

# Strawman Summary:

## Recommended Revisions to Santa Ana Region's Basin Plan for Recreational Use Classifications and Related Water Quality Objectives

### Background

In mid-2000 U.S. EPA encouraged the Santa Ana Regional Water Quality Control Board to "update bacteria indicator organism objectives for REC1 and REC2 beneficial uses" at the next triennial review.<sup>1</sup> Specifically, EPA recommended using *E. coli* and/or Enterococci as these bacteria were "better correlated to health effects related to water-contact recreation."

At the next triennial review (2002), the Regional Board received significant public comment on the issue and determined that updating the bacteria indicator organism objectives in the Basin Plan should be a high priority. Stakeholders strongly recommended that the Regional Board should conduct a comprehensive scientific and technical review of all water quality standards in the watershed. In late 2002, a Task Force was formed to undertake and fund such a review for pathogen indicator objectives. The Santa Ana Watershed Project Authority (SAWPA) is serving as the Task Force administrator.

All interested stakeholders were invited to join the Task Force and participation was not conditioned on providing any financial contribution. Representatives from many of the major water and wastewater agencies, stormwater management agencies, environmental interest groups, the Regional Board and U.S. EPA have been meeting regularly for four years to develop appropriate recommendations for updating recreational water quality standards for freshwaters in the Santa Ana Basin Plan.

From the outset, all Task Force participants agreed to seek only solutions that comport with state and federal regulations. These requirements were summarized into a set of stipulated conditions that governed the discussion of alternatives (copy attached as Appendix A). In addition, considerable emphasis was placed on following U.S. EPA's recommended water quality criteria for bacteria<sup>2</sup> and other related implementation guidance even where such guidance was not yet final.<sup>3</sup> The latter was particularly helpful in developing a systematic approach to distinguish between primary contact recreational uses (REC1) and secondary contact recreational uses (REC2).

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<sup>1</sup> See U.S. EPA-Region IX's letter to the State Water Resources Control Board dated May 30, 2000, pg. 8

<sup>2</sup> U.S. EPA. Ambient Water Quality Criteria for Bacteria - 1986. (EPA 440/5-84-002)

<sup>3</sup> U.S. EPA. Implementation Guidance for Ambient Water Quality Criteria for Bacteria. May, 2002 Draft (EPA-823-B-02-003) and November, 2003 Draft (EPA-823-B-03-XXX)

Throughout the process, the Task Force has been seeking to develop a pathogen control strategy that would not only meet statutory and regulatory water quality standards requirements but that would also encourage finite public resources to be invested where the greatest public health benefit could be gained. The goal is to produce a regulatory approach designed to provide the highest level of water quality protection where people are actually coming into contact with the water. Such an approach would allow planning agencies to implement more cost-effective regional BMP solutions while continuing to protect downstream uses.

The Task Force is planning to recommend the following Basin Plan amendments for consideration by the Santa Ana Regional Water Quality Control Board in 2008:

### Recommendation #1

The definition of "Contact Recreation (REC1)" should be revised to read:<sup>4</sup>

"REC1 - Primary Contact Recreation: waters used for recreational activities involving frequent and prolonged water contact, especially by children, where ingestion of water is likely. Examples of Primary Contact Recreation include, but are not limited to: swimming, water-skiing, surfing, whitewater rafting, float-tubing, bathing in natural hot springs, skin and scuba diving. All defined waters of the U.S. are presumed to be capable of supporting primary contact recreation unless a Use Attainability Analysis (UAA) demonstrates that this use has not been attained and is not attainable and the Basin Plan is revised accordingly."

Rationale:

U.S. EPA's recommended water quality criteria for bacteria were developed to protect Primary Contact Recreation. Therefore, in order to avoid any confusion when implementing the bacteria criteria, the Task Force recommends that the definition of REC1 conform as closely as possible to EPA's description of Primary Contact Recreation.

Representatives from U.S. EPA informed the Task Force that the designated use described as "REC1" in California is functionally-equivalent to the beneficial use described as "Primary Contact Recreation" in EPA's published guidance. Therefore, the Task Force used that guidance to define REC1 more accurately.

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<sup>4</sup> For comparison, the current definition of REC1 in the Santa Ana Region Basin Plan reads as follows:  
*Water Contact Recreation (REC1\*) waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.*

One important addition to the REC1 definition is the acknowledgement that, per federal regulations, all surface waters are initially assumed to be capable of supporting primary contact recreation and should be so designated.<sup>5</sup> If state authorities believe such a designation is inappropriate because recreational uses cannot be achieved in certain waterbodies, then such uses can be downgraded or deleted only after performing a Use Attainability Analysis (UAA). The Regional Board must amend the Basin Plan, through a formal public process, in order to revise water quality standards. The State Water Resources Control Board, the California Office of Administrative Law, and the U.S. EPA must also approve all Basin Plan amendments.

The only substantive change between the current REC1 definition and the proposed REC1 definition is that "fishing" was deleted from the list of example activities identified as primary contact recreation. This was done in recognition of the fact that different types of fishing activities incur different risks of immersion and ingestion. For example, fishing in waders or from float tubes, where the angler is in direct and prolonged contact with the water, would continue to be considered primary contact recreation (REC1). However, fishing from the shoreline or from boats involves very little direct water contact and is more likely to be protected as a REC2 activity. Since the list of example activities is not exclusive, it was decided to omit "fishing" altogether rather than try to specify all of the different variants that may occur. It is not the act of fishing, per se, that determines whether an activity is REC1 but, rather, the degree to which the anglers come into contact with the water and the risk that such contact will lead to ingestion of water. Federal guidance recommends that fishing activities be protected as "Secondary Contact" recreation.

## **Recommendation #2**

The definition of "Non-Contact Recreation - REC2" should not be changed. The current definition reads:

"Non-contact Water Recreation (REC2) waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities."

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<sup>5</sup> See 40 CFR 131.10(j)

Rationale:

The Task Force accepts EPA's interpretation that the REC2 designated use is functionally-equivalent to the definition of "secondary contact recreation" identified in federal guidance. That guidance indicates that incidental and infrequent partial body contact need not be considered primary contact recreation if the ingestion of water is unlikely. The list of activities identified as examples of REC2-type behavior is consistent with EPA's description of secondary contact recreation. Therefore, no revision to the Basin Plan's current definition of REC2 is necessary.

<b>Recommendation #3</b>
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The section entitled "Beneficial Uses" on page 3-1 of the Basin Plan should be revised to add the following text:

"The Regional Board will consider a suite of factors when determining how best to classify a waterbody to protect recreational uses. The factors may include but are not limited to: flow conditions, ease of access, adjacent land uses, proximity to parks and/or residences, channel morphology and modifications, naturally-occurring sources of pollution or aesthetic conditions of the waterbody, legal restrictions, public safety concerns, the probable risk of ingesting water, parks and recreation plans, and the type of recreational activities that are occurring or have occurred in the waterbody since November 28, 1975 (i.e. 'existing uses'). Where the Regional Board determines, through a Use Attainability Analysis, that a waterbody cannot support any recreational uses (REC1 or REC2), that stream segment will be designated REC-X."

Rationale:

The purpose of the additional text is to identify the factors that should be considered and evaluated by those intending to conduct a Use-Attainability Analysis (UAA). The list of factors was derived directly from U.S. EPA's draft implementation guidance for bacteria standards<sup>6</sup> and the State Board's "precedential decision" regarding recreational use designations in Ballona Creek.<sup>7</sup> Any factor the Regional Board relies on to delete or downgrade a REC1 use must also conform to one or more of the six UAA factors specified in federal regulations.<sup>8</sup> By law, existing uses may not be downgraded or deleted. In addition, where water quality is better than necessary to protect designated uses, that existing water quality must continue to be preserved except under limited circumstances identified in state and federal antidegradation policies.

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<sup>6</sup> U.S. EPA. Implementation Guidance for Ambient Water Quality Criteria for Bacteria. May, 2002 Draft (EPA-823-B-02-003) and November, 2003 Draft (EPA-823-B-03-XXX)

<sup>7</sup> California State Water Resources Control Board Order No. WQO-2005-0004 (January 20, 2005)

<sup>8</sup> See 40 CFR 131.10(g); a more detailed explanation of how these factors may be evaluated and applied is shown in Appendix B.

The REC-X designation is intended to differentiate between waterbodies that have undergone a formal UAA and Regional Board review and approval as opposed to situations where a waterbody has not yet been designated REC1 or REC2. In the latter case, such waters are presumed to be capable of supporting all recreational uses until the Regional Board declares otherwise on the basis of a UAA and after completing the necessary public hearing process. In addition, any change to water quality standards requires approval by the State Water Resources Control Board, the California Office of Administrative Law and the U.S. Environmental Protection Agency.

#### Recommendation #4

Chapter 4 ("Water Quality Objectives") of the Basin Plan should be revised to add the following narrative water quality objective for pathogens for all surface waters designated REC1 or REC2:

"Waste discharges shall not cause or contribute to excessive risk of illness from microorganisms pathogenic to human beings."

Bacteria, viruses, protozoa and parasites occur naturally in the environment and may also be present in waste discharges. Some of these organisms, particularly those that originate from human sources, are pathogenic, that is, they may cause illness to exposed persons. The presence of these pathogens in waterbodies may impair recreational uses and/or municipal water supplies. Direct measurement of all pathogens is impractical because standard methods have not yet been approved, nor have water quality criteria been established for each and every microorganism that may be harmful. Therefore, EPA recommends using surrogate indicators, such as *E. coli* concentrations, to demonstrate that water quality is adequate to protect human health against an excessive risk of illness to those making frequent and/or prolonged contact with the water where the risk of ingesting the water is reasonably possible.

Over time, the recommended surrogate indicator has changed from total and fecal coliform to *E. coli* and Enterococci. On-going epidemiological research may demonstrate that there are better direct or surrogate indicators available.<sup>9</sup> Adopting a narrative objective for pathogens, in addition to numeric water quality objectives for surrogate indicators, will provide greater regulatory support and flexibility to specify permit limitations and monitoring requirements (e.g. different water quality monitoring technologies).

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<sup>9</sup> See, for example, U.S. EPA. Report of the Experts Scientific Workshop on Critical Research Needs for the Development of New or Revised Recreational Water Quality Criteria. June 15, 2007 (EPA 823-R-07-006)

## Recommendation #5

The Inland Surface Waters section of Chapter 4 ("Water Quality Objectives") of the Basin Plan should be revised to add the following numeric water quality objectives for pathogen indicator bacteria:

"Pathogen indicator concentrations shall not exceed the values specified in Table 1(below) as a result of controllable water quality factors unless it is demonstrated to the Regional Board's satisfaction that the elevated indicator concentrations do not result in excessive risk of illness (i.e. greater than 8 gastrointestinal illnesses per 1000 swimmers) among people recreating in or near the water.

**Table 1: Pathogen Indicator Bacteria Objectives for Fresh Waters**

Recreational Use Designation	Pathogen Indicator Objective
REC1 and REC2	<126 <i>E. coli</i> /100 ml (30-day geometric mean of at least 5 samples)
REC2-only	<2000 fecal coliform/100 ml (30-day average of at least 5 samples) and <10% of samples >4000 fecal coliform/ 100ml
The water quality objectives specified in Table 1 do not apply when designated uses are temporarily suspended due to unsafe flow conditions in the waterbody.	

Rationale:

The pathogen indicator objective of <126 *E. coli* (expressed as the geometric mean of at least five samples collected over a 30-day period) is recommended in U.S. EPA's Ambient Water Quality Criteria for Bacteria.<sup>10</sup> According to the tables and equations published in federal guidance, an *E. coli* objective of 126 cfu/100ml provides a level of risk protection equal to 8 illnesses in every 1,000 swimmers (0.8%).<sup>11</sup> This recommended change is limited to inland surface waters (freshwaters) only and does not apply to marine waters including enclosed bays, estuaries or other ocean waters.

The Task Force recommends that the single sample maxima (SSMs) described in EPA guidance be applied not as water quality objectives but, rather, as triggers to perform additional sampling. See Recommendation #10 for additional detail.

The term "average" in the REC2-only objective should be clarified. See Recommendation #7 for additional detail.

<sup>10</sup> U.S. EPA. Ambient Water Quality Criteria for Bacteria - 1986. (EPA 440/5-84-002)

<sup>11</sup> U.S. EPA. Implementation Guidance for Ambient Water Quality Criteria for Bacteria. May, 2002 Draft (EPA-823-B-02-003) and November, 2003 Draft (EPA-823-B-03-XXX)

## Recommendation #6

Chapter 4 ("Water Quality Objectives") of the Basin Plan should be revised to delete the current numeric water quality objective for fecal coliform bacteria in Inland Surface Waters designated REC1.

Consistent with EPA guidance and recommendations, the current water quality objective for pathogen indicators, expressed in fecal coliform units, is obsolete and should be updated. For freshwaters designated REC1, *E. coli* should replace fecal coliform as a numeric water quality objective for pathogen indicator bacteria (see Recommendation #5). The TMDLs developed to address pathogen impairment in the Santa Ana region already include a numeric target for *E. coli* and were previously approved by U.S. EPA.<sup>12</sup>

## Recommendation #7

The current fecal coliform objective established to protect beneficial uses designated REC2-only should not be changed. However, some clarification from U.S. EPA is required regarding the most appropriate method for calculating an "average" for bacterial data.

### Rationale:

U.S. EPA has acknowledged that there are insufficient useful data available to calculate or recommend an *E. coli* or Enterococci criteria to protect secondary contact recreation.<sup>13</sup> Therefore, states have wide discretion to adopt their own water quality criteria for these waterbodies.

Some states have elected to develop secondary contact criteria by multiplying the primary contact standard by a factor of five (e.g.  $126 \times 5 = 630$  *E. coli* /100 ml). U.S. EPA guidance does not formally recommend this procedure but has approved it in some states. The Task Force recommends against this approach because there is no scientific or technical basis for selecting the multiplier factor.

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<sup>12</sup> Santa Ana Regional Water Quality Control Board Resolution No. RB8-2005-0001. TMDL for Bacterial Indicators in the Middle Santa Ana River Watershed Waterbodies (August 26, 2005); Approved by U.S. EPA on May 16, 2007.

<sup>13</sup> U.S. EPA. Implementation Guidance for Ambient Water Quality Criteria for Bacteria. May, 2002 Draft (EPA-823-B-02-003) and November, 2003 Draft (EPA-823-B-03-XXX)

The current Basin Plan already contains numeric water quality objectives to protect secondary contact recreation (see Table 1 above). Therefore, the Task Force recommends that the current fecal coliform objectives for waterbodies designated "REC2-only" remain unchanged until such time as U.S. EPA publishes new water quality criteria for Secondary Contact Recreation. However, where a waterbody is designated for both REC1 and REC2, the more stringent *E. coli* objectives shall apply in order to protect both uses.

In the 1986 water quality criteria for bacteria, EPA recommends expressing the Primary Contact criteria as a "log mean" (aka geomean) and the Secondary Contact criteria as an "average."<sup>14</sup> Traditionally, the word "average" usually connotes an arithmetic mean. However, since bacteria tend to be log-normally distributed, calculating an arithmetic mean may not be the most appropriate averaging procedure.<sup>15</sup> In more recent draft guidance, EPA now recommends expressing Secondary Contract criteria as a "geometric mean."<sup>16</sup>

Some people claim that calculating the average based on a log-mean ("geomean") rather than an arithmetic mean constitutes a change in the water quality objective. Others believe that geometric means and arithmetic means are both considered "averages," however, the former is more appropriate for log-normally distributed data such as bacteria concentrations.

The historical record is unclear as to how the term "log-mean" was suggested for the Primary Contact criteria while the word "average" was selected for the Secondary Contact criteria. It is uncertain whether this was a deliberate choice intended to recommend different methods of calculation or not. Nor is it clear why, if the Secondary Contact criteria as originally derived by multiplying the Primary Contact criteria by 5x or 10x, the units should change. Therefore, the Task Force seeks some clarification from EPA:

- 1) What is the most mathematically correct procedure for calculating the "average" for fecal coliform in order to assess compliance with the Secondary Contact criteria if the underlying data are log-normally distributed?
- 2) If a footnote is added to the Basin Plan to describe the most mathematically correct procedure for calculating the fecal coliform average, does that constitute a revision of water quality standards or merely a clarification of an existing water quality objective in order to avoid confusion and misinterpretation during the implementation process?

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<sup>14</sup> U.S. EPA. Ambient Water Quality Criteria for Bacteria - 1986. (EPA 440/5-84-002)

<sup>15</sup> U.S. EPA. Guidance for Data Quality Assessment: Practical Methods for Data Analysis. EPA QA/G-9 – QA00 Update (EPA 600/R-96/084) July, 2000. See, also, U.S. EPA. Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) March, 1991 for recommendations regarding transforming log-normally distributed data.

<sup>16</sup> U.S. EPA. Implementation Guidance for Ambient Water Quality Criteria for Bacteria. November, 2003 Draft (EPA-823-B-03-XXX)

## Recommendation #8

The current total coliform objective established to protect surface freshwaters designated MUN (municipal water supply) should be deleted. However, the current total coliform objective for groundwaters designated MUN should remain unchanged in the Basin Plan. The uses presently designated MUN would also remain unchanged.

### Rationale:

The current total coliform objective was adopted in the mid-70's at a time when water purveyors could divert surface waters to municipal use without additional treatment. In late 1998, U.S. EPA adopted Interim Enhanced Surface Water Treatment requirements into the National Primary Drinking Water Regulations.<sup>17</sup> Designed to improve control of microbial pathogens in drinking water, the new regulations require surface water to meet filtration and disinfection standards before being served to the public. Consequently, the numeric coliform objective for surface waters is obsolete and unnecessary.

Many of the surface waters in the Santa Ana region were exempted from the MUN designation under the State Board's Sources of Drinking Water Policy in 1989.<sup>18</sup> Most other surface waters (primarily small mountain creeks or large lakes and reservoirs) are also designated REC1 and would continue to be protected by the numeric *E. coli* objective in lieu of the total coliform criteria. In addition, should more protection be required, the Regional Board may rely on the narrative pathogen objective (described in Recommendation #4) to impose the necessary restrictions.

Most NPDES permits and Waste Discharge Requirements (WDRs) contain effluent limits intended to protect instream surface receiving water beneficial uses and affected groundwater supplies from microbial contamination. Adoption of new water quality objectives to protect recreational uses is not intended to alter the level of wastewater treatment required to assure continuing compliance with permit requirements based on Title-22 of the California Code of Regulations. The effluent limits for tertiary treatment will continue to be governed by the need to provide "adequate disinfection" and by anti-degradation and anti-backsliding regulations. Nothing in any of the previous recommendations should be construed to change the level of wastewater treatment required to comply with Title-22 of the California Code of Regulations related to the discharge and reuse of reclaimed water.

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<sup>17</sup> 63 Fed. Reg. 241, pg. 69478 (December 16, 1998)

<sup>18</sup> California State Water Resources Control Board Resolution No. 88-63 and Santa Ana Regional Water Quality Control Board Res. No. 89-42.

## Recommendation #9

A footnote should be added to all freshwater rivers and streams designated as REC1 or REC2 in Table 3-1 of the Basin Plan; said footnote to state:

"The REC1 and REC2 use designations are temporarily suspended when high flows, caused by stormwater runoff, preclude safe recreation in the stream channel. The temporary suspension is automatically terminated when flow conditions have returned to a safe level."

The footnote would not be applied to lakes, reservoirs or ocean waters designated REC1 and/or REC2. The Regional Board will define what constitutes unsafe flow conditions using one or more of the following thresholds: 1) the U.S. Geological Survey's safe sampling standard, 2) the Swift Water Rescue safe access standard, 3) the Los Angeles Regional Water Quality Control Board's use suspension standard for temporary high flows, 4) or other objective indicators.

### Rationale:

In the Santa Ana region, most dry weather stream flows lack the volume and velocity necessary to pose a physical threat to swimmers and waders. However, when it rains, there is considerable risk of flash flooding. At such times, it is unsafe to be in the local rivers and creeks. The REC1 and REC2 uses are unattainable for reasons related to extreme flow conditions<sup>19</sup> and hydrologic modifications<sup>20</sup> rather than bacteria concentrations in the water.

In 2003, the Los Angeles Regional Water Quality Control Board adopted similar provisions in its Basin Plan.<sup>21</sup> The Task Force recommendation relies heavily on this precedent but does not limit application solely to "engineered channels" as the Los Angeles Board did. The Task Force recommends that the REC1/REC2 uses be temporarily suspended whenever and wherever the volume and velocity of flow is sufficient to preclude safe recreational activities regardless of whether the channel has been re-engineered for flood control purposes or not. It should be noted that nearly every valley stream segment throughout the Santa Ana watershed has been modified to some degree to facilitate urban stormwater flows and/or prevent erosion.

## Recommendation #10

The Implementation Section (Chapter 5) of the Basin Plan should be revised to indicate that Single Sample Maxima (SSMs) will be used to trigger additional water quality monitoring where necessary.

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<sup>19</sup> 40 CFR 131.10(g)(2)

<sup>20</sup> 40 CFR 131.10(g)(4)

<sup>21</sup> The provisions were approved by the SWRCB as Resolution No. 2003-71 on July 10, 2003.

Rationale:

Recent EPA guidance indicates SSMs were developed as surrogate assessment tools to be used when there were inadequate data to calculate an appropriate geometric mean. The SSMs were not intended to serve as recommended water quality criteria pursuant to Section 304(a) of the Clean Water Act.<sup>22</sup> Therefore, the Task Force recommends that existing water quality monitoring programs<sup>23</sup> be reviewed and enhanced, where necessary, to ensure there are adequate data to calculate a proper geomean at relevant points of compliance.

Where data from individual samples exceeds EPA's recommended SSMs, the Regional Board may recommend or require more sampling if representative data are not already available from another proximate location. Comprehensive monitoring will provide superior information for evaluating use attainment compared to reliance on single sample maxima to assess potential impairment.

**Recommendation #11**

Reclassification of the section of Temescal Creek from the Cota Street crossing in Corona upstream to its confluence with the Arlington drain. Final recommendation dependent on results of an on-going Use-Attainability Analysis.



<sup>22</sup> U.S. EPA – Office of Water. Water Quality Standards for Coastal Recreation Waters: Using Single Sample Maximum Values in State Water Quality Standards. EPA-823-F-06-013. August, 2006.

<sup>23</sup> There are many on-going water quality monitoring programs in the Santa Ana River watershed designed to quantify bacterial concentrations in lakes and streams. These include routine monitoring performed by MS4 permittees, regular monitoring required to implement approved TMDLs, and other monitoring conducted as part of various special studies.

### **Recommendation #12**

Reclassification of the section of Temescal Creek from its confluence with the Arlington drain upstream to where the vertical, concrete-lined channel reverts to more natural conditions (approx. Sherborn St. in Corona). Final recommendation dependent on results of an on-going Use-Attainability Analysis.



### **Recommendation #13**

Reclassification of the section of Cucamonga Creek from the crossing at Hellman Ave. upstream to its confluence with Deer Creek channel. Final recommendation dependent on results of an on-going Use-Attainability Analysis.



### **Recommendation #14**

Classification of the section of the Greenville-Banning Channel from its confluence with the Santa Ana River just below Victoria Ave. upstream to where the channel crosses under the 405 Freeway. Final recommendation dependent on results of an on-going Use-Attainability Analysis.



### **Recommendation #15**

Classification of the section of Santa Ana Delhi channel from its confluence with upper Newport Bay to the point where it goes underground at Flower St. Final recommendation dependent on results of an on-going Use-Attainability Analysis.



## Recommendation #16

Classification of the section of Santa Ana Delhi channel from the crossing at Sunflower Ave. upstream to the railroad crossing just north of MacArthur Blvd. Final recommendation dependent on results of an on-going Use-Attainability Analysis.



Note: The Santa Ana Delhi channel is not presently identified as a separate waterbody in the Basin Plan. If it is added to the Basin Plan, it will be necessary to designate other existing or potential beneficial uses that may apply to each segment.

## **Appendix A:**

### **Regulations Governing Revisions to Water Quality Standards**

- 1) Appropriate beneficial uses must be designated. (40 CFR 131.10a)
- 2) Uses must be designated where the use is actually being attained. (40 CFR 131.10i)
- 3) Water quality objectives must protect the designated uses. (40 CFR 131.11a)
- 4) Water quality objectives must protect the most sensitive use. (40 CFR 131.11a)
- 5) Existing uses may not be downgraded or deleted. (40 CFR 131.10-h-1)
- 6) The level of water quality necessary to protect existing uses shall be maintained. (40 CFR 131.12a)
- 7) Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they designated. (40 CFR 131.3e)
- 8) REC1 and Aquatic Life Habitat (COLD and/or WARM) are presumed to be attainable (40 CFR 131.10d)
- 9) Failure to designate REC1 and COLD or WARM requires a UAA (40 CFR 131.10j)
- 10) Water quality objectives must protect downstream beneficial uses (40 CFR 131.10b)
- 11) Deleting or downgrading a designated use requires a UAA (40 CFR 131.10j)
- 12) Subcategorizing with less stringent water quality criteria requires a UAA (40 CFR 131.10j)
- 13) Uses are deemed attainable, and may not be removed, if the use can be achieved with cost-effective and reasonable best management practices for nonpoint source control. (40 CFR 131.10d and 40 CFR 131.10-h-2)
- 14) May delete, downgrade or subcategorize a use only under certain conditions (40 CFR 131.10g)
- 15) Seasonal uses are allowed. (40 CFR 131.10f)
- 16) EPA's recommended water quality criteria are presumed to be protective for the associated designated uses. (40 CFR 131.11)
- 17) States may adopt and implement mixing zones, variances and low flow policies (40 CFR 131.13)
- 18) Regional Board must consider factors identified in Section CWC §13241, including economics, when adopting water quality objectives to protect beneficial uses.
- 19) Undesignated waterbodies have the same beneficial uses as the designated waterbodies to which they are tributary (SAR Basin Plan, pg. 3-5)
- 20) Where current water quality is better than necessary to protect designated uses that existing higher quality must be preserved unless allowing lower quality is demonstrated to continue to protect existing uses and would provide "maximum benefit to the people of California." (SWRCB Res. No. 68-16)

## Appendix B: Evaluation Factors for Use Attainability Analyses (UAA)

UAA Factors (40 CFR 131.10[g]1-6)	Related Data and Evidence
"1) Naturally occurring pollutant concentrations prevent attainment of the use."	1) Characterize pathogen indicator concentrations from natural sources 2) Characterize other natural pollutants that may inhibit recreation (e.g. algae, sulfides, turbidity, etc.)
"2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of discharges without violating State water conservation requirements to enable uses to be met."	1) Characterize high flows that may produce unsafe recreational conditions 2) Characterize low flows that may inhibit full body contact (insufficient depth or volume to make ingestion reasonably possible)
"3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place."	1) Characterize water quality, determine compliance status, and identify sources. 2) Characterize relationship between the necessity for urban flood control and the impact on aquatic ecosystems if the only reliable means of compliance is to intercept and divert flows out of such channels.
"4) Dams, diversions or other types of hydrologic modifications preclude attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modifications in a way that would result in attainment of the use."	1) Characterize flood control modifications that severely restrict recreational access (e.g. vertical walled, fenced, concrete-lined channels).
"5) Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses."	N/A: this UAA factor applies only when evaluating the attainability of aquatic life uses. It does not apply when assessing the attainability of recreational uses
"6) Controls more stringent than those required by Sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact."	1) Characterize existing water quality and describe compliance options. Evaluate cost of restoring and maintaining consistent compliance. <i>Note: this is a Socioeconomic Impact Analysis not a traditional Cost-Benefit Analysis.</i>

In all cases, the level of water quality necessary to protect "existing uses" must be maintained. Downgrading or deleting uses does not relieve dischargers of the responsibility to implement Best Management Practices (BMPs).