recreational Criteria and earlier criteria guidance. The Santa Ana Basin Plan provides definitions and eligibility criteria for temporary suspension of objectives based on site-specific flow triggers, conditions such as engineered or highly modified channels, and for the termination of the temporary suspension. The Copermittees suggest that the State either provide similar guidance, or allow Regional Water Boards to develop regional guidance for temporary suspensions without development of a UAA. Recommendation: Remove the requirement to conduct a UAA to use the implementation provisions provided in the amendments (high flow suspension, seasonal suspension, etc.) and allow Regional Water Boards to develop region-specific guidance.		
	29.09	Allow for mixing zones in the Ocean Plan Bacteria Provisions The Copermittees encourage the State to consider mixing zones for storm water and wastewater discharges within the Bacteria Provisions, and allow the bacteria objectives to be calculated taking into account dilution as applicable, and/or for receiving water monitoring points to be located where discharges are mixed with receiving waters. This approach would emulate and provide consistency with the position expressed within the new Industrial General Permit wherein it states "receiving water limitation requires that industrial storm water discharges and authorized NSWDs not cause or contribute to an exceedance of applicable water quality standards. Water quality standards apply to the quality of the receiving water, not the quality of the industrial storm water discharge. Therefore, compliance with the receiving water limitations generally cannot be determined solely by the effluent water quality characteristics." Creating permit consistency will ensure reliability in interpretation and application of the requirements for MS4s and members of the general public.	See responses to comments 1.02 and 16.09.	No

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		Within the Staff Report, State staff include mixing zones for point sources within the "Issues eliminated from further consideration after early outreach and public consultation," and acknowledge that with no statewide policy, existing Regional Water Board policies and procedures will apply. Regional Water Boards would likely continue their current practices for allowing mixing zones where appropriate. The Copermittees are concerned that the Ocean Plan definition of Receiving Water on page 60 and the lack of specific authorization and discussion of mixing zones for storm water in the Ocean Plan may preclude the ability of the Regional Water Boards to apply a mixing zone for storm water if desired. As noted in the Staff Report, the Ocean Plan already has a statewide policy regarding mixing zones for toxic pollutants which are implemented through NPDES Permits. It is reasonable to extend a similar policy to the Bacteria Provisions in order to establish a statewide standard for addressing storm water discharges. A statewide standard would remove burden from individual Regional Water Boards to establish appropriate practices, and would be protective of recreational use in waters (such as oceans) where storm water discharge and receiving water are mixed. This would also clarify that mixing zones are allowed for storm water dischargers. Recommendation: Include language in the Ocean Plan Provisions and Staff Report to allow for mixing zones for storm water dischargers.		
	29.10	Specify that the objectives only apply to waters where ingestion is reasonably possible The Copermittees request that the State specify that the Bacteria Provisions do not apply to waters designated as REC- 2 or other waters where ingestion is not reasonably possible, to be consistent with USEPA guidance on the applicability of the recreational objectives. The 2012 Criteria, and the prior 1986 Criteria, are based on epidemiologic studies of illness following full-body contact recreation. USEPA's rule promulgating E. coli objectives for recreational freshwaters in certain Great Lakes states provides that the pathogen indicator objectives apply "only to those waters designated by a State or Territory for swimming, bathing, surfing or similar water contact recreation activities, not to waters designated for uses that only involve incidental contact." USEPA defines this "secondary contact" recreation as "those activities where most participants would have very little direct contact with the water and where ingestion of water is unlikely. Secondary contact activities may include wading, canoeing, motor boating, fishing, etc." • Basin Plan definitions of REC- 2 are functionally equivalent to the USEPA description of "secondary contact" recreation and some activities included in the REC-1 definition fall in this category. To avoid misinterpretation of the USEPA 2012 Criteria, it is important to only apply the objectives where ingestion of water is reasonably possible. This modification will provide consistency between the	See response to comment 16.09.	No

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		various applicable regulations and ensure consistency in interpretation and application by all affected (i.e. MS4s and the general public). Recommendation: Specify that the Bacteria Provisions are not applicable to REC-2 and waters where ingestion is not reasonably possible.		
	29.11	The recommended analytical methods should not be limited to measurements of E. coli and Enterococci. The Bacteria Provisions recommend USEPA Methods 1600 and 1603 or other equivalent method to measure culturable E. coli and Enterococci, respectively. This language may be interpreted as precluding the use of new methods to measure E. coli and Enterococci that are not culture based. Rapid indicator methods to measure the presence of pathogens outside of a lab culture continue to be an active area of research. It appears that the current language in the Bacteria Provisions would preclude the use of new and emerging rapid indicator or other comparable non-culture-based methods. In addition, if an alternative indicator (e.g., coliphage) is developed and approved, the current Bacteria Provision language could be problematic assuming that the use of those methods is interpreted as a requirement. The Copermittees recommend that the text in the Bacteria Provisions regarding preferred methods be rewritten to be adaptable to future scientific developments such as improved measurements of E. coli and Enterococci as well as alternative indicators. Recommendation: Remove the word "culturable" from the sentences describing E. coli and Enterococci methods in the ISWEBE and Ocean Plan Provisions. Include language in the ISWEBE and Ocean Plan Provisions to allow use of a scientifically defensible or other (future) approved method(s) that measure alternative indicators.	See responses to comments 4.03	No
	29.12	Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to all waterbodies. The Copermittees support the use of the reference reach/antidegradation approach or natural sources exclusion approach (implementation tools) which will provide Regional Water Boards with flexibility to adapt the WQOs to their specific regions. However, the extent of the application of these approaches appears to be limited only to waterbodies with a TMDL as noted in the Staff Report: "The reference system /antidegradation approach and the natural sources exclusion approach are appropriate within the context of a TMDL. The TMDL process includes the robust analysis necessary to characterize bacteria sources and it provides an appropriate venue for determining the appropriateness of applying either approach. " The Copermittees disagree with this limitation and recommend that these implementation tools be expanded to waterbodies which do not have an existing TMDL or TMDL under development. The available reference reach studies developed in Southern California have been used in several regions (Los Angeles, Ventura and San Diego Counties) in relatively	See response to comment 4.08.	No

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		consistent ways. Therefore, it would be straightforward and appropriate to use the existing studies in a consistent manner in watersheds that do not have a bacteria TMDL. The limitation to only allow for the implementation tools to be used in the context of a TMDL may force Regional Water Boards and MS4 permittees to develop TMDLs in places that could be more quickly and effectively addressed without a TMDL. While the Copermittees agree that the TMDL represents a robust analysis process to determine the alternative implementation approaches, it is not the only scenario that allows for such an analysis. Regional Water Boards should be allowed to oversee and approve robust reference system/antidegradation and natural sources exclusion approaches as they deem appropriate. Expanding the implementation tools to all waterbodies will allow for more flexible and cost effective implementation options, faster and more complete protection of human health, and availability of all regulatory tools to address bacteria to all waterbodies. Recommendation: Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to apply to all waterbodies.		
	29.13	Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to both the STV and GM. As stated in the previous comment, The Copermittees support the use of these alternative implementation tools; however, the limitation to only apply it to the STV is unnecessary and not presented to be based on sound science. During the staff workshop, it was mentioned by Water Board staff that the STV was the only endpoint that was likely to see exceedances in reference reaches. The Copermittees respectfully disagree with this perspective and note that there are areas that experience high natural sources of indicator bacteria such that GM calculations are also elevated. If an area experiences high levels of natural source indicator bacteria, which in many cases have been shown to cause lower rates of illness rates than anthropogenic sources of indicator bacteria, then an exceedance of the GM and/or STV may still be protective of the USEPA derived risk-based illness rate and the water quality objectives may not be attainable due to these uncontrollable sources. Such determinations must be made only after analysis of the reference reach or natural source exclusion study data. Thus, Regional Water Boards should be given the discretion to determine if the reference reach/antidegradation approach and natural source exclusion can apply to both the GM and STV. The Copermittees encourage the State Water Board to provide guidance in the Staff Report about how to execute reference each/antidegradation and natural source exclusion approaches and not limit their applicability only to the STV. Recommendation: Update the ISWEBE and Ocean Plan Provision Implementation language to allow the	See response to comment 4.09.	No

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		reference reach/antidegradation and natural source exclusion approaches to be applied to both the GM and the STV. Provide guidance in the Staff Report about approaches to implement the reference reach/antidegradation and natural source exclusion approaches at the regional level.		
	29.14	The Economic Analysis should consider Storm water in addition to Wastewater The Copermittees request that the State consider the economic impact to storm water dischargers within the Economic Analysis. The Staff Report only considers the cost savings for municipal wastewater treatment plants and industrial plants for bacteria monitoring, as the required indicators would be reduced from three to one. However, this is not the case for storm water dischargers and beaches subject to AB411 monitoring requirements. Within the Staff Report, it is stated that monitoring costs will be reduced at popular public beaches, as only Enterococci would be required to be monitored. This statement conflicts with the inclusion of the AB411 Total coliform, Fecal coliform, and Enterococci objectives in the Ocean Plan Bacteria Provisions. Recommendation: Modify the Staff Report Economic Analysis to consider the impact to storm water dischargers.	See response to comment 12.14	No
	29.15	The salinity threshold should be written to clearly demonstrate that a water body will not be subject to changing E. coli and Enterococci WQOs. The Copermittees support the application of separate indicators for fresh and saline waters and particularly support the decision by the State Water Board to only apply the Enterococci indicator to saltwater, as it is known to result in erroneous exceedances when applied to freshwater due to natural sources. However, we are concerned that the distinction between saline and freshwater does not cover all waterbodies and may inadvertently expose estuaries and river mouths to varying WQO indicators due to seasonal and tidal changes to salinity. The ISWEBE Provision includes the following language in Table 1 to distinguish between the salinity of the waterbodies: Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is Jess than 1 0 ppth 95 percent or more of the time" Saltwater (Enterococcus): "All waters, where the salinity is equal to or greater than 10 ppth 95 percent or more of the time" However, no guidance is provided for waterbodies which may fall between the two cutoffs, for instance an estuary that is seasonally separated from the ocean such that it is saline (>10 ppth salt) only 70 percent of the time in a calendar year. The Copermittees recommend that the State Water Board correct the wording of the salinity threshold to be discrete and cover all waterbodies (including those that might fall between the two salinity cutoffs) or provide recommendations of how to monitor waterbodies which	See response to comment 4.16.	No

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		do not fall into either freshwater/salinity classification. The Copermittees recommend making the following change to the freshwater language: Freshwater (E. coli): "Al l waters, except Lake Tahoe, where the salinity is not equal to or greater than 10 ppth 95 percent or more of the time" The Copermittees request modifications to avoid the condition where a water body would need to be monitored with varying WQO indicators based on the salinity of the receiving waters. Such a requirement would result in unnecessarily complicated monitoring efforts and compliance determinations. Recommendation: Update the language in the ISWEBE regarding salinity such that the threshold represents discrete classifications for E. coli and Enterococci. If a text change is not completed, provide guidance on how to apply the WQOs to waterbodies that do not distinctly fall into either the freshwater or saline category or that may change seasonally from one to the other.		
San Francisco Water, Power, and Sewer Representative: Tommy T. Moala	30.01	The San Francisco Public Utilities Commission (SFPUC) appreciates the opportunity to comment on the draft Bacteria Provisions. Although we have comments, including requested changes, on the specific objectives selected in the Provisions and on the associated control programs, in general we support this initiative to update the bacteria objectives for water contact recreation.	Comment noted.	No
	30.02	1. Anti-wildlife measures – We have concerns with the position taken in the Provisions that wildlife is potentially a problem requiring remedial action by permittees. As stated in the Staff Report, natural sources include direct inputs from birds, terrestrial and aquatic animals, wrack line and aquatic plants, and other unidentified sources within the receiving waters. The Staff Report indicates these non-human sources are potentially a problem requiring corrective action and permittees may need to target them for elimination or diversion. For example: Birds are a common source of bacteria both at beaches and in inland urban areas. Some of the potential control strategies include public education to reduce feeding, habitat modification (exclusion barriers), deterrence measures (such as motion active sprinklers and sonic devices), dispersion measures (falcons have been used), chemical repellents, reproductive controls and occasional removal. [Draft Staff Report, section 6.2.2.4 Pet, Bird and Other Urban Wildlife] The Staff Report also identifies the possible need to relocate wildlife by trapping. Relocating animals to another habitat—potentially at carrying capacity—means these animals are unlikely to survive. We are concerned with the underlying assumption that dischargers have the responsibility in some cases to decrease or eliminate wild animals by modifying habitat and harassing or removing wildlife.	The commenter is correct that bacteria may be increased in certain waterways as a result of pet and wildlife waste. The reference system/antidegradation approach and natural sources exclusion approach acknowledge that beneficial uses may not being supported while allowing for flexibility in meeting standards by taking into account natural sources of bacteria and not requiring regulation of natural systems. As described in the response to comment 4.09, the Bacteria Provisions were updated to allow for these approaches to alter the exceedance frequency of the geometric mean and the STV or SSM element of the water quality objectives. Generally, in cases where the presence of animals and the associated waste has been altered due to anthropogenic influence, the source is no longer considered natural and it may be appropriate to consider control options. It may also be appropriate to consider revising a designated use (such as the REC-1 use) in accordance with 40 CFR 131.10(g) where	No

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		We request that instead these proposed bacteria standards take into account the fact that some waterways will have elevated bacteria due to natural sources and this is a natural phenomenon that does not require correction by permittees. The current provisions to address a natural source issue (the natural source exclusion and reference system/antidegradation alternatives) are inadequate. These "off-ramps" require a TMDL and result only in an adjustment of the statistical threshold value; the geometric mean, however, would remain the same. In some locations, natural sources will result in ongoing bacteria levels above the geometric mean. In addition, the two off-ramps currently provided have other restrictions that seriously limit their use. The reference system/antidegradation approach requires a reference beach minimally impacted by human activities. San Francisco Bay apparently does not have any beaches meeting this requirement. The natural source exclusion approach may similarly be inapplicable because during wet weather, municipal sources outside of San Francisco release substantial volumes of untreated stormwater to the bay and these may contain "non-natural" bacteria which impact San Francisco beaches in addition to the natural sources. A related concern is that our permits and other NPDES permits for municipalities typically include mandates for low impact development (LID) and green infrastructure. San Francisco is actively pursuing these technologies. They include planting trees and other vegetation. This vegetation, especially an increased canopy along streets, supports increased bird populations and inevitably results in greater bacteria loadings in runoff. In summary, we have these two wildlife-related objections to the Provisions in their current form: (1) The Provision "off-ramps" intended to address natural exceedances are too limited and consequently inapplicable in many locations. As a result, permittees could be required to remove the sources, even if these sources are wildlife in their natural habitat and removal would be harmful to them or other wildlife. As an example, the floating docks at Pier 39 in San Francisco are used by sea lions. If local bacteria concentrations violate standards, neither of the two off ramps in the Provisions would be available. A reference beach exclusion is not allowed for San Francisco Bay, and the natural source exclusion could change the Statistical Threshold Value (STV) but not the Geometric Mean (GM). Would San Francisco be required to remove the floating docks which	controls more stringent than those required by section 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact. Regarding reference systems, please see responses to comments 30.9 and 30.12.	

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		currently provides habitat for this wildlife or otherwise forcibly remove the sea lions from this area? (2) The requirement that permittees address natural sources is a potential constraint on LID and green infrastructure which are technologies that typically encourage and support wildlife. We recommend that the approach taken in the Provisions consider wildlife as a benefit, not a problem to be eliminated or relocated, and expand the offramps to accommodate this approach as discussed further in the following comments.		
	30.03	Need for additional or expanded "off ramps" – As discussed in the previous comment, the current paths for developing an alternative to the proposed GM and STV standards are inadequate. An additional or expanded method will potentially be needed for several locations around the San Francisco bay that exhibit elevated bacteria concentrations not connected to the CSDs or treatment plant effluent. San Francisco is investigating other potential sources such as sewer leaks, but anthropogenic sources are unlikely in some locations and the exceedances almost certainly are the result of natural sources. The reference reach/ antidegradation approach will apparently not be allowed in San Francisco Bay because no reference beach is available; all bay waters are impacted. As defined in the Appendix: A reference system is an area and associated monitoring point that is not impacted by human activities that potentially affect bacteria densities in the receiving water body. The natural source exclusion approach may similarly be inapplicable because untreated stormwater discharges to the bay may make it difficult to demonstrate that only natural sources cause the exceedances. Consequently, the reference beach/antidegradation and natural source exclusion approaches need to be expanded to address these situations. A possible change could include: Establishing a procedure for implementing a modified GM or STV without needing to implement a TMDL. Without an expanded off-ramp, dischargers will need to remove or otherwise address natural sources which may be impossible or have adverse environmental impacts, as discussed in the first comment.	See responses to comment 4.08, 30.09, and 30.12. The implementation options described within the Bacteria Provisions are not exhaustive but rather outline options that have been successfully implemented in California for the control of bacteria for the protection of the REC-1 beneficial use. In order to implement a natural sources exclusion approach within the context of a TMDL, all anthropogenic sources of bacteria must be identified, quantified, and controlled. The comment is correct that a natural sources exclusion approach would not be a viable implementation unless untreated storm water discharges were quantified and controlled. Alternatively, the San Francisco Water Board can develop site or region specific water quality objectives that take into account the specific environment and sources of bacteria. In addition, a WQS variance could be utilized if applicable as a short term solution until treatment mechanisms can be implemented.	No
	30.04	Responsibility for exceedance locations not caused by permitted dischargers – The Provisions need to clarify when exceedances from natural causes must be addressed by the local permittee. In other words, how and on what basis is the responsibility for identified exceedances assigned to permittees. As discussed in the previous comments, locations may have elevated bacteria due to natural sources such as marine mammals or birds. In some cases, these locations are far enough removed from wastewater or stormwater systems that these sources are very unlikely to be the cause of the elevated bacteria. As currently structured, the responsibility for	See response to comment 30.02. Chapter 6 of the Staff Report provides an analysis of the reasonable foreseeable methods of compliance. The actual compliance strategies will be selected by local agencies, Regional Water Boards, and other permittees.	No

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		investigation and addressing these sites appears to be assigned to the nearest stormwater or wastewater utility. In the natural world, some locations have high bacteria. As discussed in the previous comment, these elevated concentrations should not be considered as necessarily a sign of impairment requiring human intervention. And, the nearest permittee should not have to commit the funds and staff time when it is unlikely the permittee is responsible for the exceedances. The Provisions need a clear methodology for determining when to assign responsibility to a permittee.		
	30.05	Separate assessment of dry and wet weather – During wet weather beach use decreases significantly and this factor should be considered in the identification of objectives and in their application. This is particularly critical because wet weather compliance is problematic based on both local and statewide sampling.	See response to comment 4.06.	No
	30.06	Proposed action: Addition to the standards of the Limited Water Contact Recreation (LREC-1) beneficial use. Specific comment #1: This beneficial use is not currently available in Region 2 and we support makingLREC-1 available statewide as is proposed. We also request that the LREC-1 designation or REC-2 apply to waters used for fishing because ingestion of water is not likely while fishing. As stated by EPA in the 2012 recommended criteria: Primary contact recreation typically includes activities where immersion and ingestion are likely and there is a high degree of bodily contact with the water, such as swimming, bathing, surfing, water skiing, tubing, skin diving, water play by children, or similar water-contact activities. [emphasis added] Fishing does not involve a high degree of bodily contact. The EPA Recreational Water Quality Criteria Document also does not include fishing as an activity covered by the standards. However, fishing is currently categorized as part of REC-1 in the Basin Plans. We also note that the applicability of the proposed standards for the ISWEBE is stated as: Chapter III.E.2 establishes water quality objectives for reasonable protection of people that recreate within all surface waters, enclosed bays, and estuaries of the state that have the water contact recreation beneficial use (REC-1). [emphasis added] Fishing does not appear to have the requisite amount of bodily contact necessary to be a REC-1 activity. We request that the Provisions specify that fishing be included as either LREC-1 or REC-2 activity. In Region 2, beachcombing, camping, boating, tide pool and marine life study are currently classified as REC- 2 activities and would likely have the same limited contact as fishing. Suggested edits: Limited Water Contact Recreation (LREC-1): Uses of water that support	Modification of the REC-1 beneficial use definition is not within the scope of the project.	No

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		limited recreational activities involving body contact with water, where the activities are predominantly limited by physical conditions such as very shallow water depth, fishing (unless classified as REC-2), or restricted access and, as a result, body contact with water and ingestion of water is infrequent or insignificant.		
	30.07	Proposed action: Adoption of new criteria (objectives) for enterococci. The proposed objectives are based on the second of the two EPA recommendations in the 2012 criteria. Specific comment #2: The current GM objective in the San Francisco Basin Plan is 35 cfu/100 mL, the same as EPA recommendation number 1 in the 2012 criteria. The proposed Provisions, however, selected a GM value of 30 cfu/100 mL which is the second alternative identified by EPA. EPA has indicated that the REC-1 designated use would be protected if either set of criteria recommendations are adopted into state WQS and approved by EPA. Decreasing the objective from 35 to 30 CFU/100mL could have a significant impact in some locations. For example, samples taken at Aquatic Park from 2008 through 2011 show a significant increase in exceedance rates (55%) if the objective is decreased from 35 to 30 CFU/100mL - see table below. Neither CSDs or other wastewater is discharged into Aquatic Park. Aquatic Park is partially enclosed and the exceedances appear to be typical of waterbodies with limited circulation and which are impacted by natural sources. In an assessment of statewide water quality at beaches, Heal the Bay found a strong correlation between partially enclosed water bodies and decreased water quality as measured by indicator bacteria, especially in wet weather. The correlation was stronger for the enclosed water bodies than for beaches impacted by storm drains (see Beach Report Card, page 22). The bacteria sources appear to be birds and possibly sea mammals. We request the current value of 35 cfu/100 mL (i.e., EPA's recommendation 1) be retained as the appropriate enterococcus standard for the following reasons. 1. 35 cfu/100 mL is a protective standard –As noted earlier, the EPA has indicated that the REC-1 designated use would be protected at this level. 2. Bacteria sources – Natural sources will frequently be prevalent at levels similar to the GM objective, especially in water bodies that are partially enclosed and have limited circulation 3. Laboratory Methodology – The use of the Enterolert methodology for assessing bacterial concentrations provides a reportable value of 10 cfu/100 mL representing a non-detect, in contrast to the reportable value of 2 cfu/100 mL using multiple filtration methodology. Enerolert while providing for a quicker result, substantially increases the geomean value; thus impacting percent exceedance. It is a disadvantage to	See responses to comments 2.02, 4.01, 4.02, and 4.09.	No

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		use this faster detection method if the geomean is reduced, as proposed. 4. Alternative standards - The proposed Provisions provide only two methods to address natural sources: 1) Reference System/Antidegradation, and 2) Natural Source Exclusion. These methods, however, are only allowed within context of a TMDL and both require an extensive effort and may not provide the appropriate relief for natural causes, as discussed in previous comments. We have also been informed that the Reference System/ Antidegradation approach is not appropriate for San Francisco Bay due to the lack of un-impacted beaches to use as a reference beach. We request that the Provisions use EPA recommendation 1 or recommendation 2 on a site-specific basis. Higher use beaches, such as those meeting the AB411 criteria, could apply the 30 GM and beaches with limited use due to location or colder water could apply the 35 GM.		
	30.08	Proposed action: The current proposed text applies the new water quality objectives with the only exception being TMDLs established before the effective date. Specific comment #4: The applicability should be expanded to include: · Variances – The current proposed text allows very few exceptions to the strict application of the GM and STV. This could prohibit variances which is obviously not the intent of the Water Boards as indicated by the inclusion of the Variance Policy. · Modification of the geometric mean – It will be necessary to modify the GM in situations where natural sources result in a continuous or near-continuous exceedance of the proposed GM. · Modification of the GM and STV without a TMDL – Due to natural sources, it is likely that many waterways will need adjustment to the STV and GM. Restricting these adjustments only in the context of a TMDL places unnecessary administrative constraints on implementation of these standards.	See responses to comments 3.09, 4.08, and 4.09. The reference system/antidegradation approach and natural sources exclusion approach are implementation tools that can be utilized within the context of a TMDL that is established before or after the effective date of the Bacteria Provisions.	No
	30.09	Proposed action – Implement the Reference System/ Antidegradation Approach and Natural Sources Exclusion Approach Specific comment #5 – As discussed in more depth in earlier comments, these two options need to be expanded. As currently described, they will not be viable in many locations where natural sources are the cause of the exceedance. Specifically: * The approach should be allowed to be implemented without a TMDL * The GM should be adjustable, when needed, in addition to the STV * Allow reference beaches that are not in the same waterway (e.g., San Francisco reference beaches do not need to be elsewhere in the Bay) * Provide a method for taking into account not only natural sources but also other anthropogenic sources not subject to the control of the wastewater permittee (e.g., agricultural discharges, non-point source	See responses to comments 4.08, 4.09, 3.10, and 30.03. Reference systems are not required to be located in the same waterway but should reflect similar hydrologic conditions in an environment minimally impacted by anthropogenic activities in order to characterize the exceedance frequency of bacteria water quality objectives. For example, the Santa Monica Bay Bacteria TMDLs, within the urbanized area of Los Angeles, utilize Arroyo Sequit Canyon as a reference system although it discharges to Leo Carrillo beach well outside of the bay.	No

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		discharges, other permittees in the watershed or waterway) * Provide sufficient flexibility to address local conditions	The other anthropogenic sources described by the comment including agricultural dischargers, non-point sources, etc. would be identified and quantified within the context of a TMDL and given applicable load allocations consistent with applicable state and federal law. This is further discussed in Chapter 6.3 of the Staff Report.	
	30.10	Proposed action – Allow suspension of the standards due to high flows resulting in unsafe conditions. This option has been applied in Los Angeles for flows in constructed channels generated by daily rainfall of more than ½ inch. Specific comment #6 – We request this suspension or the seasonal suspension below be expanded to encompass situations where controls are not possible due to very high flows where treatment including disinfection is infeasible. This temporary suspension could include mandatory beach advisories.	See responses to comments 4.14, 6.05, and 6.06.	No
	30.11	Proposed action – Allow suspension of the standards due to low water flows, low water temperatures, or conditions that freeze water. Specific comment #7 – We request this suspension be expanded to include situations where beach use is very limited due to weather conditions and where controls are not feasible (e.g., high flows where treatment including disinfection cannot be implemented. This suspension could include mandatory beach advisories.	See responses to comments 4.14, 6.05, and 6.06.	No
	30.12	Specific comment #10 – As noted previously, in practice, the reference system approach has been defined such that no reference beaches are available to compare with other locations in San Francisco Bay. We propose that the definition be modified as follows: REFERENCE SYSTEM: A reference system is an area and associated monitoring point that is not impacted by human activities that potentially significantly affect bacteria densities in the receiving water body. The reference system beach may be located in another water body, for example, San Francisco Bay beaches could be compared to beaches located elsewhere along the coast that are similarly partially enclosed.	See response to comment 30.09. Additionally, the definition of the term reference system has been revised in the Bacteria Provisions (Appendix A: Glossary) as follows: "A watershed or water body segment determined by the WATER BOARD to be minimally disturbed by anthropogenic stresses but otherwise is representative of conditions of the assessed site, watershed, or water body segment."	Yes
Centennial Livestock Representative: Theresa A. Dunham	31.01	The Lahontan region's fecal coliform objective of 20 colonies per 100 ml was adopted to protect Lake Tahoe. However, when the Water Quality Control Plans for the lake Tahoe Basin and the rest of the region were combined, this objective was inappropriately applies to all waters within the Lahontan region. In the Grazing Conditional Waiver, grazing operations are required to reduce fecal coliform concentrations in an effort to meet an interim goal of 200 colony-forming units per 100 milliliters (cfu/100ml) by 2022, and are	Please see the response to comment 22.09. The fecal coliform objective found in the Lahontan Regional Basin Plan was originally adopted by the Lahontan Regional Water Board in 1974 and subsequently approved by the State Water Board and U.S. EPA in 1975. In 1975 the fecal coliform objective specifically applied to Eagle Lake, Susan River, Lake Tahoe, Truckee River, East Fork Carson River, West Fork Carson River, East Walker	No

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		being asked to comply by 2028 with the "State-wide or Basin Plan indicator bacteria water quality objectives in effect at that time." (Grazing Conditional Waiver, p. 9.) If the Lahontan region's fecal coliform objective is not replaced, Centennial Livestock and other grazing operations in the Bridgeport Valley will be subject to this extremely stringent standard of 20 colonies per 100 ml, which is well below the level necessary to protect public health. It also puts grazing operations in the Lahontan region at a severe disadvantage as compared to grazing operations in other parts of California. In conjunction and cooperation with the University of California Davis Rangelands program, Centennial Livestock and other grazing operations have been monitoring for fecal coliform and E.coli in the Bridgeport Valley for a number of years. The monitoring locations have been selected to identify contributions from the various sources of bacteria within the Bridgeport Valley: grazing, recreational (e.g., campers), and residential. That data show that it is near impossible for waters downstream of all of these uses to meet the Lahontan region standard of 20 colonies. More importantly, and as noted above, it is not necessary to meet this standard to protect public health. With respect to Centennial Livestock's operation, the grazing lands are private and the public has limited to no access to the water bodies within Centennial's property boundaries. Further, there are very limited opportunities for REC l beneficial uses (i.e., ingestion), and most recreational uses are more aligned with REC2 (i.e., fishing), or are limited water contact recreational uses. Thus, again, application of the Lahontan region's fecal coliform objective is inappropriate, unreasonable, and unnecessary to protect beneficial uses in the Bridgeport Valley.	River, West Walker River, Lake Topaz, and Bryant Creek. The fecal coliform objective was subsequently expanded to apply region wide during the 1995 basin plan update. Additionally, 40 Code of Federal Regulations section 131.10(b) states: "In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters." So while the grazing land are private and the public has limited to no access to the water bodies within Centennials property boundaries, the downstream uses, along with the present uses of the waters within the property must be protected.	
	31.02	State's Draft Bacteria Provisions Should Supersede Lahontan's Standard The State's Draft Bacteria Provisions propose to exclude waters within the Lahontan region from being subject to the newly proposed, statewide standards. Rather, the Draft Bacteria Provisions would retain the Lahontan region's fecal coliform objective. Ironically, the Draft Bacteria Provisions propose a new e. coli standard for Lake Tahoe (17 cfu/100 ml and 55 cfu/100 ml), the body of water for which the Lahontan region's fecal coliform objective was originally adopted to protect. Considering the history of the Lahontan region's fecal coliform objective, and the fact that the objective is more protective than necessary, it is inappropriate to maintain application of this objective and to exclude Lahontan region waterbodies from a newly proposed statewide standard.	See responses to comments 3.06 and 22.07.	No

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	31.03	Moreover, the Lahontan region's Executive Officer has anticipated the State Water Board's adoption of a new standard and has made accommodations for a new applicable standard within the Grazing Conditional Waiver. Specifically, the Grazing Conditional Waiver includes findings that acknowledge a potential change in the region's existing fecal coliform objective. For example, the Grazing Conditional Waiver states: "[t]he Water Board shall amend the Waiver to accommodate the Statewide E.coli standard once it is adopted and amended into the Lahontan Basin Plan or supersedes the current fecal coliform water quality objective." (Grazing Conditional Waiver, p. 5.) Moreover, because of this anticipated change, the Grazing Conditional Waiver requires monitoring for both fecal coliform and E. coli.2.05 Conversely, nothing in the Draft Bacteria Provisions supports maintaining the fecal coliform objectives that apply throughout the Lahontan region. Rather, the Draft Staff Report identifies use of E. coli as the appropriate indicator organism for freshwater bacteria objectives because it is the most effective method for protecting recreational beneficial uses. (See Draft Bacteria Provisions, p. 64.) The Draft Staff Report further notes that total and fecal coliform are outdated indicators, and that fiscal resources should not be wasted in sampling for multiple indicators. (Id.) The Draft Bacteria Provisions attempt to rationalize maintaining the Lahontan region's fecal coliform water quality objective by implying that it is not related to protecting the recreational beneficial uses. However, the Grazing Conditional Waiver includes evidence to the contrary. Specifically, the Grazing Conditional Waiver states that the Lahontan Water Board set the fecal coliform objective of 20 colonies per 100 ml because of the importance of protecting surface waters for recreational uses. (Grazing Conditional Waiver, p. 5.) Accordingly, the intent and purpose of the fecal coliform objective is related to recreational uses, and as such, it should be replaced with the state's proposed E. coli objective. In other words, footnote 2 of the State Water Board's proposed objective for inland surface waters should be deleted.	See responses to comments for 22.08 and 22.09. Additionally, while the Lahontan Water Board may have stated in the cited Grazing Conditional Waiver that the fecal coliform objective was set at 20 cfu/100mL because of the importance of protecting surface water for recreation, the fecal coliform objective contained in the Lahontan Basin Plan is not expressly established for the protection of any single beneficial use, but for all surface waters and their uses. Footnote #1 (previously footnote #2) of the ISWEBE Bacteria Provisions accurately states: "As of the effective date of Part 3 of the ISWEBE, the BASIN PLAN (p. 3-4) for the Lahontan Regional Water Board contains fecal coliform bacteria water quality objectives that are generally applicable to all surface waters within the region and not expressly established for the reasonable protection of the REC-1 beneficial use. Part 3 of the ISWEBE establishes numeric bacteria water quality objectives for the REC-1 beneficial use and, therefore, would apply to applicable waters within the Lahontan region that have the REC-1 beneficial use and do not supersede the fecal coliform bacteria objectives."	No
	31.04	State Water Board Should Adopt Use Illness Rate of 36 illnesses per 1,000 Recreators The Draft Staff Report includes Option 2, which would be adoption of an E. coli standard based on a rate of36 illnesses per 1,000 recreators. (Draft Staff Report, p. 70.) This rate is considered to be protective of public health, and equates to an E. coli standard of 126 cfu/100 mL as a geometric mean, and 410 cfu/l 00 mL as a Statistical Threshold Value. However, rather than recommending this protective standard, the Draft Staff Report recommends that the State Water Board adopt a more stringent standard that equates to an E. coli standard of 100 and 320 cfu/mL, respectively. The rationale for using this more stringent standard is merely that it would provide "better protection of public	See response to comment 2.02.	No

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		health." No other reasoning or justification is provided. (Draft Staff Report, p. 71.) Further, the Draft Staff Report comments that the lower E. coli standard of 100 and 320 cfu/100mL would increase the frequency of storm water permit violations. This statement is incomplete, in that this lower standard would also make it more difficult for grazing operations in the Bridgeport Valley to comply with the Grazing Conditional Waiver in the event that the State Water Board's objective supersedes the Lahontan region's fecal coliform objective, which we support. (See comments above in Section II.) Considering that the E. coli standards of 126 and 410 cfu/100 mL are protective of public health, we recommend that the State Water Board adopt Option 2 for freshwaters, rather than Option 3.		
	31.05	Comments on Implementation Provisions We also comment that the Natural Sources of Bacteria implementation provisions should not be limited to circumstances and application only when there is a total maximum daily load (TMDL) being developed. Grazing operations such as Centennial Livestock are required to comply with bacteria objectives regardless of the existence of a TMDL, and there should be the ability to identify and exclude natural sources of bacteria regardless of the existence of a TMDL. Notably, TMDLs are often developed based upon the availability of resources. Thus, these implementation approaches may have limited availability if limited only in circumstances of TMDLs. Moreover, degradation of existing water quality should be allowed, as long as a regional board or the State Water Board can make the necessary findings as required by Resolution 68-16. It is inappropriate to eliminate agency discretion with regard to allowing degradation within the context of the Draft Bacteria Provisions.	See response to comment 4.08. The Regional Water Boards retain discretion to later develop region-wide objectives, site-specific objectives, and any kind of implementation, including a natural sources exclusion outside the development of a TMDL. Consistent with the federal and state antidegradation policies, a lowering of water quality may be allowed upon certain conditions so long as water quality standards are maintained. The implementation provisions contained in the Bacteria Provisions pertain only to the proposed water quality objectives and not any other objectives for bacteria that are subsequently established by a Regional Water Board.	No
U.S. EPA Representative: Terence Fleming	32.01	The EPA appreciates the State Water Board's actions to update the bacteria standards for the protection of the recreation use in a manner that is consistent with the 2012 EPA criteria recommendations. Thanks you for the opportunity to review and comment on the proposed bacteria revisions referenced above.	Comment noted.	No
	32.02	Beneficial use: The Inland Surface Water, Enclosed Bays and Estuaries Plan (ISWEBEP) establishes a Limited Water Contract Recreation (LREC-1). No associated criteria to protect LREC-1 is provided and should be included.	See responses to comments 3.15 and 3.18. Additionally, Regional Water Boards have the discretion to select water bodies for LREC-1 designation, conduct a UAA for consideration, and develop water quality objectives for protection of the LREC-1 beneficial use on a site by site or region-wide basis. Providing specific criteria to protect the LREC-1 beneficial use is not within the scope of this project.	No

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	32.03	Water Quality Objectives: The Ocean Plan established two Water Quality Objectives under the heading of Bacterial Characteristics. The first are Water Contact Objectives to protect REC-1 which are based on the EPA 2012 criteria. The second are California Department of Public Health (CDPH0 standards which are based on the AB411 thresholds. It is unclear in the State Board wishes EPA to consider both objectives as water quality standards subject to EPA approval. In 2006 EPA approved the incorporation of the CDPH standards in the 2005 Ocean Plan as water quality standards. The proposed Ocean Plan contains language indicating that the Water Contact Objective is to be used for 303(d) listing and the CDPH standard is to be use for public beach notification programs. This is further complicate by language in Section II.1 of the proposal which indicates that "any of the Bacteria Water Quality Objectives shall be implanted through National Pollutant Discharge Elimination System (NPDES) permit...". We recommend that the State Board remove the CDPH standards from the Ocean Plan to make clear that they are not water quality standards subject to EPA approval.	See response to comments 4.17 and 33.18. Chapter II.B.1.b of the Bacteria Provisions for the Ocean Plan have been clarified to note that the requirements under Title 17 of the California Code of Regulations section 7958 are not water quality objectives, but continue in effect for use as CDPH public beach notification levels. Furthermore, Chapter III.D.1.c. of the Bacteria Provisions for the Ocean Plan have been clarified to state: "The bacteria water quality objectives (Chapter II.B.1.a.1) shall be implemented where applicable, through National Pollutant Discharge Elimination System (NPDES) permits…"	No
	32.04	Program of Implementation: The ISWEBEP states that determination of attainment will be based on the geomean but implies that the geomean is only valid if there are more than 5 samples and recommends that the statistical threshold values (STV) should be used for attainment when there are less than 5 samples. This is not consistent with the EPA 2012 Recreational Criteria which recommend that geomean and STV should be calculate regardless of sample size. While we agree that a greater number of samples improves the reliability of the estimate, the use of only the STV for assessment creates a disincentive to sample more frequently to properly calculate a geomean.	See response to comment 3.03 and 4.07.	No
	32.05	The bacteria water quality objectives shall be implemented through permits except when allocations are already established through a TMDL. We find the implication that the new water quality objectives do not apply to entities covered by existing TMDLs to be problematic. The ISWEBEP also suggests that Regional Boards may convene a public meeting to evaluate the effectiveness of the TMDL to meet the new water objectives. However, the revisions do not address actions required if the TMDL evaluation finds that water quality objectives will not be attained. In such circumstances the TMDL would need to be revised and approved by the State and EPA.	See response to comment 14.09. If a Regional Water Board found during the TMDL evaluation process that the TMDL waste load allocations, load allocations, and implementation program would not result in attainment of the new bacteria water quality objectives, then the Regional Water Board should reopen the TMDL and revise it as necessary. This revision would require approval by the Regional Water Board, State Water Board, and U.S. EPA.	No
	32.06	The State Board is adopting provisions to address natural sources of bacteria by implementing the reference system/antidegradation approach developed for the Santa Monica Bay wet weather TMDL. These provisions apply only within the context of a TMDL and apply only to nonpoint sources (except for onsite wastewater treatment systems) and	See responses to comments 4.01 and 4.02.	No

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		stormwater (except for industrial stormwater). Under these conditions the geomean shall be strictly applied along with a site-specific STV. The reference system and antidegradation approaches were conceived almost 15 years ago. Today we have improved tools for more rapid sanitary surveys and quantitative microbial risk assessments (QMRA). The State Board should consider how these tools will be implemented in both the reference system and antidegradation approaches.		
	32.07	The ISWEBEP contains several situations where REC-1 uses may not apply and can be downgraded with use attainability analyses (UAAs). A Regional Board may suspend REC-1 use during high flow conditions when water flow and velocity preclude the swimming use (i.e., high flow suspension).	Comment noted.	No
	32.08	A Regional Board may suspend REC-1 use with a UAA for situations where the use is precluded either by freezing in the winter or drying up in the summer (i.e., seasonal suspension). The ISWEBEP would require that water quality in these cases would be protected by the REC-2 standards. However, as REC-2 standards vary widely (different indicators, different thresholds) across the state, it is unclear if this would provide equal levels of protection across the state.	See responses to comments 4.14, 4.15, and 6.06. The Bacteria Provisions for Part 3 of the ISWEBE do not indicate that water quality would be protected by REC-2 standards but rather identifies that all other uses and associated water quality objectives would remain in place during any temporary seasonal suspension. The UAA that would be necessary to initiate a temporary seasonal suspension of the REC-1 use would need to take into account downstream uses of water that would be impacted by the suspension and potentially require the development of site specific bacteria water quality objectives to apply during the conditions when the suspension was in place.	No
	32.09	Finally, the ISWEBE allows for Limited Water Contact Recreation Use (LREC-1) after a UAA indicating that REC-1 is unattainable. However, it is unclear what the water quality indicator and threshold would be to protect LREC-1.	See responses to comments 3.15, 3.18, and 23.03.	No
	32.10	Water Quality Standards Variances: The proposed bacteria revisions identify the mechanism for adopting a water quality variance in accordance with 40 C.F.R. § 131.14. The State Board should take this opportunity to review and update existing exceptions to the Ocean Plan or the ISWEBEP for consistency with federal regulations. See enclosure related to State Board Order No. WQ 79-16. Enclosure: The 1979 Exception Granted by State Board Order No. WQ 79Ml6 Since March 23, 1979, State Board Order No. WQ 79-16 has granted the City and County of San Francisco's eight wet weather 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. In continuous effect for nearly four decades, this exception has been implemented through successive	Reviewing and potentially updating exceptions identified in the Ocean Plan is beyond the scope of the Bacteria Provisions project. The Bacteria Provisions update the bacteria standards contained within the Ocean Plan and do not purport to reopen or revoke the exceptions identified therein. The Variance Policy refers to the express statutory framework EPA established at 40 C.F.R. § 131.14 that states may utilize to adopt water quality standards variances. The Bacteria Provisions do not purport to establish any water quality standards variance. The Ocean Plan identifies the conditions with which an exception to the Ocean Plan requirements may be	No

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		NPDES permits for the City's Oceanside Plant. During wet weather days, the Plant's current Oceanside permit does not require: (1) compliance with the Ocean Plan's recreational criteria for bacteria at the near shore diversion structures; (2) monitoring for bacteria in effluent from any discharge location; or (3) compliance with receiving water limitations. The City's receiving water monitoring of bacteria has shown exceedances of the bacteria standards during wet weather. The absence of effluent monitoring has complicated the task of delineating linkage between bacterial loadings in wet weather discharges and in receiving water and slowed the exploration of measures that other cities with combined sewer systems have taken to make water safe for contact use. In light of the considerable age of the 1979 exception, public health implications, and 40 C.F.R. 131.14 requirements, the State Board should: • describe how the Proposed Bacteria Provisions and Variance Policy interacts with the 1979 exception; • if the 1979 exception is intended to be a variance, update it consistent with 40 C.F.R. 131.14, which requires, among other things, that the state reevaluate its variance provisions every five years and submit the results to EPA for approval under CWA section 303; and, · • if the 1979 exception is not intended to be a variance, describe how it complies with CW A section 303 and continues to be protective of beneficial uses.	granted, in compliance with CEQA, subsequent to public hearing, and with approval by U.S. EPA. (Ocean Plan, III.J.1.) The Ocean Plan contains express exceptions to the plan, at Table IIV-1, page 91. State Water Board Order WQ 79-16 is identified as one of the express exceptions to the Ocean Plan. The exception was necessary because combined sewer overflow systems are inherently inconsistent with certain Ocean Plan standards. In accordance with the Ocean Plan's procedures for granting exceptions, the State Water Board found that there were unusual circumstances not anticipated at the time of the plan's adoption (i.e., the Ocean Plan had failed to address combined sewer overflow discharges), that beneficial uses would be protected, and that the public interest would be served. The exception was subject to several conditions. The Ocean Plan (at Section III.A.4) also states "Not withstanding any other provisions in this plan, discharges from the City of San Francisco's combined sewer system are subject to the US EPA's Combined Sewer Overflow Policy." In large part, this acknowledgement is a response to State Water Board Order No. WQ 79-16 (March 23, 1979), which granted an exception from the Ocean Plan for wet weather discharges from the Discharger's diversion structures in the western-most portion of the Discharger's combined sewer system. The Ocean Plan provides that exceptions issued by the State Water Board and in effect at the time of triennial review will be reviewed at that time. If there is sufficient cause to reopen or revoke any exception, the board may direct staff to prepare a report and schedule a public hearing. (Ocean Plan, III.J.2.) Additionally, staff within the State Water Board's Division of Water Quality have begun a review of the 1979 Order to determine if and how to appropriately update the exception. If the exception is more appropriately expressed as a water quality standards variance, the	

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			requirements of 40 Code of Federal Regulations section 131.14 will be considered.	
Ventura Countywide Stormwater Quality Management Program Representative: Arme Anselm	33.01	Our experience has shown that bacteria is a very expensive pollutant to address and is often the pollutant that drives the most significant costs for stormwater programs when developing watershed management plans for multiple pollutants. However, the costs for addressing bacteria are associated with capturing and treating fecal indicator bacteria in stormwater runoff. The studies used to develop the USEPA 2012 Criteria that form the basis of the Bacteria Provisions were conducted in waterbodies with different types of sources (primarily wastewater treatment plants). Recent studies conducted in San Diego have indicated that waterbodies primarily influenced by stormwater runoff during wet weather may pose a lower risk to recreators at higher bacteria concentrations. Therefore, it is important that new WOOs are carefully assessed to ensure that they meet the intent of the Provisions to protect the beneficial use. WOOs that are under-protective may expose the public to higher risk of gastrointestinal illnesses, however implementing overprotective WOOs and restricting implementation techniques can also impact the beneficial use through unnecessary beach closings and limited access to a public resource. The Program encourages the SWRCB to carefully consider and balance both potential effects of the Bacteria Provisions. The Program supports the SWRCB's efforts to update the state bacteria objectives and the variance policy. However, the Program feels there are changes which could provide improved direction to Regional Water Boards, support more effective implementation of actions by the regulated community to protect human health, and allow more accurate and timely methods in response to advances in the available proven and accepted science. The Program has three categories of recommendations that are summarized below and detailed further in the rest of the letter.	Comment noted. See responses to comments 4.01, 4.02, and 4.06.	No
	33.02	I. Make the Bacteria Provisions Adaptable to Improvements in Science Fecal indicator bacteria are imperfect indicators of potential human health risk from pathogens in receiving waters. As a result, a significant effort is being applied in California and at the federal level to improve the methods available to detect risk levels to protect human health. The Bacteria Provisions should be flexible to incorporate the updated epidemiological and indicator science as it evolves.	See the response to comment 4.02.	No
	33.03	II. Allow Regional Water Boards the Flexibility to Use All Available Tools The Bacteria Provisions include a number of implementation options that will significantly improve the ability of the Program to effectively address	The tools available in the Bacteria Provisions are those that have been used successfully to control bacteria levels while protecting human health. Proper	No

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		longstanding concerns with implementing actions to protect human health. However, in several cases, the Bacteria Provisions limit the applicability of the tools or require unnecessary analysis to use the tools.	application of those tools requires careful analysis in order to ensure legal protection of the REC-1 beneficial uses and the public.	
	33.04	Clarify Elements of the Bacteria Provisions to Support Implementation There are a number of clarifications and applications of the Bacteria Provisions that could be improved to more effectively support implementation. Such issues include clearly analyzing and developing separate implementation provisions for wet weather conditions and dry weather conditions, using the objectives based on the higher illness rate for inland waters, clarifying the application of the salinity threshold, and clearly designating the purposes of the two Ocean Plan objectives.	See responses to comments 2.02, 3.08, 4.06, and 4.16.	No
	33.05	Make the Bacteria Provisions Adaptable to Improvements in Science 1. Clarify that the proposed WQOs are based on a protective level of risk. The USEPA has a long record of establishing recreational criteria based on the risk of illness. The USEPA published recommended recreational water quality criteria in 1986 that established the ambient condition of a recreational water body necessary to protect the designated use of primary contact recreation. Criteria values were selected for Escherichia coli (E. coli) and Enterococci in order to carry forward the same level of public health protection that were believed to be associated with the USEPA's previous criteria recommendations based on fecal coliform. The USEPA carried forward this risk-based approach in its 2012 Criteria development. For example, elevated levels of indicator bacteria were linked to increased risk of gastrointestinal illness through epidemiological studies conducted by USEPA during the National Epidemiological and Environmental Assessment of Recreational Water (NEEAR), and the 2012 Criteria were established to carry forward the risk-based approach to setting indicator level bacteria, similar to the 1986 Criteria. Although the risk levels were the drivers for selecting appropriate indicator levels, the only mention of risk in either the ISWEBE or Ocean Plan Provisions occurs in the header of the WQOs table. The Staff Report includes some minor discussion of risk but nowhere is the relationship between the proposed risk level and WQOs adequately described. Since the risk level is the underlying mechanism to protect human health, it should be clearly described in the Bacteria Provisions and Staff Report. The science of recreational water quality is rapidly developing and research in Southern California has been at the forefront of new scientific advancements. These advancements have increased the number of pathogens and indicators that can be measured in recreational waters, lowered the cost of those measurements, and increased the reliability of health risk estimates at local sites based on site-specific data. The ultimate goal of recreational water quality improvement programs is to reduce risk	See responses to comments 2.02, 3.08, 4.01, and 4.02.	No

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		of illness to recreators, as opposed to being solely focused on reducing densities of fecal indicator bacteria. Incorporating a risk discussion into the Bacteria Provisions and Staff Report will allow the amendments to be adaptable to the evolving science in the event that a better indicator becomes available. Thus, the Program requests that the State Water Board include a clear statement within the Bacteria Provisions that E. coli and Enterococci WQOs are the fecal indicator bacteria concentrations designated to represent the risk of illness that is protective of human health for the REC-1 beneficial use. The Program also requests that the statement clarify that Regional Water Boards can establish alternative methods of demonstrating that the risk level established in the Bacteria Provisions is being attained. Requested Action: • Include a statement in the ISWEBE and Ocean Plan Amendments stating that the WQOs are set equal to a risk level that has been interpreted as the indicator bacteria concentrations shown in the amendment. • Include an expanded discussion of the risk level as described in the 2012 USEPA Criteria in the Staff Report.		
	33.06	2. Amendments should include the possibility of using alternative indicators as supported and validated by scientific research. The Bacteria Provisions endorse the use of E. coli and Enterococci as indicators for fresh and marine waters, respectively. The Program supports the inclusion of E. coli and Enterococci as the sole fecal indicator bacteria to be used for assessment of the risk of illness established by the objectives. E. coli and Enterococci should supersede the use of fecal coliform and total coliform as they are better indicators of human illness, as discussed in the USEPA 2012 criteria. However, the field is rapidly evolving and the Bacteria Provisions should be written to be adaptable to future scientific advances. In addition, the Staff Report should also be amended to include a discussion of alternative indicators of risk. The USEPA 2012 Criteria includes a section discussing alternative indicators or methods to assess risk (Section 6.2.3 p. 51) which should be cited in both the Bacteria Provisions and Staff Report: "EPA anticipates that scientific advancements will provide new technologies for enumerating fecal pathogens or [fecal indicator bacteria]. New technologies may provide alternative ways to address methodological considerations, such as rapidity, sensitivity, specificity, and method performance. As new or alternative indicator and/or enumeration method combinations are developed, states may want to consider using them to develop alternative criteria for adoption in WQS." The Program proposes that the following language be included the Bacteria Provisions: "Regional Water Boards may use alternate indicators of risk that are equivalent or better than E. coli and Enterococci for assessing risk	See responses to comments 4.01 and 4.02.	No

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		associated with human illness within a water body as long as they are supported by the latest scientific understanding." In particular, the Program requests that the amendments acknowledge the option of using human markers as an alternative indicator. Numerous studies have established that human sources of bacteria pose the most risk to human health. Hence, the use of human markers provides a more direct method of assessing human health risk than using nonspecific fecal bacteria indicators. Additionally, these studies have provided evidence that general fecal indicator bacteria concentrations are not correlated with the presence of human marker, indicating that the risk associated with the fecal indicator bacteria concentrations may be lower even though the objectives are being exceeded. For example, the Program identified fecal indicator bacteria as a top water quality concern and, with assistance from Southern California Coastal Water Research Project (SCCWRP), conducted an extensive analysis of dry weather bacteria sources throughout the Program. The study included quantification of E. coli and up to three host-specific markers (including human, dog, horse and bird). All 73 samples collected were negative for the sensitive human maker HF 183. Dog markers were only detected in 11 % of the samples, and bird in 37% of the samples. None of the three markers were detected in 60% of the samples and the detection of human markers proved independent of E. coli concentrations. The report concluded that "the absence of human markers suggested that the risk to human health associated with elevated E. coli levels in storm drains is lower than currently assumed, and current water quality criteria may be overprotective." Such studies are valuable in determining fecal indicator bacteria sources and also illustrate that bacteria density can often be decoupled from the human markers which are better indicators of risk to human health. By focusing on human sources, implementation programs can be targeted on sources of fecal indicator bacteria that are of highest risk and avoid the need to address natural sources of bacteria. The implementation procedures for the objectives should allow for a demonstration that human markers are absent or below thresholds that would increase the risk to human health to be used as a demonstration of compliance with the WQOs. Requested Action: • Include a statement in the ISWEBE and Ocean Plan Amendments endorsing the use of alternative indicators of risk as supported by the latest science. Include authorization for alternative indicator thresholds to be used as objectives if they are established at an equivalent risk level to the E. coli and Enterococci objectives.		

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		• Include an implementation provision for the objectives that allows the use of human markers to demonstrate compliance with objectives if approved by a Regional Water Board. • Update language in the Staff Report to provide guidance and allow the use of alternative indicators of risk.		
	33.07	3. Amendments should include the option to develop site-specific objectives using procedures outlined in the USEPA 2012 Criteria. The ISWEBE Plan includes language that bacteria WQOs do not supersede any site specific numeric water quality objective for bacteria established for the REC-1 beneficial use (ISWEBE Provisions Ill. E.3). However, the Ocean Plan Provisions do not include similar language. Furthermore, neither Provision includes a discussion for developing site-specific objectives. Such an approach was encouraged in the USEPA 2012 Criteria (e.g. Quantitative Microbial Risk Assessment [QMRA]), which includes the following language: "States could adopt site-specific alternative criteria to reflect local environmental conditions and human exposure patterns" and include examples of tools to develop the site-specific numeric values: "(1) an alternative health relationship derived using epidemiology with or without QMRA; (2) QMRA results to determine water quality values associated with a specific illness rate; or (3) a different indicator/method combination." (USEPA 2012 Criteria, p. 48) The Program strongly encourages the State Water Board to include implementation language supporting the development of site-specific objectives within the Bacteria Provisions as well as more detailed guidance in the Staff Report as that will streamline adoption of site-specific objectives if conducted. Requested Action: • Include an option to develop site-specific objectives via QMRA or an equivalent approach in both the ISWEBE and Ocean Plan Provisions. • Update the Staff Report to provide guidance on how to develop and streamline adoption of site-specific objectives.	See responses to comments 4.01, and 4.02.	No
	33.08	II. Allow Regional Water Boards the Flexibility to Use All Available Tools 4. Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to all waterbodies. The Program supports the use of the reference reach/ antidegradation approach or natural sources exclusion approach which will provide Regional Water Boards with flexibility to adapt the WQOs for their specific regions. However, the extent of these implementation approaches appears to be limited to only waterbodies with a TMDL as noted in Staff Report: "The reference system/antidegradation approach and the natural sources	See response to comment 4.02, 4.08 and 33.01.	No

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		exclusion approach are appropriate within the context of a TMDL. The TMDL process includes the robust analysis necessary to characterize bacteria sources and it provides an appropriate venue for determining the appropriateness of applying either approach." The Program strongly disagrees with this limitation and recommends that these implementation tools be expanded to waterbodies which do not have an existing TMDL or TMDL in development. The reference system/antidegradation approach is already available in the Los Angeles Basin Plan, but the Program cannot use it because a TMDL has not yet been developed for the watershed. However, the Program would like the option to address the remaining bacteria impairments in the County prior to a TMDL being developed. Reference reaches were established and sampled throughout Ventura County as part of a SCCWRP study to assess concentrations and loads from Ventura County. Additionally, as discussed above, studies of human markers in the County indicate that much of the bacteria observed is likely from natural or less risky sources. Under the proposed approach, the Permittees responsible for TMDL regulated waterbodies would have options to avoid addressing natural sources of bacteria that are not available to other Permittees resulting in discrepancies between the implementation programs. Permittees in areas where the reach/ antidegradation analysis approach is not allowed would be subject to addressing natural sources and have more significant costs than other dischargers simply because they do not have a TMDL. It is inappropriate for all Permittees to not have the same tools available to them when implementing their stormwater program. In Southern California, the same reference reach studies, that include sites from Ventura County, have been used in all regions and the allowable exceedance days have been consistently applied to all bacteria TMDLs in Ventura County. Therefore, it is straightforward to utilize the existing studies in a consistent manner in watersheds that do not have a bacteria TMDL. The requirement for this tool to only be used in the context of a TMDL may force Regional Water Boards and their constituents to develop TMDLs at places that could be more quickly and effectively addressed without a TMDL. While the Program agrees that the TMDL represents a robust analysis process to determine the alternative implementation approaches, it is not the only scenario that allows for such an assessment. Regional Water Boards should be allowed to oversee and approve robust reference system/antidegradation and natural sources exclusion approaches as they deem appropriate. Expanding the implementation tools to all		

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		waterbodies will allow for more flexible and cost effective implementation options, faster and more complete protection of human health, and availability of all regulatory tools to address bacteria in all waterbodies. Requested Action: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to apply to ALL waterbodies where a technical analysis has been approved by a Regional Water Board.		
	33.09	5. Allow the reference reach/antidegradation approach and natural sources exclusion approach to be applied to both the STV and GM. As stated in the previous comment, the Program supports the use of these alternative implementation measures, however the limitation that they only apply to the STV is unnecessary and not based in sound science. During the staff workshop, it was mentioned by Water Board staff that the STV was the only endpoint that was likely to see exceedances in reference reaches. The Program disagrees with this perspective and notes that reference reach studies in Southern California have shown that GM exceedances are observed in natural watersheds. At the Leo Carrillo reference site that has been used for most of the TMDLs in the region, the geometric mean is exceeded over 6% of the time. The justification in the Staff Report for the application of alternate implementation measures for the STV only includes the following: "By allowing an exceedance of the STV, but not the geometric mean, the data distribution of the water quality associated with the geometric mean is not changed and thus the level of protection is not changed. The STV is a percentile of the expected water quality sampling distribution of the GM objective value that is set at a 90 percentile, so that 90 percent of the distributed data is below the STV and 10 percent is above the STV. In the reference system /antidegradation and natural source exclusion approaches, the STV can change to a different percentile of the distributed data, but the geometric mean remains, ensuring the same level of protection of water quality." The Program feels this description does not adequately justify the reasons for not applying the approach to the GM. The data distribution will remain unchanged regardless of whether the STV and/or the GM are exceeded. As mentioned in previous comments the basis for the Bacteria Provisions is to provide a protective level of risk for human health. Reference reach/antidegradation and natural source exclusion approaches are intended to provide Regional Water Boards flexibility in meeting the protective level of risk. If an area experiences high levels of natural indicator bacteria, which in	See response to comment 4.09.	No

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		many cases have been shown to cause lower rates of illness rates than anthropogenic sources of indicator bacteria, then an exceedance of the GM and/or STV may still be protective of the USEPA derived risk-based illness rate. In such cases, the water quality objectives may not be able to be attained due to uncontrollable natural sources, but human health may still be protected. Such determinations must be made only after analysis of the reference reach or natural source exclusion study data. Thus, Regional Water Boards should be given the discretion to determine if the reference reach/ Antidegradation approach and natural source exclusion can apply to both the GM and STV. Requested Action: • Update the ISWEBE and Ocean Plan Provision Implementation language to allow the reference reach/antidegradation and natural source exclusion approaches to be applied to both the GM and the STV.		
	33.10	6. Remove the requirement for the Use Attainability Analysis in the implementation of high flow and seasonal suspensions of REC-1 objectives in the ISWEBE Provisions. The Program appreciates and supports the inclusion of high flow and seasonal suspensions of REC-1 beneficial uses as an implementation option in the Bacteria Provisions. However, the Bacteria Provisions do not provide sufficient guidance to the Regional Water Boards on the implementation of these suspensions apart from requiring a use attainability analysis (UAA). Furthermore, requiring a UAA would create a large burden on the regulated community leading to infrequent use of this implementation option, when the intent of the high flow suspension provision is meant to provide temporary regulatory relief when beneficial uses are precluded. According to the Code of Federal Regulations (CFR 40 §131.1 OU)), UAAs are only required in two situations: (a) when a state designates a new a beneficial use or (b) when a state wishes to remove a designated use or subcategory of the use, or designate a subcategory of such a use that requires criteria less stringent than previously applicable. The Program maintains that a UAA is not required by the CFR because high flow suspensions do not remove a designated use or put in place less stringent criteria, but rather address the temporal appropriateness of the water quality objective when attainment of recreational beneficial use is not applicable for a period of time and not permanently changed. The Staff Report incorrectly states that the Los Angeles Regional Board is the only Regional Water Board that has adopted a high-flow suspension to their Basin Plan. The Santa Ana Region Basin Plan also incorporated a high-	See response to comment 4.14.	No

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		flow suspension as an implementation action which was developed with extensive Program input and approved by both the USEPA and State Water Board. Importantly, the Santa Ana Regional Water Board implementation action was approved by USEPA and adopted into the regional Basin Plan by the State Water Board without a UAA. Neither the Santa Ana region Basin Plan nor the Staff Report for the Basin Plan Amendments contain explicit mention of the completion of a UAA in the development of the high-flow suspension provision. The Staff Report for the Basin Plan Amendments further states, "temporarily suspending recreational uses due to inclement weather is analogous to adopting seasonal uses." Thus, it appears that UAAs are not legally required for a suspension to be implemented if the suspension is incorporated as an implementation provision of the objectives. The Program requests that the State Water Board remove the requirement for a UAA to allow Regional Water Boards the option to adopt high flow and seasonal suspensions in the same manner as the Santa Ana Regional Board via an implementation action. The Program also requests that the Staff Report be updated to include mention of high flow suspension adoption in the Santa Ana Region Basin Plan. Additionally, the Program requests that the State Water Board establish the high-flow and seasonal suspensions as implementation provisions of the objectives, consistent with the Santa Ana Regional Board approach, with thresholds (e.g., velocity or depth) that would meet the criteria for the suspension. This way Regional Water Boards could develop information on when and where the suspensions apply in waterbodies within their region that is specific to the local hydrologic and climate conditions. Resources such as Methods for Assessing lnstream Flows for Recreation and others have provided information on thresholds for velocity and depth for various beneficial uses that can be used to develop thresholds for the suspensions that could apply statewide. This approach would facilitate the consistent use of the suspensions statewide in a manner that is more feasible than conducting UAAs. Requested Action: • Remove the requirement for a UAA for high-flow and seasonal suspensions in the ISWEBE Provisions in order to comply with the CFR. • Update the Staff Report to include the high-flow suspension implementation option from the Santa Ana Region Basin Plan. • Establish guidance to provide statewide consistency in implementation and streamline development of the suspensions.		

Organization	No.	Comment	Response	Revision [1]
	33.11	7. Suspend REC-2 objectives when high-flow or seasonal suspensions apply. The Bacteria Provisions state that REC-2 water quality objectives shall remain in effect during a high flow suspension. However, the Staff Report notes several times in Section 5.3.2 that REC-1 and REC-2 beneficial uses are not fully attainable during high flow events that justify the suspension of REC-1 objectives. This is recognized in the Santa Ana Region Basin Plan, which temporarily suspends REC-1 and REC-2 objectives when high flows prevent safe recreation. The Program recommends that REC-2 water quality objectives also be suspended during events when REC-1 objectives are suspended. Requested Action: • Suspend REC-2 objectives when high-flow or seasonal suspensions apply.	See response to comment 4.15. References to the REC-2 beneficial use have been removed from Chapter 5 section 5.3.2 of the Staff Report. As stated in Chapter IV.E.3 and Chapter IV.E.4 of the Bacteria Provisions for Part 3 of the ISWEBE, "Bacteria water quality objectives for other applicable beneficial uses, including noncontact water recreation (REC-2), will remain in effect.	Yes
	33.12	Ill. Address Outstanding issues with Bacteria Objectives 8. Provide guidance on how existing bacteria TMDLs will be aligned with the new WQOs. The Bacteria Provisions provide little guidance on how the new WQOs will be implemented into existing Bacteria TMDLs. The only language included in the Staff Report states: "Bacteria TMDLs may need to be updated to be consistent with the Bacteria Provisions as time and workload allow." The Program's members are implementing bacteria TMDLs in Malibu Creek, Santa Clara River, and the Harbor Beaches of Coastal Ventura. The Program would like clarification from the State Water Board on how the new WQOs will affect existing TMDLs and how the TMDLs should be reassessed for compliance. The State Water Board should provide a set timeframe over which existing bacteria TMDLs should be reevaluated following the effective date of the new Bacteria Provisions. A similar approach was taken in the recent Trash Amendments which allowed one year for the Los Angeles Regional Water Board to reevaluate and assess the impact of the new amendments and change any existing trash TMDLs. Requested Action: • Include language in the Ocean Plan and ISWEBE Provisions allowing a set timeframe for existing bacteria TMDLs to come into compliance with the new WQOs, similar to language included in the Trash Amendments. Provide guidance in the Staff Report about how existing TMDLs should be reassessed for compliance with the new WQOs.	See responses to comments 2.02 and 14.09. Adopted TMDLs have implementation plans which include a reopening clause with a built in date for reevaluating the effectiveness of a TMDL. This evaluation would also include an examination of the impact of new water quality objectives. Additionally, stakeholders can request via the triennial review process or at any time the reevaluation of a TMDL. Adding a schedule to the Bacteria Provisions is not proposed as it would circumvent the existing triennial review and basin plan amendment processes.	No
	33.13	9. Reassess all existing waterbodies included on the 303(d) List for REC-1 bacteria exceedances with the new WQOs. While many TMDLs have been developed for bacteria in Ventura County, several waterbodies are still included on the 2010 303(d) list as impaired due to indicator bacteria, pathogens, fecal coliform, total coliform, Enterococci, E.coli, or enteric viruses. Currently, the provisions do not address how these new WQOs will be used to evaluate legacy water body	See response to comment 4.04.	No

Organization	No.	Comment	Response	Revision [1]
		303(d) listings. The Program requests that the provisions require these listings to be reassessed using the new, scientifically defensible WQOs, and any waterbodies that no longer exhibit exceedance be delisted. The reassessment should be conducted as a listing evaluation, and waterbodies that do not meet the listing thresholds should be removed, regardless of whether or not they meet the delisting requirements. At a minimum, any water body undergoing TMDL development should be required to be reassessed for exceedances with the new WQOs prior to developing the TMDL. This requirement should be clearly stated in the Bacteria Provisions and discussed in the Staff Report in order to standardize the regional approach and avoid unnecessary TMDLs for waterbodies that are not in exceedance under the new objectives. Requested Action: • Include language in the Bacteria Provisions requiring legacy 303(d) bacteria listings to be reassessed with the new WQOs under the next 303(d) Listing cycle using the criteria for listing waterbodies. • Include language in the Staff Report requiring that any new bacteria TMDL include an analysis of bacteria exceedances with the new WQOs prior to TMDL development and implementation.		
	33.14	10. Provide flexibility in the calculation of the geometric mean. The Program supports the use of a six-week geometric mean (GM) which allows flexibility in monitoring programs especially when sampling events are affected by uncontrollable weather events and/or laboratory issues. However, some of the language in the Bacteria Provisions appears to limit the flexibility of monitoring programs. For example, in the ISWEBE Provisions there is language stating "the geometric mean values shall be applied based on a statistically sufficient number of samples, which is generally not Jess than five samples equally spaced over a six-week period." [emphasis added] The requirement for equal spacing of the samples places a burden on sampling programs especially if weather or other uncontrollable circumstances result in loss of a sample. Furthermore, the Staff Report states that the Bacteria Provisions are not intended to act as a disincentive for permittees to sample more frequently. Requiring equal spacing of samples would make more frequent sampling following an exceedance difficult. Requested Action: • Maintain the 6-week averaging period for the geometric mean. • Remove the language in the Bacteria Provisions requiring "equally spaced" sampling for the GM and STV.	See response to comment 4.07.	No

Organization	No.	Comment	Response	Revision [1]
	33.15	11. Bacteria Provisions should distinguish between wet and dry conditions. The Program is concerned that there is no distinction between wet and dry conditions in the Bacteria Provisions. There are many areas throughout the state which experience sporadic and limited rainfall. When these infrequent wet weather conditions do occur, they result in high concentrations of pollutants, including bacteria, such that meeting dry weather derived WQOs is more costly and potentially not feasible. Compliance determinations of wet and dry weather often occurs separately when the objectives are applied; therefore, methods for appropriately distinguishing weather-specific objectives should be established. All Ventura County bacteria TMDLs include separate allocations for summer dry, winter dry, and wet weather conditions based on the large changes in bacteria loading for each of these weather and seasonal conditions. Under the California Water Code (CWC Section 13241), the State and Regional Water Boards are required to consider a number of factors when adopting WQOs: consideration of past, present and probable future beneficial uses of water; and consideration of the water quality condition that could reasonably be achieved through coordinated control of all factors which affect water quality in the area. The Staff Report should include appropriate information separately for wet and dry weather events to ensure that the State Water Board has all of the necessary information to consider the required 13241 factors. Dry and wet weather have different foreseeable methods of compliance that could impact the analysis of the water quality that could be reasonably achieved. As part of the implementation plan development, the Program evaluated a number of strategies for reducing bacteria loads to meet objectives during dry weather and wet weather separately. During dry weather, many potential strategies were identified, but during wet weather only infiltration or capture and reuse were identified as possible options to meet the objectives for stormwater and agricultural dischargers. In some areas of the watershed, implementation of these strategies may be very costly or infeasible due to poor soil conditions and a lack of locations available to install treatment. Without a separate evaluation, the State Water Board analysis does not adequately assess the ramifications of compliance with the objectives during wet weather. In short, such considerations might result in requirements for wet weather that may not be possible. Further, implementation provisions for WQOs should clearly define implementation requirements for both wet and dry weather. The implementation procedures should be developed based on the 13241 analysis results with consideration given to the underlying science used to develop the objectives, the short duration of storm events, and the	See response to comment 4.06.	No

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		associated potential impacts to beneficial uses. Overall, this evaluation should be consistent with Section 13241 requirement, "reasonable protection" of beneficial uses. Establishing water quality objectives should assess the ecological impact of wet weather exceedances and establish associated implementation procedures that account for allowable exceedances and impacts that occur as a result of the exceedance during wet weather as distinct from dry weather. As currently drafted, the implementation provisions do not meet the requirements for a Program of Implementation as required by Section 13242. In order to correct this problem, the Program recommends that the Bacteria Provisions be amended to exclude wet weather events from GM calculations and only apply the acute STV endpoint to wet weather events. The epidemiological studies that were the basis for the USEPA 2012 Criteria were used to establish relationships with indicator bacteria collected during dry weather. Wet weather events are sporadic, short term events that do not have lasting impacts on bacteria water quality in receiving waters. As a result, wet weather data is not appropriate to be considered in the longer term conditions represented by the GM. Because the GM and STV both offer the same level of risk protection, using only the STV for wet weather conditions will not result in increased risk to human health and will be more representative of the impact from wet weather events. Requested Action: • Conduct a 13241 analysis specific to wet weather and modify the objectives for wet weather, if necessary, after the analysis. • Exclude wet weather events from GM calculations and state that only the STV should apply for wet weather events.		
	33.16	12. The selected risk level should be set at 36 illnesses per 1,000 water contact recreators. The USEPA 2012 Criteria was based on an extensive review of available scientific literature and public review to arrive at two NGI risk levels which would be protective of contact recreation. As stated in the Criteria document: "EPA recommends that states make a risk management decision regarding illness rate which will determine which set (based on illness rate selected) of criteria values are most appropriate for their waters. The designated use of primary contact recreation would be protected if either set of criteria ... is adopted into state WQS and approved by EPA." [emphasis added] The State Water Board endorsed the NGI risk level of 32 illnesses per 1,000 water contact recreators in the proposed Bacteria Provisions stating that "while both recommended illness rates are considered protective of public health, the 32 NG I per 1,000 would require a more stringent threshold for Fecal Indicator Bacteria," (Staff Report, p.	See response to comment 2.02, 2.03, and 3.08.	No

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		69). In choosing between the two risk levels the State Water Board is required to include economic considerations of water quality conditions that could reasonably be attained through coordinated control of all factors affecting water quality. In this analysis, the State Water Board should distinguish between the selection of either the 32 or 36 illnesses per 1,000 water contact recreators. Such an analysis does not appear to have been completed. Chapter 10 of the Staff Report includes economic considerations for the chosen risk level but not a comparison between the two. Since both risk levels are protective of public health as stated by USEPA the higher risk level of 36 illnesses should receive equivalent consideration. Endorsing the lower risk level simply because it is more conservative without consideration of impacts to the regulated community is not defensible without a supporting analysis. Furthermore, because both risk levels are protective of public health, the Program recommends using 36 illnesses per 1,000 recreators as the basis for the Bacteria Provisions WQOs for the ISWEBE and Ocean Plan provisions. Overburdening the regulated community to address indicator bacteria beyond a limit needed to protect human health is onerous and depletes valuable public funds which could otherwise be used to address other pressing water quality issues. In addition, applying an overly conservative risk level can, in and of itself, lead to a significant impact on REC-1 beneficial uses. The State and Regional Water Boards should consider the impacts of selecting the lower risk level especially if they may lead to more beach closings (thus removing the beneficial use) while not providing any additional protection to human health. Requested Action: • Conduct a 13241 analysis specific to the two NGI risk levels proposed in the USEPA 2012 Criteria and detail the findings in the Staff Report. • Include the 36 illnesses per 1,000 recreators risk level and associated E. coli and Enterococcus objectives in the ISWEBE and Ocean Plan Provisions.		
	33.17	13. The salinity threshold in the ISWEBE Provisions should be written to clearly demonstrate that a water body will not be subject to changing E. coli and Enterococci WQOs. The Program supports the application of separate indicators for fresh and saline waters and particularly supports the decision by the State Water Board to only apply the Enterococci indicator to saltwater as it is known to result in erroneous exceedances when applied to freshwater due to natural sources. However, the Program is concerned that the distinction between saline and freshwater does not cover all waterbodies and may inadvertently expose estuaries and river mouths to varying WQO indicators due to seasonal and tidal changes in salinity. The ISWEBE Provision includes the following language in Table 1 to distinguish between the salinity of the waterbodies:	See response to comment 4.16.	No

Organization	No.	Comment	Response	Revision [1]
		Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is Jess than 10 ppth 95 percent or more of the time" Saltwater (Enterococcus): "All waters, where the salinity is equal to or greater than 10 ppth 95 percent or more of the time" However, no guidance is provided for waterbodies which may fall between the two cutoffs, for instance an estuary that is seasonally separated from the ocean such that it is saline (>10 ppth salt) only 70 percent of the time in a calendar year. The Program recommends that the State Water Board modify the wording of the salinity threshold to be discrete and cover all waterbodies (including those that might fall between the two salinity cutoffs) or provide recommendations of how to monitor waterbodies which do not consistently fall into either freshwater/salinity classification. The Program recommends making the following change to the freshwater language: Freshwater (E. coli): "All waters, except Lake Tahoe, where the salinity is not equal to or greater than 10 ppth 95 percent or more of the time" The Program requests that in no situation should a water body need to be monitored with varying WQO indicators based on the ambient salt concentrations. Such a requirement would result in unnecessarily complicated monitoring efforts. Requested Action: • Update the language in the ISWEBE regarding salinity such that the threshold represents discrete classifications for the two indicators. • If a text change is not completed, provide guidance on how to handle waterbodies that do not distinctly fall into either the fresh or salt water category.		
	33.18	14. Clarify the distinction between the Ocean Plan Bacteria Provisions and AB411 standards. The Ocean Plan Provisions maintain the California Department of Public Health (CDHP) AB411 standards, but do not provide a clear distinction between the new objectives and the AB411 objectives and how and when they each should apply. The Provision language appears to state that all of the objectives (new bacteria and AB411 objectives) would be used for permitting, and that only the new WQOs would be used for 303(d) listing decisions; however, the distinction is unclear. For instance, in section 111.D.1.a of the Ocean Plan Provisions, the text states: "Any of the bacteria water quality objectives shall be implemented, where applicable, through National Pollutant Discharge Elimination System (NPDES) permits ... " [emphasis added] The State Water Board should clarify that the bolded text refers only to the new State Water Board Water-Contact Objectives (11.B.1.a) and that the AB411 objectives should only be used for the purposes of posting beaches, not for 303(d) listing, permitting, or TMDL development. The Ocean Plan Provisions need to be clear as to the purpose of each of the objectives as they use different indicators and were	The Ocean Plan Bacteria Provisions in Chapter III have been revised to clarify the applicability of the bacteria water quality objectives to include the enterococci objective in Chapter II.B.1.a and not the Beach Notification Levels. The Ocean Plan Amendment also retains the fecal coliform objective as contained in the current Ocean Plan. Accordingly, the enterococci and fecal coliform bacteria objectives of II.B.1.a will be used for TMDLs (III.D.1.b), NPDES permits (III.D.1.c) and water quality assessment decisions (III.D.1.f). The Ocean Plan Bacteria Provisions in Chapter III have been updated to clarify that the Beach Notification Levels (II.B.1.b) only apply to section III.D.1.e "water adjacent to public beaches and for public water-contact sports areas in ocean waters" and are not water quality objectives established and implemented by the Water Boards. As discussed in Chapter 3 section 3.6 of the	Yes

Organization	No.	Comment	Response	Revision [1]
		established using different methodologies for different purposes. Additionally, the Program requests that the State Water Board consider modifying the AB411 objectives to provide consistency with the new State Water Board Water-Contact Objectives. The new objectives are based on a more comprehensive set of epidemiological studies and is more reflective of the risk to human health during recreation. EPA has clearly stated in the 2012 criteria that fecal and total coliform are no longer recommended to be used. Requested Action: • Update the language in Ocean Plan Provisions so that the WQOs which apply to the NOPES permits are clearly listed as the new State Water Board Water-Contact Objectives by inserting "(11.B.1.a)" after the word "objectives" in section 111.D.1.a. • Clarify that the CDPH AB411 objectives should only be utilized for beach posting purposes. • Modify the CDPH AB411 objectives for consistency with Water Contact Objectives.	Staff Report, while the program management and water quality standards are the responsibility of the State Water Board, Senate Bill 482 (2011 – amending Health and Safety § 115875-115915 and adding § 115881) which redirected the responsibility for beach monitoring protocols from CDPH to the State Water Board, left with CDPH the responsibility to establish minimum standards for the sanitation of public beaches in Title 17 of the California Code of Regulations sections 7952-7962 . Therefore, the State Water Board does not have authority to modify the AB411 objectives for public beach notification purposes (implemented by local officials and CDPH) and this is beyond the scope of this project.	
	33.19	15. Provide a discussion of mixing zones in the Ocean Plan Provisions. The Program encourages the State Water Board to consider the allowance of mixing zones for stormwater discharges for bacteria. The Ocean Plan currently contains implementation provisions for permitted stormwater discharges that include the following definition: "RECEIVING WATER, for permitted storm water discharges and nonpoint sources, should be measured at the point of discharge(s), in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero)." The Program requests that the State Water Board consider modifications of this definition or inclusion of a mixing zone provision for permitted storm water discharges. As these Provisions were developed to protect a beneficial use, the definition of receiving water should be adjusted to reflect areas where the beneficial use occurs which is not at the point of discharge but at some minimum defined distance away from a discharge point. Permittees should be allowed to conduct studies to determine applicable mixing zones for bacteria and not be precluded from establishing them by the implementation provisions of the Ocean Plan. As stated in the Staff Report, the Ocean Plan already has a statewide policy regarding mixing zones for toxic pollutants which is implemented through wastewater NPDES Permits, but has not established something similar for stormwater. It is logical to extend a similar policy to the Bacteria Provisions in order to establish a statewide standard for developing mixing zones for stormwater discharges. In addition, any changes to the definition of receiving water or application of mixing zones should apply to both the Bacteria Provisions and AB411 Provisions in order to standardize and streamline monitoring programs. Requested Action:	See responses to comments 1.02, 4.17 and 33.18.	No

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		• Add a provision for establishing mixing zones for permitted stormwater discharges in the Ocean Plan Provisions and Staff Report. • Change the definition of receiving waters (where sampling will occur) for the Bacteria Provisions and AB411 as areas where the beneficial use actually takes place (i.e ., not at the point zero of an outfall).		

Summary of oral comments received at the August 1, 2017 State Water Board Public Hearing

Organization	No.	Comment	Response	Revision
Heal the Bay & California Coast Keeper Representative: Steven Johnston	34.01	Will be submitting full comments	Comment noted.	No
	34.02	The Provisions are more compliance orientated than concerned about public health.	See response to comment 3.08.	No
	34.03	Concerned about the use of enterococci as the sole indicator for marine waters. Years of data sampling for total and fecal coliform show a greater percentage of violations versus the violations shown with enterococci.	See response to comment 18.02	No
	34.04	Concerned about the application of the LREC-1 beneficial use and that fencing off a water body would be sufficient justification for a LREC-1 designation. Also concerned about the increased loading of bacteria in these waters and what happens downstream from the increased bacteria loading.	See responses to comments 3.15 and 3.18.	No
Central Sierra Environmental Resource Center Representative: Meg Layhee	35.01	Supports most of the Bacteria Provisions.	Comment noted.	No
	35.02	Opposes the LREC-1 beneficial use definition because of the use of low water depth. How is this designated and defined?	See response to comment 3.15.	No
	35.03	Opposes the 6-week rolling average calculation of the objectives due to surges and pulses of bacteria. Prefers a 4-week rolling average.	See response to comment 4.07.	No
	35.04	Opposes the seasonal suspension of the REC-1 use defined by low water flow and temperature. Water is still used for recreation when flow is low and temperature is low.	See response to comment 6.06.	No
	35.05	Would like anthropogenic sources of bacteria defined in the Bacteria Provisions. Ms. Leyhee's assumption is that livestock grazing is considered an anthropogenic source.	See response to comment 6.04.	No
Centennial Livestock Representative: Bill Thomas	36.01	Frustrated by pathogen standards of Region 6 for 35 years.	Comment noted.	No
	36.02	Supports U.S. EPA standards to be used across the US, across the state, and specifically across Region 6.	Comment noted.	No
	36.03	Supports objectives proposed for Lake Tahoe, and supports proposed objectives for the rest of the state, but hoped for the higher illness rate.	See response to comment 2.02.	No
	36.04	Concerned that Region 6 will use the current objective of 20 cfu/100ml of fecal coliform to protect uses other than REC-1, such as REC-2.	See response to comment 22.07.	No
CASQA	37.01	Meeting fecal indicator objectives during wet weather is nearly impossible for storm water dischargers.	See response to comment 4.06.	No

Organization	No.	Comment	Response	Revision
Representative: Geoff Brosseau	37.02	Wants the implementation tools to be more useable and available to proactively address bacteria problems as they relate to storm water.	See responses to comments 4.08 and 12.14.	No
Larry Walker and Associates representing CASQA Representative: Ashli Desai	38.01	They support the provisions, especially the implementation provisions.	Comment noted.	No
	38.02	Concerned that the Reference System/Antidegradation and natural source exclusion approaches can only be used in the context of a TMDL. There are dischargers who want to be proactive about their discharges without having to undertake the TMDL process. Proactive dischargers could have more stringent objectives then those that do nothing and wait for a TMDL.	See response to comment 4.08.	No
	38.03	For the high flow suspension, the velocity and level of flow should be defined.	See response to comment 4.14.	No
	38.04	Concerned about the precedent in Santa Ana to not do a UAA.	See response to comment 4.14.	No
	38.05	The risk aspect of the bacteria objectives for human markers needs to be discussed. This would allow Regional Boards to easily develop alternative objectives with alternative indicators. Suggests using a risk default objective.	See responses to comments 4.01 and 4.02.	No
	38.06	Would like REC-2 objective addressed as part of the current Bacteria Provisions. REC-2 is inconsistently applied and could trump REC-1-based objectives.	See response to comment 4.15.	No
	38.07	Concerned about the conflict between beach posting using fecal and total coliform and the objective using enterococci.	See responses to comments 4.17 and 33.18.	No
	38.08	Need to actively think about wet versus dry weather in implementation. Are wet weather samples including in the geometric mean?	See response to comment 4.06.	No
	38.09	The Staff Report should acknowledge the risk-based approach and the new science being developed that could be used to determine alternative objectives in the future.	See responses to comments 4.01 and 4.02.	No