

**California Regional Water Quality Control Board
Santa Ana Region**

March 11, 2016

Item: 10

Subject: Consideration of Approval of the Santa Ana River Watershed Bacteria Monitoring Program Submitted in Compliance with the Middle Santa Ana River Watershed Bacterial Indicator TMDLs and the Revision to Recreational Standards Basin Plan Amendment - Resolution No. R8-2016-0022

BACKGROUND

On August 26, 2005, the Regional Board adopted Resolution No. R8-2005-0001, amending the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to incorporate Bacterial Indicator Total Maximum Daily Loads (TMDLs) for Middle Santa Ana River Watershed (MSAR) waterbodies. Waterbodies addressed by the TMDLs include: Santa Ana River, Reach 3; Chino Creek, Reaches 1 and 2; Cucamonga Creek, Reach 1; Mill Creek (Prado area); and Prado Park Lake. The TMDLs were approved by the State Water Resources Control Board on May 15, 2006, by the Office of Administrative Law on September 1, 2006, and by the US Environmental Protection Agency (USEPA) on May 16, 2007. The TMDLs, developed pursuant to Clean Water Act section 303(d), address MSAR watershed waterbodies placed on the list of impaired waters due to excessive bacterial indicator densities.

In order to achieve compliance with the TMDLs and the associated numeric targets, Waste Load Allocations (WLAs) for point source dischargers and Load Allocations (LAs) for non-point source dischargers, the MSAR TMDLs required dischargers to develop and implement bacterial indicator reduction plans and a watershed-wide monitoring program. The TMDL monitoring program was approved by the Regional Board on June 29, 2007 (Resolution No. R8-2007-0046). The monitoring plan associated with the MSAR Bacterial TMDLs has been on-going since Regional Board approval and was revised through the Regional Board approval of implementation plan updates in 2008 (Resolution No. R8-2008-0044), 2012 (Resolution No. R8-2012-0015 and Resolution No. R8-2012-016) and 2014 (Resolution No. R8-2014-0043).

On June 15, 2012, the Regional Board adopted Resolution No. R8-2012-0001, amending the Basin Plan to update recreational standards for inland surface waters, including: new bacteria quality objectives for water contact recreation (REC1); removal of bacteria quality objectives for non-contact recreation (REC2); changes to REC1 and REC2 beneficial use designations for certain waters based on Use Attainability Analyses (UAAs); addition of antidegradation bacteria targets for waters designated REC2 only, based on UAAs; and, new implementation strategies, including requirements for the development and implementation of a comprehensive regional bacteria monitoring plan. The Basin Plan amendments (REC STDs BPA) were approved by the State Water Resources Control Board on January 21, 2014 (Resolution No. 2014-0005) and by the Office of Administrative Law on July 2, 2014. The amendments were largely approved by the US Environmental Protection Agency (USEPA) on April 8, 2015, with a clarification on August 3, 2015.

Several of the modifications to the Basin Plan that resulted from these amendments required changes to the manner in which dischargers (particularly Municipal Separate Storm Sewer System (MS4) dischargers) conduct their bacterial indicator monitoring programs. Key modifications include: 1) the removal of fecal coliform objectives applicable to REC1 and REC2 uses of inland surface waters and replacement of those objectives with a geometric mean

objective for REC1 that is based on *E. coli*; 2) the addition of a range of single sample maximum *E. coli* values for REC1 waters that are to be used for beach notification and closure purposes unless insufficient data are available to calculate a geometric mean; 3) for the purposes of assigning appropriate single sample maximum *E. coli* values, inland surface waters identified in the Basin Plan were placed in one of four REC1 use Tiers (A-D), based on the known/anticipated intensity of REC1 use; 4) the de-designation of the REC1 and, in some cases, the REC2 beneficial use for certain waters based on UAAs (Including the removal of the REC1 beneficial use designation from Cucamonga Creek (Reach 1) and Temescal Creek (Reaches 1a and 1b); .the addition of several waterbodies to the Basin Plan Beneficial Use table (Basin Plan, Table 3-1) and determination, based on UAAs, not to designate those waters REC1; 6) the temporary suspension of the REC1 and REC2 beneficial uses and associated water quality objectives during high flow conditions that meet identified criteria; and, 7) the development of a comprehensive watershed wide bacteria monitoring program by the Orange, Riverside and San Bernardino county stormwater agencies. This monitoring program is to be integrated with other bacteria monitoring efforts, such as those associated with the MSAR TMDL, and is to be implemented upon Regional Board approval. Ongoing implementation of the requirements of the REC STDs BPA is being carried out jointly by the Storm Water Quality Standards Task Force (SWQSTF), which led the development of the REC STDs BPA, and the MSAR Bacterial Indicator TMDLs Task Force.

DISCUSSION

The REC STDs BPA required submittal of a Monitoring Plan and Quality Assurance Project Plan (QAPP). The Santa Ana Watershed Project Authority (SAWPA), on behalf of the SWQSTF and the MSAR Bacterial Indicator TMDLs Task Force, submitted the attached Monitoring Plan and QAPP. Regional Board staff has reviewed the proposed Monitoring Plan and QAPP and has provided comments to the joint Task Forces and their consultants regarding the plans. Regional Board staff finds that the proposed Monitoring Plan and QAPP satisfies the requirements of both the MSAR Bacterial Indicator TMDLs and the REC STDs BPA, and State Board staff approved the contents of the QAPP.

Links to the Santa Ana Watershed Bacteria Monitoring Program and the QAPP are as follows:

Monitoring Program:

http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/docs/msar/Monitoring_QAPP/Final_Monitoring_Plan_February_2016.pdf

QAPP:

http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/docs/msar/Monitoring_QAPP/Final_QAPP_SAR_Watershed_February_2016.pdf

The proposed Santa Ana Watershed Bacteria Monitoring Program is based on sampling of four priority groups that were identified through the REC STDs BPA process. (See the Basin Plan, Chapter 5, **Table 5 - REC1 Tiers**)

Priority 1 – REC1 Tier A Waters

Tier A waters represent the highest level of known/anticipated water contact recreational use of the Region's inland waterbodies. Tier A waters and specific monitoring locations, include:

- Canyon Lake (at Holiday Harbor)
- Lake Elsinore
- Lake Perris
- Big Bear Lake (at Swim Beach)
- Mill Creek – Reach 2
- Lytle Creek – North Fork
- Santa Ana River – Reach 3 (at MWD Crossing)
- Santa Ana River – Reach 3 (at Pedley Avenue)

These sites will be sampled weekly for a 20-week period, during the warm season (early May to mid-September) and for a 5-week period during the cool season (late October to late November). The resulting dataset from each site will provide 17 geometric mean values which (except the two Santa Ana River sites) will be compared to the Region's REC1 *E. coli* water quality objective: 5-sample/30-day geometric mean of <126 *E. coli* organisms /100 mL. As noted in Priority 2, below, the Santa Ana River sites will be compared to the numeric targets associated with MSAR Bacterial Indicator TMDL as described in Priority 2, below.

Priority 2 – Waters included in the MSAR Bacterial Indicator TMDL

These monitoring sites are carried over directly from the previous MSAR Bacterial Indicator TMDL Monitoring Plan, though it should be noted that the Mill Creek-Cucamonga Creek sampling station has been moved downstream to better characterize the water quality in this sub-watershed's runoff, now that the Mill Creek Constructed Wetlands are receiving some of the flows from the creek. Further, while the Santa Ana River – Reach 3 (includes monitoring locations at MWD Crossing and at Pedley Avenue) has been identified as a REC 1 - Tier A water, based on the level of local resident full-body recreational use during summer months, the water quality data will be compared to the more stringent *E. coli* numeric targets associated with the MSAR Bacterial Indicator TMDL. The Priority 2 sites include:

- Mill Creek – Cucamonga Creek (below the wetlands)
- Chino Creek (at Central Avenue)
- Prado Park Lake
- Santa Ana River – Reach 3 (at MWD Crossing)
- Santa Ana River – Reach 3 (at Pedley Avenue)

These sites will also be sampled weekly for a 20-week period, during the warm season (early May to mid-September) and for a 5-week period during the cool season (late October to late November). The resulting dataset from each site will provide 17 geometric mean values which will be compared to the numeric targets for *E. coli*, associated with the MSAR Bacterial Indicator TMDL. Those numeric targets include: 5-sample/30-day geometric mean of <113 *E. coli* organisms/100 mL and not more than 10% of the samples exceed 212 organisms/100 mL for any 30-day period.

In addition, these five Priority 2 sites will continue to be sampled annually, during a storm event with the first sample being collected when flows exceed normal dry weather flows and subsequent samples being taken 48, 72 and 96 hours after the first sample. These results will be compared to the wet weather numeric targets associated with the MSAR Bacterial Indicator TMDL, as appropriate.

Priority 3 – Impaired Waterbodies without an Adopted TMDL

These monitoring sites are for waterbodies for which the REC1 beneficial use has been determined to be impaired due to exceedances of bacterial indicator water quality objectives, based on the water quality objectives in place at the time of the listing, but for which no TMDL has been adopted. The purpose of monitoring these waters is to gather *E. coli* data to determine if these waterbodies should be delisted from the state's 303(d) List or whether it is appropriate to develop a TMDL for any waters determined to be impaired using the *E. coli* water quality objectives. The Priority 3 waterbodies include:

- Bolsa Chica Channel (upstream of Westminster Blvd/Bolsa Chica Rd)
- Borrego Creek (upstream of Barranca Parkway)
- Buck Gully Creek (at Little Corona Beach – Poppy Ave/Ocean Blvd)
- Los Trancos Creek (at Crystal Cove State Park)
- Morning Canyon Creek (at Morning Canyon Beach)
- Peters Canyon Wash (downstream of Barranca Parkway)
- San Diego Creek – Reach 1 (downstream of Campus Drive)
- San Diego Creek – Reach 2 (at Harvard Avenue)
- Santa Ana River – Reach 2 (downstream of Imperial Highway)
- Serrano Creek (upstream of Barranca Parkway/Alton Parkway)
- Goldenstar Creek (at Ridge Canyon Road)
- Lake Fulmore (at the Lakeside Boardwalk)
- Santa Ana River – Reach 4 (above S. Riverside Avenue Bridge)

These 13 monitoring sites have been divided up into 5 groups. On an annual basis, a 30-day sampling period between early May and late November has been assigned to each group. During each group's 30-day sampling period, 5 weekly samples will be collected and analyzed. Sampling periods for each waterbody will be rotated from year to year to ensure that over the next 5 years, each waterbody is sampled during each of the 5 sampling periods from early May to late November. The resulting dataset will provide 1 geometric mean value annually from each monitoring site, which will be compared to the Region's REC1 *E. coli* water quality objective of 5-sample/30-day geometric mean of <126 *E. coli* organisms /100 mL.

Priority 4 – REC2 Only Waterbodies

The REC1 beneficial use designation for these waterbodies was removed (or not designated, where the waterbody was added to the Basin Plan for the first time) as a result of an approved Use Attainability Analysis (UAA), as part of the REC STDs BPA. The REC STDs BPA required the sampling of these waterbodies on a periodic basis to ensure that there is no significant degradation in the water quality of these waterbodies. The Priority 4 waterbodies include:

- Temescal Creek (at Main Street)
- Santa Ana Delhi Channel (upstream of Irvine Avenue)

- Santa Ana Delhi Channel (in the Tidal Prism)
- Greenville-Banning Channel (in the Tidal Prism)
- Cucamonga Creek (at Hellman Avenue)

Each of these 5 monitoring sites will be sampled once a year, during dry weather. The samples will be analyzed for *E. coli* (freshwater) or *Enterococcus* (salt or brackish water) and the results will be compared to historical data. If atypical results that suggest degradation are observed, additional samples will be collected once/month for the three following months. If atypically high values are again observed, additional sampling will be conducted and a source identification and mitigation plan will be implemented.

Waterbodies not currently addressed by this monitoring plan

The recommended monitoring program recognizes resource limitations and the need to focus on waters with the highest actual or potential REC1 use. Accordingly, monitoring of Tier B, C and D REC1 waters and natural waterbodies unaffected by anthropogenic sources, is not proposed at the present time.

Priority 5 – REC1 Tier B, C, and D Waterbodies

Tier B waters are defined as those that are or may be moderately used by the public for water contact (also known as primary contact) recreation. Tier C waters are those now or expected to be lightly used, while Tier D waters are infrequently used, if at all. These waters have not been identified as impaired due to bacterial indicator densities and were not identified as a Tier A waterbody (highest level of actual or potential recreational use) through the REC STDs BPA process.

Priority 6 – Natural Waterbodies

The REC STDs BPA identified a number of the Region's waterbodies as 'natural', that is waterbodies in undeveloped watersheds that are not influenced by urban runoff or discharge from publicly owned treatment works (POTWs). Hence any bacterial indicator densities in these waters originate from natural sources that are beyond the control of the municipal permittees that make up this monitoring group. The focus of the recommended monitoring program is on waters that may be affected by controllable bacteria sources so that the need for and nature of appropriate control actions can be properly identified.

This monitoring plan is to be reviewed and revised (as necessary), every three years. If there are changes to waterbody priorities through the 303(d) listing or delisting process, through the adoption of additional bacterial indicator TMDLs or through the identification of high recreational use on a Tier B, C or D waterbody, the priority of that waterbody will be changed and it will be incorporated into the monitoring program for that priority category.

The annual report for the monitoring plan will be submitted by the joint Task Force by June 30th of each year.

STAFF RECOMMENDATION

Adopt Resolution No. R8-2016-0022, approving the Santa Ana River Watershed Bacteria Monitoring Program and QAPP, submitted by the joint Task Force and shown in the attachments to the Resolution.

**California Regional Water Quality Control Board
Santa Ana Region**

RESOLUTION NO. R8-2016-0022

Resolution Approving the Santa Ana River Watershed Monitoring Program Proposal Submitted Pursuant to the Middle Santa Ana River Watershed Bacterial Indicator Total Maximum Daily Loads and the REC1 Beneficial Use Standard Basin Plan Amendments

WHEREAS, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. An updated Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was adopted by the Regional Board on March 11, 1994, approved by the State Water Resources Control Board (SWRCB) on July 21, 1994 and approved by the Office of Administrative Law on January 24, 1995.
2. The Basin Plan identifies ground and surface waters within the Santa Ana Region, designates beneficial uses for those waters, establishes water quality objectives for the protection of those uses, prescribes implementation plans whereby the objectives are to be achieved, and establishes monitoring and surveillance programs.
3. Designated beneficial uses of surface waters in the Basin Plan include Water Contact Recreation (REC1) and Non-contact Water Recreation (REC2). REC1 is essentially equivalent to "primary contact recreation", the terminology employed by many states and accepted and used by the U.S. Environmental Protection Agency (USEPA). Similarly, REC2 is effectively equivalent to "secondary contact recreation", as this use is recognized and used by USEPA.
4. The 1975 Basin Plan established water quality objectives intended to protect both REC1 and REC2 uses of surface waters. Those water quality objectives were based on fecal coliform bacteria concentrations, where fecal coliform bacteria were used as a surrogate for the presence of pathogen, such as pathogens, that would impact the sanitary quality of recreational waters and potentially cause disease, primarily through the ingestion of water.
5. In 1986, USEPA published revised guidance ("Ambient Water Quality Criteria for Bacteria – 1986") regarding the surrogate pathogen indicator bacteria that States should employ to assure the protection of REC1. For freshwaters, the revised guidance recommends that States adopt objectives based on *E. coli* or enterococcus.
6. Waterbodies within the Middle Santa Ana River (MSAR) Watershed were listed on the Clean Water Act Section 303(d) list (303(d) list) in 1998 for bacterial contamination included: Santa Ana River, Reach 3; Chino Creek, Reach 1; Chino Creek, Reach 2; Mill Creek (Prado Area); Cucamonga Creek, Reach 1; and Prado Park Lake. The MSAR Bacterial Indicator Total Maximum Daily Loads (TMDLs), which were developed in response to the 303(d) listing, were approved by the Regional Board on August 26, 2005, by the SWRCB on May 15, 2006, by OAL on September 1, 2006 and by the US Environmental Protection Agency on May 16, 2007.

7. The MSAR Bacterial Indicator TMDLs were developed, adopted, and approved in accordance with Clean Water Act Section 303(d) and Water Code Section 13240 *et seq.* The amendment integrated the TMDLs into Chapter 5, "Implementation", of the Basin Plan.
8. Responsible agencies and dischargers in the MSAR watershed formed an MSAR Bacterial Indicator TMDL Task Force (TMDL Task Force). The TMDL Task Force members have been working jointly to implement requirements of the MSAR Bacterial Indicator TMDLs. TMDL Task Force members include the following agencies/parties: Riverside County Flood Control and Water Conservation District, San Bernardino County Flood Control District, County of Riverside, Santa Ana Watershed Project Authority, Milk Producers Council, Chino Basin Watermaster Agricultural Pool, and the Cities of Chino Hills, Upland, Montclair, Ontario, Rancho Cucamonga, Rialto, Chino, Fontana, Norco, Corona, and Riverside; and, as of 2013, the Cities of Claremont and Pomona.
9. In compliance with MSAR TMDL Task 3 and well in advance of the TMDL due date, the consultant for the TMDL Task Force submitted a proposed MSAR Water Quality Monitoring Plan, dated June 14, 2007, for Regional Board review and approval. The Regional Board approved the initial MSAR Water Quality Monitoring Plan at a duly noticed public hearing on June 29, 2007 (Resolution No. R8-2007-0046).
10. The TMDL Task Force revised the MSAR TMDL Water Quality Monitoring Plan to add activities and tasks designed to evaluate the performance of treatment BMPs in reducing bacterial indicator levels in surface waters. The TMDL Task Force submitted the revised MSAR TMDL Water Quality Monitoring Plan, dated April 3, 2008, for Regional Board review and approval. The Regional Board approved the revised MSAR Water Quality Monitoring Plan at a duly noticed public hearing on April 18, 2008 (Resolution No. R8-2008-0044).
11. MSAR TMDL requirements were incorporated in the Municipal Separate Storm Sewer System (MS4) permit updates for Riverside County (Order No. R8-2010-0033) and San Bernardino County (Order No. R8-2010-0036). Those MS4 permits required the development and implementation of Comprehensive Bacteria Reduction Plans (CBRPs) that resulted in revisions to the MSAR TMDL Water Quality Monitoring Plan. The Riverside County and San Bernardino County CBRPs were submitted by the respective County for Regional Board review and approval. The Regional Board approved the two CBRPs at a duly noticed public hearing on February 10, 2012 (Resolution Nos. R8-2012-0015 and R8-2012-0016).
12. The watershed of the MSAR includes urban drainages from portions of the cities of Claremont and Pomona. Those cities are located in the County of Los Angeles and are under the jurisdiction of the Los Angeles Regional Board. As the result of discussions between the two Regional Boards and the two Cities, on September 13, 2013, the Santa Ana Regional Board adopted National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the

cities of Claremont and Pomona (Order No. R8-2013-0043, NPDES No. CA8000410). This Order required the development and implementation of CBRPs for the cities of Claremont and Pomona that resulted in revisions to the MSAR TMDL Water Quality Monitoring Plan. The Claremont and Pomona CBRPs were submitted by the respective City for Regional Board review and approval. The Regional Board approved the two CBRPs at a duly noticed public hearing on March 14, 2014 (Resolution Nos. R8-2014-0030 and R8-2014-0031).

13. Working with the Stormwater Quality Standards Task Force (SWQS Task Force), a group of dischargers and other regional stakeholders, Regional Board staff developed recommendations to: revise the Basin Plan fecal coliform objectives to implement USEPA's 1986 recommended criteria; revise the Basin Plan REC1 and REC2 beneficial use designations; and revise/develop implementation strategies, including requirements for the development and implementation of a comprehensive regional bacteria monitoring plan. The suite of recommended changes were identified as the REC STDs Basin Plan Amendments (BPA) and were adopted by the Regional Board at a duly noticed public hearing on June 15, 2012 (Resolution No. R8-2012-0001). The REC STDs BPA were approved by the SWRCB on January 21, 2014 (Resolution No. 2014-0005) and by the Office of Administrative Law on July 2, 2014. The amendments were largely approved by the US Environmental Protection Agency (USEPA) on April 8, 2015, with a clarification on August 3, 2015.
14. The memberships of the SWQS Task Force and the TMDL Task Force have a significant overlap. The two Task Forces (in the form of a Joint Task Force) asked that bacterial indicator water quality monitoring requirements resulting from the MSAR TMDL and REC STDs BPA be combined into one monitoring plan. This plan, the Santa Ana River Watershed Bacteria Monitoring Program was prepared by the Joint Task Force with Regional Board staff serving in an advisory role. The Monitoring Program includes a Quality Assurance Project Plan (QAPP) in accordance with both MSAR TMDL and REC STDs BPA requirements. That QAPP has been reviewed and approved by SWRCB staff.
15. Regional Board staff have reviewed the proposed monitoring program and QAPP and find that they comply with the MSAR TMDL and the REC STDs BPA, as they are specified in the Basin Plan.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Regional Board approves the Santa Ana Watershed Bacteria Monitoring Program and the Quality Assurance Project Plan, both submitted on behalf of the joint MSAR TMDL and REC STDs BPA Task Force members on February 8, 2016.
2. This Program and the QAPP comply with the respective requirements of the MSAR Bacterial Indicator TDMLs and the REC STDS BPA, as specified in the Basin Plan.
3. The current members of the MSAR Bacterial Indicator TMDL Task Force are in

compliance with the MSAR Bacterial Indicator TMDLs.

4. The current members of the SWQS Task Force are in compliance with the REC STDs BPA.
5. This Program and schedule must be implemented upon Regional Board approval.
6. This Program must be reviewed, and revised as appropriate, every three years. The Regional Board's Executive Officer is hereby delegated authority to approve subsequent revisions to the plans and schedules. The updated Program shall be implemented upon approval by the Executive Officer.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a resolution adopted by the California Regional Water Quality Control Board- Santa Ana Region, on March 11, 2016.

Kurt V. Berchtold
Executive Officer