April 23, 2012

ITEM 9

Errata
Attachments 1 and 2 to Resolution No. R8-2012-0001

1. **Attachment 1 to Resolution No. R8-2012-0001, p. 2 of 76: Modify the text proposed to be added to CHAPTER 3 – BENEFICIAL USES, BENEFICIAL USES section. (Deleted text is in strikeout type; added text is shown in bold italics.)**

   In response to recommendations from the Stormwater Quality Standards Task Force, formed in response to the 2002 triennial review of the Basin Plan, changes to recreation water quality standards were approved by the Regional Board in 2012 (RWQCB Resolution No. R8-2012-0001). These modifications included ~~revision~~ ***the addition of "Primary Contact Recreation" as an alternative name for*** ~~of the name of~~ the REC1 beneficial use ~~from "Water Contact Recreation" to "Primary Contact Recreation"~~ (see BENEFICIAL USE DEFINITIONS, below) and ***added narrative clarifying the nature of REC1 activities and the bacteria objectives established to protect them.*** ~~a clearer definition of this use~~ (see ~~also~~ RECREATION BENEFICIAL USES, below)***.*** ~~, for further discussion of the changes in the REC1 definition~~.) The changes also included differentiating inland surface REC1 waters on the basis of frequency of use and other characteristics for the purposes of assigning applicable single sample maximum values (see Chapter 5). The REC1/REC2 designations for specific inland surface waters were revised based on the results of completed Use Attainability Analyses (see RECREATION BENEFICIAL USES, below). Revised water quality objectives to protect the REC1 use of inland freshwaters were also approved (see Chapter 4), and criteria for temporary suspension of recreation use designations and objectives were identified (see RECREATION BENEFICIAL USES , below, and Chapter 5, Implementation, Recreation Water Quality Standards, *High Flow Suspension*). The 2012 Basin Plan revisions to incorporate the changes in recreation standards included the addition of certain waters to the list of the Region's waters in Table 3-1 and the designation of beneficial uses for those waters. Where appropriate, the added waters were excepted from the MUN designation. Laguna and Lambert reservoirs, which no longer exist, were deleted from the list.

   Attachment 2 to Resolution No. R8-2012-0001, p. 2 of 77: **Modify the text proposed to be added to CHAPTER 3 – BENEFICIAL USES, BENEFICIAL USES section. (Deleted text is in strikeout type; added text is shown in bold italics.)**

   In response to recommendations from the Stormwater Quality Standards Task Force, formed in response to the 2002 triennial review of the Basin Plan, changes to recreation water quality standards were approved by the Regional Board in 2012 (RWQCB Resolution No. R8-2012-0001). These modifications included ~~revision~~ ***the addition of "Primary Contact Recreation" as an alternative name for*** ~~of the name of~~ the REC1 beneficial use ~~from "Water Contact Recreation" to "Primary Contact Recreation"~~ (see BENEFICIAL USE DEFINITIONS, below) and ***added narrative clarifying the nature of***

REC1 activities and the bacteria objectives established to protect them ~~a clearer definition of this use~~ (see ~~also~~ RECREATION BENEFICIAL USES, below)***.*** ~~, for further discussion of the changes in the REC1 definition~~.) The changes also included differentiating inland surface REC1 waters on the basis of frequency of use and other characteristics for the purposes of assigning applicable single sample maximum values (see Chapter 5). The REC1/REC2 designations for specific inland surface waters were revised based on the results of completed Use Attainability Analyses (see RECREATION BENEFICIAL USES, below). Revised water quality objectives to protect the REC1 use of inland freshwaters were also approved (see Chapter 4), and criteria for temporary suspension of recreation use designations and objectives were identified (see RECREATION BENEFICIAL USES , below, and Chapter 5, Implementation, Recreation Water Quality Standards, *High Flow Suspension*). The 2012 Basin Plan revisions to incorporate the changes in recreation standards included the addition of certain waters to the list of the Region's waters in Table 3-1 and the designation of beneficial uses for those waters. Where appropriate, the added waters were excepted from the MUN designation. Laguna and Lambert reservoirs, which no longer exist, were deleted from the list.

2. **Attachment 1 to Resolution No. R8-2012-0001, p. 2-3 of 76, and Attachment 2 to Resolution No. R8-2012-0001, p.2 of 77, CHAPTER 3 – BENEFICIAL USES, BENEFICIAL USE DEFINITIONS, Water Contact Recreation (REC1*):**

    a. **Delete proposed revisions to the name and definition of the Water Contact Recreation (REC1*) beneficial use.**

    b. **Modify the name of the Water Contact Recreation (REC1*) beneficial use as follows: (added text is shown in bold italics):**

    Water Contact Recreation **(REC1*: *Primary Contact Recreation)***

3. **Add the following modification of the name of the Non-contact Water Recreation (REC2*) beneficial use (CHAPTER 3 – BENEFICIAL USES, BENEFICIAL USE DEFINITIONS) as follows: (added text is shown in bold italics)**

    Non-contact Water Recreation **(REC2*: *Secondary Contact Recreation)***

4. **Attachment 1 to Resolution No. R8-2012-0001, p. 3-4 of 76, and Attachment 2 to Resolution No. R8-2012-0001, p. 3 of 77, CHAPTER 3 – BENEFICIAL USES: revise the proposed section "RECREATION BENEFICIAL USES" as follows:**

    a. **Delete the first three proposed paragraphs in this section.**
    b. **Add the following text at the start of the proposed RECREATION BENEFICIAL USES section, preceding the paragraph that begins "Pursuant to the federal Clean Water Act and implementing regulation…":** (added text is shown in bold italics)

As part of the work that led to the adoption of recreation standards amendments in 2012, the Stormwater Quality Standards Task Force considered the merits of and various alternatives for modifying the REC1 definition to improve clarity and precision. This was based on careful consideration of the scientific basis of the 1986 USEPA bacteria criteria for REC1 waters and earlier criteria guidance. Specifically, as discussed in the 1986 criteria document and other USEPA guidance and regulation (see, for example, USEPA 2004), USEPA's recommended bacteria quality criteria were intended to reduce the risk of waterborne illness to acceptable levels for those engaged in swimming or similar recreational activities where immersion and ingestion of water are likely. The Stormwater Quality Standards Task Force documentation, which essentially comprised the administrative record for the 2012 recreation standards amendments, includes a memorandum to the Task Force that was prepared by Camp Dresser and McKee, Inc. (CDM), one of the Task Force consultants ("Scientific Basis for EPA Recommended Water Quality Objectives for Bacteria", CDM, April 10, 2006). This memorandum discusses the scientific basis of the criteria, as well as that of the Basin Plan water quality objectives for fecal coliform in freshwaters that were replaced by the E. coli objective in the 2012 Basin Plan amendments. The administrative record also documents the extensive consideration of alternatives appropriate to clarify the REC1 definition to reflect the underlying scientific assumptions of the USEPA criteria, and expectations regarding the likelihood of immersion and ingestion.

In response to State Board staff comments that a consistent statewide definition for REC1 should be maintained absent statewide consideration of revisions to the definition, the specific recommendations developed by the Task Force for refining the definition of that use were not included in the recreation standards amendments adopted by the Regional Board in 2012. These Task Force recommendations should be considered on a statewide basis. Until such time as such statewide consideration occurs, it was thought sufficient for the purposes of the 2012 amendments to add reference to "primary contact recreation" in the name of the REC1 use (see BENEFICIAL USE DEFINITIONS) and to incorporate the following clarifying discussion.

USEPA has provided explicit direction regarding the types of recreational activities to which the USEPA bacteria guidance should be applied. Specifically, USEPA's 1986 criteria (and prior bacteria criteria guidance) are intended for "Bathing (Full Body Contact) Recreational Waters". The 1986 criteria document states:

"In 1986, EPA published Ambient Water Quality Criteria for Bacteria-1986. This document contains EPA's current recommended water quality criteria for bacteria to protect people from gastrointestinal illness in recreational waters, i.e. waters designated for primary contact recreation or similar full body contact uses. States and Territories typically define primary contact recreation to encompass recreational activities that could be expected to result in the ingestion of, or immersion in, water, such as swimming, water skiing, surfing, kayaking or any other recreational activity where ingestion of, or immersion in, the water is likely."

As defined statewide, the REC1 use includes recreational activities involving body contact with water where ingestion of water is reasonably possible including, but not limited to: swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.

The Regional Board has always considered the REC1 designation as functionally equivalent to USEPA's description of primary contact recreation. In practice, the phrase "reasonably possible" is synonymous with the term "likely" when evaluating the probability of ingestion when persons swim or engage in similar body contact recreation. To reflect this, reference to "primary contact recreation" in the REC1 nomenclature was incorporated as part of the 2012 recreation standards amendments, as noted above.

USEPA's rule promulgating E. coli objectives for recreational freshwaters in certain Great Lakes states (USEPA 2004, p. 67222) 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." (USEPA 2002, p. 39).

The Basin Plan definition of the REC 2 beneficial use is functionally-equivalent to that described by USEPA as "Secondary Contact Recreation." Therefore, the 2012 recreation standards amendments added "Secondary Contact Recreation" to the REC2 nomenclature (see BENEFICIAL USE DEFINITIONS). The Regional Board will rely on federal regulation and guidance to determine which waterbodies should be designated REC 2. Relatively brief incidental or accidental water contact that is limited primarily to the body extremities (e.g., hands or feet) is generally deemed REC 2 because ingestion is not considered reasonably possible.

Some confusion may arise as to whether wading and fishing should be considered primary contact recreation (REC1) activities or secondary contact recreation (REC2) activities. Wading and fishing cover a multitude of activities involving a wide range of potential water contact. To avoid misapplication of the E. coli objectives, it is important to apply USEPA's recommended criteria for primary contact recreation only where ingestion of water is reasonably possible. For example, fly-fishing in the middle of a stream or fishing from a float tube would be considered REC-1 activities as it is likely that the person fishing may ingest water. On the other hand, fishing from a riverbank or lake dock is more appropriately deemed REC-2 activity because ingestion, while conceivable, is not considered reasonably possible. Similarly, walking beside or crossing through a shallow creek and getting ones feet wet is also not considered water contact

recreation (REC-1.) This activity is more akin to beachcombing, a recognized "non-contact recreation" (or REC-2) activity. It is not reasonably possible to ingest appreciable quantities of water by merely touching or being splashed by the water. The E. coli objectives established in this Basin Plan are not intended or needed to protect this and similar incidental contact. However, a child sitting in the middle of a low flow creek playing in the water represents the sort of activity that is encompassed by the REC-1 use designation. The Basin Plan E. coli objectives properly apply to this type of activity. (State Board staff spoke to and confirmed these views in a message to Regional Board staff on April 12, 2012. This message is part of the administrative record for the recreation standards amendments approved in 2012.)

The Regional Board's longstanding approach to determining appropriate recreational use classifications is entirely consistent with federal guidance. A review of historical records indicates that USEPA relied heavily on pre-existing definitions to describe primary and secondary contact recreation:

"The Subcommittee defines primary contact recreation as activities in which there is prolonged and intimate contact with the water involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard. Examples include wading and dabbling by children, swimming, diving, water skiing, and surfing. Secondary contact sports include those in which contact with the water is either incidental or accidental and the probability of ingesting appreciable quantities of water is minimal." ("Report of the Committee on Water Quality Criteria" (aka "Green Book"), US Department of Interior, Federal Water Pollution Control Administration, 1968, p. 11)

In summary, some forms of wading and fishing are considered REC-1 because immersion is likely and ingestion is reasonably possible. Other forms of wading and fishing, involving only limited incidental or accidental water contact (primarily to hands and feet) are considered REC-2 because immersion is unlikely and ingestion is not reasonably possible.

Acknowledging that California's REC1 definition has always been considered synonymous with the federal definition of Primary Contact Recreation ensures that the E. coli objective, adopted as part of the 2012 recreation standards amendments, is applied in a manner that is neither more nor less stringent than the federal Clean Water Act requires.

5. Attachment 1 to Resolution No. R8-2012-0001, p. 6 of 76 and Attachment 2 to Resolution No. R8-2012-0001, p. 6 of 77: add the following references:

United States Department of Interior. Federal Water Pollution Control Administration. Report of the Committee on Water Quality Criteria (aka "Green Book"). 1968.

United States Environmental Protection Agency. "Implementation Guidance for Ambient Water Quality Criteria for Bacteria [Draft]. May 2002.

6. **Attachments 1 and 2 to Resolution No. R8-2012-0001: Table 3-1 BENEFICIAL USES, p. 25 and p. 27: Change the proposed MUN designation for Goodhart Canyon, St. John's Canyon and Cactus Valley Creeks (all listed on p. 25) and Mystic Lake (listed on p. 27) from "+" to "I".**

7. **Attachment 1 to Resolution No. R8-2012-0001: CHAPTER 4 WATER QUALITY OBJECTIVES, Pathogen Indicator Bacteria, Bays and Estuaries, REC-1, p. 35-36: delete the last sentence of the Note, as shown (deleted sentence in strikeout-type):**

> Note: The USEPA promulgated enterococci criteria for coastal recreation waters, including enclosed bays and estuaries, in 2004 (40 CFR 131.41). The established geometric mean enterococci value is 35/100mL. No averaging period was specified, leaving that determination to the state's discretion. USEPA also identified single sample maximum enterococci values, which vary based on the frequency of use of the REC1 waters. The Regional Board intends to consider a Basin Plan amendment in the future to formally recognize the enterococci criteria established for enclosed bays and estuaries, to define an appropriate averaging period for the application of the geometric mean criterion, and to define appropriate application of the single sample maximum values to varying areas within enclosed bays and estuaries in the Region. ~~Until the Basin Plan amendment process is completed, the Regional Board will implement the USEPA enterococci criteria for coastal recreation waters on a best professional judgment basis, with full opportunity for public participation and comment.~~

Attachment 2 to Resolution No. R8-2012-0001: CHAPTER 4 WATER QUALITY OBJECTIVES, Pathogen Indicator Bacteria, Bays and Estuaries, REC-1, p. 35: delete the last sentence of the Note, as shown (deleted sentence in strikeout-type):

> Note: The USEPA promulgated enterococci criteria for coastal recreation waters, including enclosed bays and estuaries, in 2004 (40 CFR 131.41). The established geometric mean enterococci value is 35/100mL. No averaging period was specified, leaving that determination to the state's discretion. USEPA also identified single sample maximum enterococci values, which vary based on the frequency of use of the REC1 waters. The Regional Board intends to consider a Basin Plan amendment in the future to formally recognize the enterococci criteria established for enclosed bays and estuaries, to define an appropriate averaging period for the application of the geometric mean criterion, and to define appropriate application of the single sample maximum values to varying areas within enclosed bays and estuaries in the Region. ~~Until the Basin Plan amendment process is completed, the Regional Board will implement the USEPA enterococci criteria for coastal recreation waters on a~~

~~best professional judgment basis, with full opportunity for public participation and comment~~.

8. Attachment 1 to Resolution No. R8-2012-0001: Recreation Water Quality Standards, p. 53 of 76: modify the second proposed paragraph as follows: (deleted text is shown in strike-out type; added text is shown in bold italics)

In 2012, the Regional Board adopted changes to the recreation standards, based on the work and recommendations of the Stormwater Quality Standards Task Force (Resolution No. R8-2012-0001). These changes included revised bacteria quality objectives applicable to freshwaters (see Chapter 4)~~,~~ ***and*** changes to the recreation use designations for specific fresh waters***.*** ~~, and clarification of the definition of REC1 (see Chapter 3).~~ Specific implementation strategies pertaining to the revised standards for freshwaters were also approved. This section describes those implementation strategies, which include the following:

Attachment 2 to Resolution No. R8-2012-0001: Recreation Water Quality Standards, p. 52 of 77: modify the second proposed paragraph as follows: (deleted text is shown in strike-out type; added text is shown in bold italics)

In 2012, the Regional Board adopted changes to the recreation standards, based on the work and recommendations of the Stormwater Quality Standards Task Force (Resolution No. R8-2012-0001). These changes included revised bacteria quality objectives applicable to freshwaters (see Chapter 4)~~,~~ ***and*** changes to the recreation use designations for specific fresh waters***.*** ~~, and clarification of the definition of REC1 (see Chapter 3).~~ Specific implementation strategies pertaining to the revised standards for freshwaters were also approved. This section describes those implementation strategies, which include the following:

9. Attachment 1 to Resolution No. R8-2012-0001: *Application of Single Sample Maximum values in REC1 freshwaters*, p. 55 of 76: revise the following paragraph as shown in bold italics:

Tier A, B, C and D waters are listed in Table 5-REC1-Tiers. Table 5-REC1-Tiers includes a "Comments" column that provides information regarding factors considered in making Tier assignments. An additional***, qualifying*** notation, "N", is also included in this table for certain waters ***assigned to Tier A, B, C or D based on the known or anticipated frequency of use***. It is recognized that there are waters within the Region that are in undeveloped areas and are expected to have low natural bacteria levels. While use of these waters for primary contact recreation may or may not occur or may be limited due to difficulties in access, channel characteristics, flow conditions and the like***, as reflected in the Tier assignments,*** it is also necessary and appropriate to assure the protection of the high quality of these waters. Accordingly, these ***"N" listed*** waters are assigned Single Sample Maximum values using the 75% confidence factor in the calculation, which is the same approach utilized with Tier A, heavily-used waters. "N" listed waters are defined as follows:

Attachment 2 to Resolution No. R8-2012-0001: *Application of Single Sample Maximum values in REC1 freshwaters*, p. 54 of 76: revise the following paragraph as shown in italics:

Tier A, B, C and D waters are listed in Table 5-REC1-Tiers. Table 5-REC1-Tiers includes a "Comments" column that provides information regarding factors considered in making Tier assignments. An additional***, qualifying*** notation, "N", is also included in this table for certain waters ***assigned to Tier A, B, C or D based on the known or anticipated frequency of use****.* It is recognized that there are waters within the Region that are in undeveloped areas and are expected to have low natural bacteria levels. While use of these waters for primary contact recreation may or may not occur or may be limited due to difficulties in access, channel characteristics, flow conditions and the like***, as reflected in the Tier assignments,*** it is also necessary and appropriate to assure the protection of the high quality of these waters. Accordingly, these ***"N" listed*** waters are assigned Single Sample Maximum values using the 75% confidence factor in the calculation, which is the same approach utilized with Tier A, heavily-used waters. "N" listed waters are defined as follows:

10. Attachments 1 and 2 to Resolution No. R8-2012-0001, Table 5-REC1-Tiers, p. 56-62: Make the following modifications:

a. Add the new table notation symbol "x" at the end of the title of the table (**Table 5-REC1-Tiers)** on each page of the table.
b. Move the text shown in table notes 1 and 4 to "x" and remove the numbering.
c. Re-number the other existing table notes.
d. Revise the text in the new table note "x" describing N waters as follows: (deleted text is shown in strikeout type; added text is underlined)

Natural (N) refers to ~~a natural or pristine conditions.~~ waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. ~~Natural~~ N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

e. Change "n" to "N" where "n" appears in this table.

These changes are shown in the revised Table 5-REC1-Tiers attached at the end of this errata sheet. (Since this table has multiple pages, only the underline/strikeout version is attached for simplicity. These changes will be reflected also in the "clean" version (Attachment 2 to Resolution No. R8-2012-0001)).

11. Attachments 1 and 2 to Resolution No. R8-2012-0001, *Application of Single Sample Maximum Values in REC1 freshwaters,* p. 63: remove second paragraph, as shown (deleted text is shown in strike-out type):

~~This Basin Plan attempts to list and designate appropriate recreation (and other) beneficial uses for all the significant inland freshwater bodies in the Region. The Clean Water Act and implementing federal regulations establish the rebuttable presumption that all surface waters are REC1. While surface water bodies in the Region that are not listed in the Basin Plan will be considered REC1 unless and until demonstrated to be otherwise through a Use~~

~~Attainability Analysis, there is no requisite presumption that all such waters belong to any specific REC1 Tier. Until formal consideration, through the Basin Planning process, of the appropriate Tier for any unlisted inland freshwater bodies in the Region is provided, the Regional Board will employ discretion based on its knowledge of those waters and information provided by interested parties to determine the appropriate Tier for those water bodies for regulatory purposes.~~

12. **Attachments 1 and 2 to Resolution No. R8-2012-0001, p.65, Table 5-REC1-ssv "Alternative Method for Assessing Probable Compliance with the *E. coli* Objective in Freshwaters Designated REC1 when Insufficient Data are Available to Calculate a Geometric Mean":** Revise the symbol in the column header "Maximum Expected Single Value for *E. coli*…" from ">" to "=".

13. **Attachment 1 to Resolution No. R8-2012-0001, *High Flow suspension of recreation standards,* p. 70-71: revise the text as follows: (added text is shown in bold italics)(Only the underline-strikeout version of the text is shown, for simplicity. The changes shown will also be included in the "clean" version of the amendments (Attachment 2 to Resolution No. R8-2012-0001))**

    a. **Second paragraph, first two sentences:**
    These hazards are exacerbated in urban streams that have been engineered or ***heavily*** modified to provide essential flood protection during and immediately following storm events. Channel straightening, bank stabilization, ***substantial*** vegetation removal and flow diversions are all intended to convey stormwater runoff to a suitable discharge location as rapidly as possible while minimizing the risk of flooding and erosion.

    b. **Third paragraph:**
    This Plan recognizes these circumstances and specifies that the recreational use designations (REC1 and REC2), the narrative pathogen objective and the numeric pathogen indicator objectives shown in Table 4-pio are temporarily suspended when high flows preclude safe recreation in or near freshwater stream channels that have been engineered, ***heavily*** modified or maintained to serve as temporary flood control facilities. Temporary suspensions of recreation standards do not apply to freshwater lakes, ocean beaches or enclosed bays or estuaries.

    c. **Paragraph "Definition of Unsafe Flows", first paragraph:**
    Flow conditions in freshwater streams in the Santa Ana watershed are presumptively unsafe if either of the following conditions occurs: (1) stream velocity is greater than 8 feet-per-second (fps); or, (2) the product of stream depth (feet) and stream velocity (fps) (the depth-velocity product) is greater than 10 ft^2/s^+. Where representative stream gauge data are not available, unsafe flows are presumed to exist in stream channels that have been engineered or ***heavily*** modified for flood control purposes when rainfall in the area tributary to the stream is greater than or equal to 0.5 inches in 24 hours. Rainfall measurements may be estimated using gauges, Doppler radar data, or other scientifically defensible methods.

[+] The depth-velocity product criterion is not intended to apply to normal dry weather flows contained within low-flow pilot channels within engineered or heavily modified channels.

d. Paragraph "Definition of Engineered or Modified Channels, Modify paragraph as follows:

Definition of Engineered or *Heavily* Modified Channels. The temporary suspension of recreational uses and related water quality objectives during unsafe flow conditions applies only to streams that have been engineered or ***heavily*** modified to enhance flood control protection. Engineered streams include all man-made flood control facilities with a box-shaped, V-shaped or trapezoidal configuration that have been lined on the side(s) and/or bottom with concrete or similar channel-hardening materials. ***Heavily m***~~M~~odified channels include once natural streams that have been ***substantially*** re-engineered, using levees, bank stabilization (rip-rap), channel straightening, vegetation removal and other similar practices, to facilitate rapid evacuation of increased urban runoff during storm events.

e. Paragraph "Delineation of Engineered or Modified Channels", add second paragraph as follows: (added text is shown in italics)

Delineation of Engineered or Modified Channels. The very large number of engineered and modified flood control facilities in the Santa Ana Region makes it difficult to identify all such channels individually by name. Therefore, Appendix VIII provides maps of the waterbody segments that have been engineered or modified in the manner described above and that, therefore, qualify for the temporary suspension of recreational standards under specific high flow conditions. Appendix IX contains ArcGIS files that identify each of these same waterbodies in a more precise, high-resolution format. The engineered flood control channels identified in these Appendices will be updated annually via the annual report submitted by the MS4 permittees for each county in the Region. Additions or deletions to the list of waters identified in these Appendices will also be considered during the triennial review process or on a case-by-case basis upon request by an interested party to do so. Any such request must be supported by substantial evidence. Appendix VIII and Appendix IX can be viewed at the Regional Board's website:
http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/docs/rec_standards/BPA_REC_Standards_Staff_Rpt_AttA_AppVIII.pdf, and
http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/docs/rec_standards/BPA_REC_Standards_Staff_Rpt_AttA_AppIX.zip.

It is important to recognize that while these channels have been engineered or modified for flood control purposes, these changes do not necessarily preclude the support of habitat in and adjacent to the channels, or the use of that habitat by aquatic, avian and terrestrial wildlife. There may be opportunities for habitat and/or species restoration projects in or adjacent to

these channels. The temporary suspension of recreation standards in these channels would have no effect on the ability to implement such projects.

14. Attachment 1 to Resolution No. R8-2012-0001, p. 67- 68, *Antidegradation targets for REC2 only freshwaters*: revise text and tables to reflect that the antidegradation targets will be based on the upper 75th percentile, rather than the upper 95th percentile, as shown below (deleted text is struck out; added text is shown in bold italics. Numeric values in the tables are revised accordingly.) (Only the underline/strike-out version of the revised section is shown, in its entirety, for simplicity. The changes shown will be incorporated also in the "clean" version of the proposed amendments presented in Attachment 2 to Resolution No. R8-2012-0001, p. 67-68, *Antidegradation targets for REC2 only freshwaters*.)

Antidegradation targets for REC2 only freshwaters

As discussed in Chapter 4 (Pathogen Indicator Bacteria, *REC2 Only Freshwaters*), this Plan does not specify bacteria quality objectives for freshwaters designated REC2 only. However, it is appropriate to take steps to assure that bacteria quality conditions in these waters do not degrade as the result of controllable water quality factors, consistent with antidegradation policy requirements.

For waters designated REC2 only pursuant to approved Use Attainability Analyses (UAAs; see discussion in Chapter 3 and Table 3-1), bacteria quality targets will be calculated and used to provide a baseline for expected water quality conditions in these waters. If future monitoring provides credible evidence that these targets are being exceeded and that quality conditions may have declined, then additional monitoring and investigation will be initiated and corrective action taken if and as appropriate. Requirements pertaining to monitoring and follow-up investigation and action are identified below (*Monitoring Plan for Pathogen Indicator Bacteria in Freshwaters*).

The baseline condition (antidegradation target) for each REC2 only water will be established through a comprehensive statistical analysis of ambient bacteria quality data that is conducted as part of the UAA used to justify the REC2 only designation. The statistical analysis must be designed to characterize the entire distribution of the dataset. This includes determination of the ***geometric*** mean, median, standard deviation, coefficient-of-variation, maximum value, upper ***75th*** ~~95th~~ percentile value and sample size for the dataset. The upper ***75th*** ~~95th~~ percentile density will serve as the antidegradation target, that is, the trigger threshold for further investigation and possible corrective action. As new data become available pursuant to requisite monitoring, they will be compared to this antidegradation target to determine whether further investigation or action is needed. The additional monitoring results must be sufficiently robust to assess whether a lowering of water quality has occurred.

In general, the following method will be used to estimate the upper ***75th*** ~~95th~~ percentile densities:

Step 1) Log-transform the existing data
Step 2) Calculate the mean of the log-transformed data
Step 3) Calculate the standard deviation of the log-transformed data
Step 4) Multiply the standard deviation of log-transformed data by ***0.675*** ~~1.65~~
Step 5) Add result from Step 4 to the mean value calculated in Step 2
Step 6) Calculate the anti-log for the value derived in Step 5; this is the ***75th*** ~~95%~~ Upper Confidence Level.

Using the ***75th*** ~~95th~~ percentile to assess water quality trends and as a trigger for further monitoring is conceptually similar to U.S. EPA's recommended approach for using Single Sample Maximums (see *Application of Single Sample Maximum values in REC1 freshwaters*, above), and to the approach used to characterize ambient TDS and nitrogen quality in the groundwater management zones throughout the Santa Ana Region (see Chapter 4, Management Zone TDS and Nitrate-nitrogen Water Quality Objectives).

Where ***75%*** ~~95%~~ of the new data is less than or equal to the antidegradation target, no degradation will be inferred. However, if more than ***25%*** ~~5~~% of the samples exceed the target, additional samples must be collected and analyzed to determine whether the elevated value***s*** ~~is an anomaly~~ ***are anomalous*** (verified by formal outlier analysis) or if ***there is*** ~~it indicates~~ a true trend toward water quality degradation.

Use Attainability Analyses have been completed to justify the designation as REC2- only the specific freshwater stream segments listed in Table 5-REC2 Only Targets-FW. For each of these waters, this Table shows the antidegradation indicator bacteria targets, based on the ***75%*** ~~95%~~ upper confidence level of data obtained as part of the UAAs:

Table 5-REC2 Only Targets-FW[1]

REC2 Only Waterbody	*E. coli* Densities (cfu/100 mL)				
	Geometric Mean	Std. Dev.	N	Max. Observed	***75*** ~~**95**~~**% UCL[3]**
Temescal Creek, Reach 1b	198	34	119	9,200[2]	***374*** ~~**933**~~
Santa Ana Delhi Channel, Reach 2	448	110	63	12,590	***1231*** ~~**5,269**~~

UCL= Upper Confidence Level; ***75*** ~~**95**~~**% upper confidence level is the antidegradation target.**

[1] CDM, Inc. Technical Memorandum. Calculation of Antidegradation Targets for REC2 Only Freshwaters. ~~December 30, 2011~~. ***April 24, 2012.***
[2] A value of 1,800,000 cfu/100 mL, from the sample collected on 9/8/2007, was excluded as an outlier.
[3] Targets calculated for dry weather baseflow conditions only; do not apply to samples collected during wet weather conditions.

Use Attainability Analyses have also been completed for two tidal prisms (Santa Ana Delhi and Greenville-Banning channels). Antidegradation targets for these waters, though not freshwater bodies, are shown in Table 5-REC2 Only Targets-Other Waters, below.

Table 5-REC2 Only Targets- Other Waters[1]

REC2 Only Waterbody	Enterococcus Densities (cfu/100 mL)				
	***Geometric* Mean**	**Std. Dev.**	**N**	**Max. Observed**	***75%* ~~95%~~ UCL[2]**
Greenville-Banning Channel, Tidal Prism	***44*** ~~116~~	2041	***116***~~108~~	22,000	***133*** ~~660~~
Santa Ana-Delhi Channel, Tidal Prism	***439***~~1900~~	4852	65	28,600	***1320*** ~~6466~~

UCL= Upper Confidence Level; ***75%*** ~~**95%**~~ **upper confidence level is the antidegradation target**

[1] California Regional Water Quality Control Board, Santa Ana Region. Memorandum prepared by David Woelfel. Calculation of Antidegradation Targets for REC2 Only Waters-Tidal Prisms. ~~December 30, 2011~~ ***April 24, 2012.***

[2] ***Targets calculated for dry weather baseflow conditions only; do not apply to samples collected during wet weather conditions.***

15. Attachment 1 (p. 76) and Attachment 2 (p. 77) to Resolution No. R8-2012-0001, Revise the date for two references (#34 and 35) proposed to be added to Chapter 5 from December 30, 2011 to April 24, 2012.

(Revised) Table 5- REC 1-Tiers[x]

INLAND SURFACE STREAMS	TIER A, B, C, OR D	Rationale for Tier Assignment
LOWER SANTA ANA RIVER		
Santa Ana River		
Reach 1	D	Intermittent, low flow[1] limited access[2]
Reach 2	C	Low flows, limited access
Aliso Creek	D (N)	Natural condition, limited access
Carbon Canyon Creek	D	Low, intermittent flow, limited access
Santiago Creek Drainage		
Santiago Creek		
Reach 1	D	Intermittent flow
Reach 2 – Irvine Lake (see Lakes)		
Reach 3 -	D (N)	Low flow
Reach 4 -	D (N)	Low flow
Silverado Creek	D (N)	Low flow
Black Star Creek	D (N)	Low flow
Ladd Creek	D (N)	Low flow, limited access
San Diego Creek Drainage		
San Diego Creek		
Reach 1	C	Low flow, no observed REC1 use[3]; however fishing and children observed near water
Reach 2	D	Low flow, limited access
Tributaries: Bonita Creek, Serrano Creek, Peters Canyon Wash, Hicks Canyon Wash, Bee Canyon Wash, Borrego Canyon Wash, Agua Chinon Wash, Laguna Canyon Wash, Rattlesnake Canyon, Sand Canyon Wash and other tributaries to these creeks.	D	Low flow, limited access
San Gabriel River Drainage		
Coyote Creek	D	Low flow/access prohibited
Upper Santa Ana River		

[x] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

[1] Low, intermittent or ephemeral flows limit opportunity for REC1 use.

[2] Access limited or precluded by prohibitions by agency/party with jurisdiction and/or physical constraints (fencing and signage, riprap/concrete/natural steep slopes, impenetrable vegetation in/adjacent to the fresh water body, remote location, and the like).

[3] Photographic survey showed no REC1 use. (See CDM Recreation Use Survey Reports)

Table 5- REC 1-Tiers[X] (Continued)

INLAND SURFACE STREAMS	Tier A, B, C, OR D	Rationale for Tier Assignment
Reach 3	A	High use, wading and soaking, **Reference condition for Tier A waters**
Reach 4	B	Access restricted, some water contact REC use observed
Reach 5	D	Low/intermittent flow
Reach 6	B (N)	Natural condition, fishing stream
San Bernardino Mountain Streams		
Mill Creek Drainage		
Mill Creek		
Reach 1	A	High use, wading and soaking
Reach 2	A (N)	Natural condition, wading and soaking
Mountain Home Creek	D (N)	Natural condition, infrequent water contact REC use
Mountain Home Creek, East Fork	D (N)	Natural condition, remote
Monkeyface Creek	D (N)	Natural condition, remote/low flow, light to infrequent water contact REC use
Alger Creek	D (N)	
Falls Creek	D (N)	
Vivan Creek	D (N)	
High Creek	D (N)	
Other Tributaries: Lost, Oak, Cove, Green, Skinner, Hatchery, Rattlesnake, Slide, Snow, Bridal Veil, and Oak Creeks and tributaries to these Creeks	D (N)	
Bear Creek Drainage	C (N)	Natural condition, remote, light to infrequent water contact REC use. Fishing streams
Bear Creek		
Siberia Creek		
Slide Creek		
Johnson Creek		
All other tributaries to these Creeks		
Big Bear Lake Tributaries		
North Creek	D (N)	Natural condition/low flows, infrequent water contact REC activities
Metcalf Creek		
Grout Creek		
Rathbone Creek		
Meadow Creek		
Summit Creek		
Knickerbocker Creek /Reach 1	D	Access prohibited, low flow, no REC 1 use observed[4]
Reach 2	D (N)	Natural condition, low flow
Other tributaries: Minnelusa Canyon, Poligue, Red Ant Creeks and Tributaries to these Creeks	D (N)	Natural condition, low flow

[X] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

[4] Photographic survey for one year period showed no REC1 use.

Table 5- REC 1-Tiers[X] (Continued)

INLAND SURFACE STREAMS	Tier A, B, C, OR D	Rationale for Tier Assignment
Other Tributaries to Baldwin Lake: Sawmill, Green, and Caribou Canyon Creeks and other Tributaries to these Creeks	D (N)	Natural condition, low flow, remote
Other Streams Draining to Santa Ana River (Mountain Reaches)		
Cajon Canyon Creek	C (N)	Natural condition, low flow
City Creek	D (N)	Natural condition, low flow, limited access, remote
Devil Canyon Creek	D (N)	Natural condition, low flow, limited access, remote
East Twin and Strawberry Creeks	D (N)	Natural condition, low flow, limited access, remote
Waterman Canyon Creek	D (N)	Natural condition, low flow, limited access, remote
Fish Creek	D (N)	Natural condition, low flow, limited access, remote
Forsee Creek	D (N)	Natural condition, low flow, limited access, remote
Plunge Creek	D (N)	Natural condition, low flow, limited access, remote
Barton Creek	D (N)	Natural condition, low flow, limited access, remote
Bailey Creek	D (N)	Natural condition, low flow, limited access, remote
Kimbark Canyon, East Fork Kimbark Canyon, Ames Canyon and West Fork Cable Canyon Creeks	D (N)	Natural condition, low flow, limited access, remote
Valley Reaches of Above Streams	D (N)	Natural condition, low, flow, limited access
Other Tributaries (Mountain Reaches): Alder, Badger Canyon, Bledsoe Gulch, Borea Canyon, Breakneck, Cable Canyon, Cienaga Seca, Cold, Converse, Coon, Crystal, Deer, elder, Fredalba, Frog, Government, Hamilton, Heart Bar, Hemlock, Keller, Kilpecker, Little Mill, Little Sand Canyon, Lost, Meyer Canyon, Mile, Monroe Canyon, Oak, Rattlesnake, Round Cienaga, Sand, Schneider, Staircase, Warm Springs Canyon and Wild Horse Creeks, and other tributaries to those Creeks.	D (N)	Natural condition, low flow, limited access, remote
San Gabriel Mountain Streams		
San Antonio Creek	A (N)	Natural condition, wading and soaking in summer months

[X] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

Table 5- REC 1-Tiers[x] (Continued)

INLAND SURFACE STREAMS	Tier A, B, C, OR D	Rationale for Tier Assignment
Lytle Creek (Middle and North Forks)	A (N)	Natural condition, wading and soaking in summer months, fishing streams
Tributaries to Lytle Creek (South Fork and Coldwater Canyon Creek)	D (N)	Natural condition, low flow
Day Canyon Creek	D (N)	Natural condition, low flow, remote, limited access
East Etiwanda Creek	D (N)	Natural condition, low flow, limited access, remote
Valley Reaches of Above Streams	D (N)	Natural condition, low flow, limited access
Cucamonga Creek / Reach 2 (Mountain Reach) – 23rd St. in Upland to headwaters	B (N)	Natural condition, limited access
Mill Creek (Prado Area)	C	limited access, low flow
Other Tributaries (Mountain Reaches) San Sevaine, Deer Canyon, Duncan Canyon, Henderson Canyon, Bull, Fan, Demens, Thorpe, Angalls, Telegraph Canyon, Stoddard Canyon, Icehouse Canyon, Cascade Canyon, Cedar, Falling Rock, Kerkhoff, and Cherry Creeks and other Tributaries to these Creeks	C (N)	Natural condition, low flow, limited access, most creeks in remote areas
Valley Reaches of Above Streams	D	Low flow, limited access
San Timoteo Creek		
Reach 1A – Santa Ana River Confluence to Barton Road	D	Low flow, limited access
Reach 1B – Barton Road to Gage at San Timoteo Canyon Rd.	D	Low flow, limited access
Reach 2 – gage at San Timoteo to confluence with Yucaipa Creek	C	Low flow, limited access
Reach 3 – Confluence with Yucaipa Creek to confluence with little San Gorgonio and Noble Creeks	C	Low flow, limited access
Oak Glen, Potato Canyon, and Birch Creeks	D (N)	Natural condition, low flow, limited access
Little San Gorgonio Creeks	C (N)	Natural condition, low flow, limited access, remote
Yucaipa Creek	D	Low flow, limited access
Other Tributaries to these Creeks-Valley Reaches	D	Low flow, limited access

[x] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

Table 5- REC 1-Tiers[x] (Continued)

INLAND SURFACE STREAMS	Tier A, B, C, OR D	Rationale for Tier Assignment
Other Tributaries to these Creeks (Mountain Reaches)	C (N)	Natural condition
Anza Park Drain	C	Low flow
Sunnyslope Channel	C	Low flow, limited access, Santa Ana sucker habitat
Tequesquite Arroyo (Sycamore Creek)	C	Low flow, limited access
Prado Area Streams		
Chino Creek		
Reach 1A – Santa Ana River confluence to downstream of confluence with Mill Creek (Prado Area)	D	Low flow, limited access
Reach 1B – Confluence with Mill Creek (Prado Area) to beginning of concrete lined channel south of Los Serranos Rd.	C	Low flow, limited access
Reach 2 – Beginning of concrete-lined channel south of Los Serranos Rd. to confluence with San Antonio Creek	D	Low flow, limited access
Temescal Creek		
Reach 2 – 1400 ft. upstream of Magnolia Ave. to Lee Lake	D	Low flow, limited access
Reach 3 – Lee Lakes (see Lakes)		
Reach 4 – Lee Lake to Mid-section Line of Section 17	D	Low flow, limited access
Reach 5 – Mid-section line of Section 17 to Elsinore Groundwater Management Zone Boundary	D	Low flow, limited access
Reach 6 – Elsinore Groundwater Management Zone Boundary to Lake Elsinore Outlet	D	Low flow
Coldwater Canyon Creek	C (N)	Natural condition, limited access, remote
Bedford Canyon Creek	C (N)	Natural condition, limited access, remote
Dawson Canyon Creek	C (N)	Natural condition, limited access, remote

[x] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

Table 5- REC 1-Tiers[x] (Continued)

INLAND SURFACE STREAMS	Tier A, B, C, OR D	Rationale for Tier Assignment
Other Tributaries to these Creeks	C (N)	Natural condition, limited access
San Jacinto River		
Reach 1 – Lake Elsinore to Canyon Lake	C	Low flow
Reach 2 – Canyon Lake (see Lakes)		
Reach 3 – Canyon Lake to Nuevo Road	D	Low / ephemeral flow, limited access
Reach 4 – Nuevo Road to North-South Mid-Section Line, T4S/R1W-S8	D	Low / ephemeral flow, limited access
Reach 5 – North-South Mid-Section Line, T4S/R1W-S8, to Confluence with Poppet Creek	D	Low / ephemeral flow, limited access
Reach 6 – Poppet Creek to Cranston Bridge	C	Low flow
Reach 7 – Cranston Bridge to Lake Hemet	C (N)	Natural condition, limited access, remote
Bautista Creek - Headwaters to Debris Dam	D (N)	Low flow, agricultural lands in lower section
Strawberry Creek and San Jacinto River, North Fork	C (N)	Low flow, limited access, some areas remote
Fuller Mill Creek	C (N)	Low flow, limited access, remote
Stone Creek	C (N)	Low flow, limited access, remote
Other Tributaries: Logan, Black Mountain, Juaro Canyon, Indian, Herkey, Poppet, and Potrero Creeks and other Tribuarties to these Creeks	D (N)	Low flow, limited access, remote
Salt Creek	D	Low / ephemeral flow
Goodhart Canyon Creek, St. John's Canyon, and Cactus Valley Creeks	D	Low / ephemeral flow, remote
Lakes and Reservoirs		
Baldwin Lake	D (N)	Ephemeral / intermittent
Big Bear Lake	A	Designated swimming areas
Erwin Lake	D	Ephemeral / intermittent
Evans Lake	D	Swimming prohibited by City Park officials
Jenks Lake	B (N)	Mt. fishing lake, REC body contact activities discouraged
Lee Lake	C	Swimming prohibited, float tube fishing allowed
Lake Mathews	D	Drinking water reservoir, access prohibited

[x] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.

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Table 5- REC 1-Tiers[X] (Continued)

LAKES AND RESERVOIRS	Tier A, B, C, OR D	Rationale for Tier Assignment
Mockingbird Reservoir	D	Limited access/ fenced and locked
Lake Norconian	D	Access prohibited by U.S. Navy, no water contact REC activities allowed
Anaheim Lake	C	Fishing, GW recharge basin, water contact REC activities prohibited
Irvine Lake	B	Fishing Lake, water contact REC activities prohibited. Float tube fishing allowed.
Peters Canyon, Rattlesnake, Sand Canyon and Siphon Reservoirs	D	Water contact REC activities and/or access prohibited
Canyon Lake	A	Water contact activities allowed
Lake Elsinore	A	Water contact activities allowed
Lake Fulmor	C	Fishing allowed
Lake Hemet	C	Fishing Lake, float tube fishing and water contact REC activities prohibited.
Mystic Lake	C	Ephemeral lake, water fowl hunting allowed
Lake Perris	A	Water contact activities allowed, designated swimming areas
WETLANDS (INLAND)		
San Joaquin Freshwater Marsh	D	Access prohibited
Shay Meadows	D (N)	Natural conditions, low flows
Stanfield Marsh	D	Access prohibited
Prado Basin Management Zone	C	Access prohibited, thick vegetation limits accessibility
San Jacinto Wildlife Preserve	C	Hunting ponds filled with treated effluent
Glen Helen	C	Low flow, County Park

[X] Tiers based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986" and "Water Quality Standards for Coastal and Great Lakes Recreation Waters, Final Rule" (40 CFR 131.41), November 2004. Natural (N) refers to waters, typically in largely natural condition, that are expected to have good ambient bacterial quality. N waters will be assigned SSMs based on the 75% confidence level, like Tier A waters, even if designated Tier B, C or D based on the intensity of REC1 use.