

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

May 1, 2015

ITEM: 6

SUBJECT: REVISED REGIONAL MONITORING PROGRAM FOR THE NEWPORT BAY WATERSHED NUTRIENT TMDL

DISCUSSION

On April 17, 1998 and October 9, 1998, the Santa Ana Regional Water Quality Control Board (Regional Board) adopted Resolution No. 98-9 and Resolution No. 98-100, respectively, establishing a nutrient TMDL for the Newport Bay/San Diego Creek Watershed. The nutrient TMDL was approved by U.S. EPA on April 16, 1999.

On October 7, 1999, the Regional Board adopted Resolution No. 99-77, establishing a regional monitoring program (RMP) for the nutrient TMDL.

The County of Orange began implementing the RMP on behalf of the cities and other stakeholders in the watershed and submitted the first annual report for the monitoring program in November 2001.

In 2006, the RMP was amended to include quarterly reporting requirements (Resolution No. 2006-0063), and the County has been submitting quarterly reports since January 2007.

On December 19, 2014, the Regional Board adopted Resolution No. 2014-0079, making a number of changes to the RMP to improve monitoring efficiency and take into account the considerable volume of data collected, the substantial changes in land use within the Newport Bay Watershed, and significant progress towards achieving the nutrient TMDL objectives.

These changes included reducing the number of stations and the frequency of monitoring and reporting.

As the RMP is implemented over time, it is likely that there will be future additional requests to modify the program in response to the data collected, sampling constraints, and other circumstances. Staff recommends that the RMP be amended to include a provision that would explicitly allow the Executive Officer to make minor modifications to the RMP to respond to these circumstances. Requests for substantive changes to the RMP would be brought to the Regional Board for consideration. Further, any minor

modifications approved by the Executive Officer would be subject to review by the Regional Board upon request.

The recommended modification to the RMP is to add the following paragraph under the heading "General Monitoring Provisions":

"Minor modifications to this monitoring and reporting program may be made by the Executive Officer at any time. Such minor modifications may include increases or decreases in the number of parameters to be monitored, the frequency of the monitoring or the number and size of samples to be collected. Any such Executive Officer approved modifications are subject to Regional Board review. Substantive changes to the monitoring and reporting program will be considered by the Regional Board at a public hearing.

The revised monitoring program (Monitoring and Reporting Program No. R8-2015-0016) is included as Attachment A to Resolution No. R8-2015-0016.

STAFF RECOMMENDATION

Adopt Resolution No. RB-2015-0016, approving the revised Regional Monitoring Program for the Newport Bay Watershed Nutrient TMDL as shown in Attachment A to the Resolution.

California Regional Water Quality Control Board
Santa Ana Region

RESOLUTION NO. R8-2015-0016

Resolution Approving Revisions to the Regional Monitoring Program for the Nutrient TMDL in the Newport Bay/San Diego Creek Watershed.

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

1. **Regional Monitoring Program:** On October 7, 1999 the Regional Board approved the Regional Monitoring Program (RMP) for the San Diego Creek/Newport Bay Watershed Nutrient TMDL. On August 25, 2006, the Regional Board approved revisions to the RMP to include quarterly reporting and to specify data transmittal requirements. On December 19, 2014, the Regional Board approved revisions to the RMP to reflect changes in the watershed and progress towards meeting the TMDL objectives (Monitoring and Reporting Program No. R8-2014-0079).
2. **Future Monitoring Program Modifications:** As the RMP is implemented over time, it is likely that there will be a need to modify the program in response to changing circumstances within the Newport Bay Watershed.
3. **Executive Officer Authority to Make Minor Modifications:** Historically, as described in Finding 1, the Regional Board has considered modifications to the RMP. Future Executive Officer approval of minor modifications will contribute to the efficient implementation of the RMP. It is appropriate to provide explicit acknowledgement in the RMP of the Executive Officer's authority to make such minor modifications.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Regional Board approves the addition of a provision to the nutrient TMDL RMP that acknowledges the Executive Officer's authority to make minor modifications to the program, as set forth in Section A.1 of Monitoring and Reporting Program No. R8-2015-0016 (Attachment A to this Resolution).
2. The County of Orange shall submit the first annual report and data transmittal under the new schedule on December 15, 2015.

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 May 1, 2015.

Kurt V. Berchtold
Executive Officer

TEMPORARY

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

MONITORING AND REPORTING PROGRAM NO. R8-2015-0016

FOR THE
NEWPORT BAY/SAN DIEGO CREEK WATERSHED NUTRIENT TMDL
(RESOLUTION NO. 98-9 AND RESOLUTION NO. 98-100)

California Water Code sections 13267 and 13383 authorize the Regional Water Quality Control Board (Regional Board) to require technical and monitoring reports. On April 17, 1998 and October 9, 1998, the Regional Board adopted Resolution No. 98-9 and Resolution No. 98-100, respectively, establishing a nutrient Total Maximum Daily Load (TMDL) for the Newport Bay/San Diego Creek Watershed. The nutrient TMDL was approved by U.S. EPA on April 16, 1999. On October 7, 1999 the Regional Board adopted Resolution No. 99-77, establishing a regional monitoring program (RMP) for the nutrient TMDL. In 2006, the Regional Board adopted Resolution No. 2006-0063, amending the RMP to include quarterly reporting requirements.

A. GENERAL MONITORING PROVISIONS

1. Minor modifications to this monitoring and reporting program may be made by the Executive Officer at any time. Such minor modifications may include increases or decreases in the number of parameters to be monitored, the frequency of the monitoring or the number and size of samples to be collected. Any such Executive Officer approved modifications are subject to Regional Board review. Substantive changes to the monitoring and reporting program will be considered by the Regional Board at a public hearing.
- 1.2. Where applicable, all sampling and sample preservation shall be in accordance with the current edition of "*Standard Methods for the Examination of Water and Wastewater*" (American Public Health Association).
- 2.3. All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the United States Environmental Protection Agency (USEPA), unless otherwise specified in this MRP. In addition, the Regional Board and/or USEPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 CFR 136.

3.4. _____ Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the Environmental Laboratory Accreditation Program administered by State Water Resources Control Board (SWRCB) in accordance with Water Code Section 13176, and must include quality assurance/quality control data with the reports, or at laboratories approved by the Regional Board's Executive Officer or the USEPA.

4.5. _____ Whenever the County monitors any pollutant more frequently than is required by this Resolution, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the monitoring report specified by the Executive Officer.

5.6. _____ The County shall have, and implement an acceptable written quality assurance plan (QAP) for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples.

6.7. _____ All analytical data shall be reported with identification of practical quantitation levels and with method detection limits, as determined by the procedure found in 40 CFR 136.

7.8. _____ The flow measurement system shall be calibrated at least once per year or more frequently, to ensure continued accuracy.

8.9. _____ All monitoring instruments and devices used by the County to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

9.10. _____ Monitoring and reporting shall be in accordance with the following:

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Whenever the County monitors any pollutant more frequently than is required by this Resolution, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the monitoring report specified by the Regional Board's Executive Officer.
- c. A "grab" sample is defined as any individual sample collected in less than 15 minutes.
- d. A composite sample is defined as a combination of no fewer than eight individual grab samples obtained over the specified sampling period. The volume of each individual grab sample shall be proportional to the

discharge flow rate at the time of sampling. The compositing period shall equal the specific sampling period, or 24 hours, if no period is specified.

- e. Daily samples shall be collected on each day of the week.
- f. Monthly samples shall be collected on any representative day of each month.
- g. Quarterly samples shall be collected on any representative day of February, May, August, and November.

B. FRESHWATER TRIBUTARY MONITORING

1. The County shall implement the monitoring program for freshwater tributaries to Newport Bay as listed in Table 1 below.
2. The stations listed in Table 1 are a subset of those described in Section C-11-III.1 of the County's 2012-13 Stormwater Report (Unified Annual Progress Report Program Effectiveness Assessment, Santa Ana Region).
3. The storm condition is defined as when the flow at the SDMF05 station exceeds 50 cubic feet per second due to precipitation.

Table 1: Newport Bay Watershed Freshwater Tributary Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
SADF01 Santa Ana Delhi @ Irvine Avenue	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum

Table 1: Newport Bay Watershed Freshwater Tributary Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
SDMF05 San Diego Creek @ Campus Drive	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum
BCF04 Bonita Canyon @ San Diego Creek	Physicals	temp, conductivity, turbidity, pH, DO	Quarterly	4	1	4
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Quarterly	4	1	4
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum
CMCG02 Costa Mesa Channel @ Highland Avenue	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum
MIRF07 El Modena-Irvine Channel @ Michelle Drive	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum

Table 1: Newport Bay Watershed Freshwater Tributary Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
ACWF18 Agua Chinon Wash @ Irvine Center Drive	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum
BARSED Peters Canyon Wash @ Barranca Parkway	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum
WYLSER San Diego Creek @ Culver Drive	Physicals	temp, conductivity, turbidity, pH, DO	Monthly	12	1	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly	12	1	12
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, pH, DO	Storm	3 minimum	1	3 minimum
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Storm	3 minimum	1	3 minimum

temp = Temperature
DO = Dissolved Oxygen
TN = Total Nitrogen
TP = Total Phosphorus

C. NEWPORT BAY WATER COLUMN MONITORING

1. The County shall implement the Newport Bay water column monitoring program as listed in Table 2 below.
2. The stations listed in Table 2 are a subset of those described in Section C-11-III.1 of the County's 2012-13 Stormwater Report (Unified Annual Progress Report Program Effectiveness Assessment, Santa Ana Region).

Table 2: Newport Bay Water Column Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
UNBJAM	Physicals	temp, conductivity, turbidity, pH, DO	Quarterly	4	3 (1 @ 3 depths)	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Quarterly	4	3 (1 @ 3 depths)	12
UNBSDC	Physicals	temp, conductivity, turbidity, pH, DO	Quarterly	4	3 (1 @ 3 depths)	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Quarterly	4	3 (1 @ 3 depths)	12
UNBNSB	Physicals	temp, conductivity, turbidity, pH, DO	Quarterly	4	3 (1 @ 3 depths)	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Quarterly	4	3 (1 @ 3 depths)	12
UNBCHB	Physicals	temp, conductivity, turbidity, pH, DO	Quarterly	4	3 (1 @ 3 depths)	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Quarterly	4	3 (1 @ 3 depths)	12
LNBHIR	Physicals	temp, conductivity, turbidity, pH, DO	Quarterly	4	3 (1 @ 3 depths)	12
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Quarterly	4	3 (1 @ 3 depths)	12

temp = Temperature
DO = Dissolved Oxygen
TN = Total Nitrogen
TP = Total Phosphorus

D. NEWPORT BAY MACROALGAE MONITORING

1. The County shall implement the monitoring program for macroalgae in Upper Newport Bay as listed in Table 3 below.
2. The peak season for macroalgal growth is July, August and September.

Table 3: Newport Bay Macroalgae Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
Horne #2 (South end of Shellmaker Is.)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3
Horne #4 (South tip of Middle Is.)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3
Horne #7 (S end of Upper Is)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3

Table 3: Newport Bay Macroalgae Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
Horne #9 (NW side of Upper Is.)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3
Horne #13 (SW side of Unit II Basin)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3
Horne #16 (N end of Unit II Basin, W side of Dike)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3
Horne #19 (NW side of Unit I Basin)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3

Table 3: Newport Bay Macroalgae Monitoring

Station	Analysis	Constituents	Frequency	Annual Frequency	Samples per Station	Annual Samples per Station
Horne #24 (NE side of Unit I Basin)	Physicals	temp, conductivity, DO	Monthly during peak season	3	1	3
	Nutrients	TN(nitrate, nitrite, ammonia, kjeldahl) TP(ortho)	Monthly during peak season	3	1	3
	Algae	biomass, species composition	Monthly during peak season	3	quadrat	3

temp = Temperature
DO = Dissolved Oxygen
TN = Total Nitrogen
TP = Total Phosphorus

E. REPORTING

1. Annual Report Schedule

- a. The County shall submit an annual monitoring report to the Regional Board by December 15 of each year. The report shall present the results of the preceding winter (October through March) and the prior year's summer (April through September) seasons. Final water quality and flow data for April through June of the same year shall also be included in the Annual Report but the analyses of those data will be included in the next Annual Report.
- b. Annual reports shall be submitted electronically.
- c. Annual reports shall, at a minimum, include summary statistics for each analyte sampled at each monitoring location in the watershed, categorized by season (as defined by the nutrient TMDL).
- d. If the annual report due date listed above falls on a weekend, the report will not be due until the next business day.

2. Annual Report Compliance Evaluation

- a. The annual report shall include an evaluation of compliance with the seasonal nitrogen and phosphorus loads to Newport Bay. This load shall be calculated using data from the following monitoring locations:
 - San Diego Creek at Campus Drive (SDMF05)
 - Santa Ana Delhi Channel at Irvine Boulevard (SADF01)
 - Bonita Canyon at MacArthur Boulevard (BCF04)
 - East Costa Mesa Channel at Highland Drive (CMCG02)
- b. The annual report shall include an evaluation of compliance with the seasonal nitrogen and phosphorus urban load allocation. This load shall be calculated using data from the East Costa Mesa Channel at Highland Drive (CMCG02) and El Modena Irvine Channel at Michelle (MIRF07) monitoring stations. The urban load for nitrogen and phosphorus will be determined by applying the loading rates determined from these two stations to the total urban land use area in the watershed.
- c. The annual report shall include an evaluation of compliance with the nitrogen water quality objectives in San Diego Creek, Reaches 1 and 2. The nitrogen concentration in San Diego Creek, Reaches 1 and 2, will be determined from samples collected at the San Diego Creek at Campus (SDMF05) and San Diego Creek at Culver (WYLSed) stations respectively.
- d. The macroalgal monitoring data from Upper Newport Bay will continue to be used to quantify macroalgal biomass.

3. Data Transmittals

- a. The County shall submit water quality data to the Regional Board on a semi-annual basis. The data transmittal for the winter season and the first half of the summer season (October through June) will be due by December 15 as part of the Annual Report submission. The data transmittal for the second half of the summer season (July through September) will be due by April 15. The data transmittals will thus include data that were collected six to twelve months prior to the transmittals.
- b. The County shall submit finalized flow data (July through June) to the Regional Board staff on an annual basis along with the annual report.
- c. The data transmittals to the Regional Board shall be in the form developed by the Stormwater Monitoring Coalition (SMC) and approved by the State Water Resources Control Board in the document entitled "Standardized Data Exchange Formats." This document was developed in order to provide a standard format for all data transfer so that data can universally be shared and evaluated from various programs.

- e. The data transmittals shall be submitted electronically.
- f. If the semi-annual data transmittal due date listed above falls on a weekend, the data transmittal will not be due until the next business day.

F. QUALITY ASSURANCE PLAN

Sampling and analysis should be performed according to a quality assurance plan that is compatible with the most recent state guidance from the Surface Water Ambient Monitoring Program (SWAMP).

DRAFT