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

RECEIVING WATERS AND URBAN RUNOFF MONITORING AND REPORTING PROGRAM NO. R8-2010-0036

NPDES NO. CAS618036
FOR
THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT, THE COUNTY OF SAN BERNARDINO, AND THE INCORPORATED CITIES OF SAN BERNARDINO COUNTY WITHIN THE SANTA ANA REGION
AREA-WIDE URBAN STORM WATER RUNOFF MANAGEMENT PROGRAM

I. GENERAL

A. Revisions of the monitoring and reporting program are appropriate to ensure that the Permittees are in compliance with requirements and provisions contained in this Order. Revisions may be made under the direction of the Executive Officer at any time during the term of this Order, and may include redistribution of monitoring resources to address TMDL needs, a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples collected.

B. The Permittees identified a priority list of pollutants of concern in the watershed based on the findings of water quality monitoring efforts conducted during previous permit terms. These pollutants and their order of priority from high to low were: (1) high priority – bacteria; (2) medium priority - metals (zinc, copper, lead); and (3) low priority - nutrients, TSS and COD. This priority ranking provides the basis for a risk-based approach to stormwater management to direct resources to the most important water quality monitoring activities.

C. All sample collection, handling, storage, and analysis shall be in accordance with 40 CFR Part 136 (latest edition) "*Guidelines Establishing Test Procedures for the Analysis of Pollutants*," promulgated by the USEPA, the guidance being developed by the State Board pursuant to Water Code Section 133383.5, or other methods which are more sensitive than those specified in 40 CFR 136 and approved by the Executive Officer, or methods documented in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).

D. The Executive Officer is authorized to allow the Permittees to participate in statewide, national, or other monitoring programs in lieu of or in addition to this monitoring program. In addition, the Permittees are authorized to complement their urban runoff monitoring data with data from other monitoring sources, provided the monitoring conditions and sources are similar to those in the permitted area.

E. There are two types of monitoring programs that will be referenced and described in this Monitoring and Reporting Program (MRP):

1. An Integrated Watershed Monitoring Program (IWMP) that is to be developed under this MRP. The existing core storm water monitoring program (Core Monitoring) is an integral part of the IWMP. The Core Monitoring program shall be implemented until the new IWMP developed under this order is approved by the Executive Officer; and
2. Regional monitoring efforts where the Permittees participate or make monetary contributions, including TMDL-related monitoring.

F. The Permittees must coordinate monitoring efforts with other entities discharging into the Middle Santa Ana River Watershed and the Big Bear Lake Watershed. Ideally, all monitoring efforts should conform to the same quality assurance, data management, validation, and verification standards, therefore a single coordinated watershed Quality Assurance Program Plan (QAPP) should be used for all monitoring efforts. A previously developed QAPP may be used if an appropriate document exists, such as the Middle Santa Ana River Pathogen TMDL – BMP Implementation QAPP, otherwise a QAPP must be developed for this purpose. The Permittees should cooperate, as appropriate, with other MS4 Permittees (including those in Orange County and Riverside County) in the development of the QAPP, regional monitoring efforts, creation and maintenance of databases, and special studies.

G. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both [40 CFR 122.41(j)(5)]

H. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

I. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) shall be used for all analyses, unless otherwise specified.

J. The selected water quality monitoring parameters should have a direct relationship to the designated beneficial uses in the receiving waters being monitored.

K. Metals analyses shall be performed on filtered samples in order to obtain concentration of the metals in the dissolved fraction. The detection limits for the metals analyses shall be low enough to allow for a direct comparison to the metal's criteria in the California Toxics Rule.

L. To the extent practicable, all monitoring data and monitoring locations should be integrated into the San Bernardino County GIS database system.

II. OBJECTIVES

A. Objectives: The overall goal of these monitoring programs is to provide data to support the development of an effective watershed and key environmental resources management program that focuses resources on the priority list of pollutants of concern, as defined by the risk-based analysis described in Section I, above, and Finding II.E.22 of Order No. R8-2010-0036. The following are the major objectives:

1. To provide data to support the development of an effective municipal urban runoff pollutant source control program.
2. To determine water quality status, trends, and pollutants of concern associated with urban runoff and their impact on the beneficial uses of the receiving waters. This includes determining current conditions in the receiving waters including the extent and magnitude of any impairments, and relative urban runoff contribution to the impairment.
3. To assist in identifying the sources of the priority list of pollutants of concern in urban runoff to the maximum extent practicable (e.g., including, but not limited to atmospheric deposition, contaminated sediments, other non-point sources, etc.)
4. To characterize pollutants associated with urban runoff and to assess the influence of urban land uses on receiving water quality
5. To evaluate the effectiveness of existing urban runoff water quality management programs, including an estimate of pollutant reductions achieved by the treatment and source control BMPs implemented by the Permittees.
6. To detect illegal discharges and illicit connections to the MS4s so they can be responded to or eliminated.
7. To identify those waters, which without additional action to control pollution from urban storm water discharges, cannot reasonably be expected to attain or maintain applicable water quality objectives in the Basin Plan.
8. To identify and prioritize the most significant water quality problems resulting from urban runoff. Order No. R8-2010-0036 establishes new program monitoring priorities through the development and implementation of a risk-based, outcome-oriented, compliance-focused program. Monitoring and sampling data shall be used to identify and prioritize the most significant water quality problems in receiving waters.
9. To evaluate costs and benefits of proposed municipal storm water quality control programs to the stakeholders, including the public.

B. The Regional Board recognizes that program modifications may be necessary to attain these objectives. The Executive Officer is hereby authorized to evaluate and to determine adequate progress toward meeting each objective and to make any modifications to the monitoring and reporting program.

III. QUALITY ASSURANCE PROGRAM PLAN (QAPP)

A. Except for TMDL monitoring where TMDL specific quality assurance plans[1,2] have been developed or will be developed, the Permittees shall submit to the Executive Officer of the Regional Board for review and approval a quality assurance/quality control plan that has been developed by qualified professionals with experience in US EPA's and California's SWAMP QAPP guidelines.

B. The quality assurance plan shall and address all elements for the SWAMP QAPP guidelines. Data collection, field and laboratory protocol, measurements, and analysis shall be compatible with SWAMP Quality Assurance Management Plan (QAMP[3]) and with Procedures for Conducting Routine Field Measurement.

C. Where procedures are not otherwise specified in this MRP, sampling, analysis and quality assurance/quality control must be conducted in accordance with the QAMP for SWAMP.

D. For priority toxic pollutants, if the Permittees can demonstrate that a particular ML (Minimum Level) is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Principal Permittee must submit documentation from the laboratory to the Regional Water Board Executive Officer for approval prior to utilizing a ML that is not consistent with the MLs in the SIP.

E. The indicators of water quality selected for monitoring shall be representative of the beneficial uses in the receiving water bodies in the permittees jurisdiction. Metals analyses shall be performed on filtered samples in order to obtain concentration of the metal in the dissolved fraction. The detection limits for the metal analyses shall be low enough to allow for a direct comparison to the metal's criteria in the California Toxics Rule.

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[1] SAWPA, Quality Assurance Project Plan for the Middle Santa Ana River Pathogen TMDL-BMP Implementation Project, April 3, 2008

[2] Big Bear Municipal Water District, Integrated Total Maximum Daily Load Implementation Program for Big Bear Lake, Quality Assurance Project Plan, April 24, 2006

[3] See State Board's SWAMP at http://www.swrcb.ca.gov/water_issues/programs/swamp/qamp.shtml

IV. INTEGRATED WATERSHED MONITORING PROGRAM (IWMP)

A. GENERAL

1. Within 12 months of adoption of this Order, the Principal Permittee, in coordination with the Co-Permittees shall review, revise as needed, and submit an Integrated Watershed Monitoring Plan (IWMP) for review and approval by the Executive Officer. At a minimum, the IWMP shall include the essential elements specified below. The IWMP shall identify all the monitoring programs, along with implementation and reporting schedules that are conducted or participated in to fulfill the monitoring objectives of this Order. The approved IWMP shall be implemented within six months of approval by the Executive Officer. In the interim, the Permittees shall continue to implement the Core Monitoring program approved under the third term permit and any additional monitoring required under this Order.

B. COMPONENTS OF AN INTEGRATED WATERSHED MONITORING PROGRAM:

The IWMP shall, at a minimum, include the following components:

1. **EXISTING CORE MONITORING** - The current municipal stormwater monitoring for San Bernardino County until it is modified by the IWMP. This consists of receiving water monitoring and monitoring within the MS4s (See Figure 1).

   a. Receiving Water Monitoring:

      Permittees shall select a number of representative receiving water locations within their jurisdiction. These locations should be close to MS4 discharge points and should include locations where chronic and/or persistent water quality problems have been identified. The objective of receiving water monitoring is to determine if urban runoff is causing or contributing to violations of water quality standards in the receiving waters.

   b. Monitoring within MS4s:

      Permittees shall select a number of representative locations (representative of flow, duration, pollutant loads, etc.) within storm water conveyance systems within their jurisdiction. The objective of this monitoring element is to determine the pollutant loads from the MS4s and to determine their trend. This monitoring requirement maybe combined with the mass emissions monitoring described in 2, below.

2. **URBAN DISCHARGE MASS EMISSIONS MONITORING:**

   a. Representative outfall locations shall be identified and monitored to achieve the following objectives:

      i. To estimate the total mass emissions of pollutants of concern from the MS4 to receiving waters.

ii. To assess trends in mass emissions associated with urban storm water runoff from the MS4s over time to correlate land use and population changes.

iii. To determine if the MS4 is contributing to exceedances of water quality standards, by comparing outfall and receiving water results to: (1) Basin Plan Water quality Objectives (WQOs); (2) EPA storm water benchmarks contained in the EPA Multi-Sector Industrial Storm Water Permit; (3) California Toxic Rule (CTR); and (4) other MS4 discharger's monitoring data.

b. At least two samples shall be collected from the monitoring locations identified in a, above, during dry weather conditions and one sample from the first storm event of the rainy season (October 1 to May 31) and two more samples during subsequent storm events. The mass emissions monitoring locations shall be monitored for:

i. The flow in cubic feet per second (cfs) (the flow may be estimated);

ii. The samples from the first storm event and one of the dry weather samples shall be analyzed for the entire suite of priority pollutants. All samples must be analyzed for E. coli, nutrients (nitrates and nitrites, potassium, and phosphorous), metals, pH, TSS, TOC, organophosphorus pesticides/herbicides, and any other constituents that are known to have contributed to impairment of local receiving waters by inclusion on the 303(d) list. Dry weather samples shall be also analyzed for total petroleum hydrocarbons (EPA Method 8015M - direct injection) and oil and grease.

iii. A mass loading model shall be used to calculate the mass loadings and to the extent practicable the data shall be integrated into the San Bernardino County GIS database system.

3. ILLEGAL DISCHARGE/ILLICIT CONNECTION MONITORING

a. The Permittees shall review and update their dry and wet weather reconnaissance strategies to identify and eliminate illegal discharges and illicit connections using the Guidance Manual for Illicit Discharge, Detection, and Elimination developed by the Center for Watershed Protection[4] or any other equivalent program. The Permittees should identify appropriate monitoring locations, such as geographic areas with a high density of industries associated with gross pollution (e.g. electroplating industries, auto dismantlers) and/or locations subject to maximum sediment loss (e.g. hillside new developments).

b. The dry weather monitoring for nitrogen and total dissolved solids shall be included as part of the illegal discharge/illicit connection monitoring program. In light of the recently adopted Nitrogen-TDS objectives for certain management zones, the Permittees shall, within 18 months of Permit adoption, submit a plan

[4] USEPA (Illicit Discharge Detection and Elimination - A Guidance Manual for Program Development and Technical Assessments) by the Center for Watershed Protection and Robert Pitt, University of Alabama, October 2004, updated 2005).

to determine baseline concentration of these constituents in dry weather runoff, if any, from significant outfall locations (36 inches or larger in diameter).

4. HYDROMODIFICATION MONITORING PLAN (HMP)

This Order requires development and implementation of a Hydromodification Monitoring Plan as part of the Watershed Action Plan (WAP) to evaluate hydromodification impacts for the drainage channels deemed most susceptible to degradation, and, where applicable the effectiveness of BMPs in preventing or reducing impacts from hydromodification within the permitted area. (Some or all of the following requirements may be satisfied by the Permittees participation in the "Development of Tools for Hydromodification Assessment and Management' Project" undertaken by the SMC and coordinated by SCCWRP).

a. The Order requires the Permittees to develop a WAP in phases within 24 months of Permit adoption. The WAP should identify vulnerable streams and possible control measures to minimize hydrologic changes and tools to measure any impacts on geomorphology and aquatic resources.

b. The HMP shall include:

   i. Protocols for ongoing monitoring to assess drainage channels deemed most susceptible to degradation, and to assess the effectiveness in preventing or reducing impacts from hydromodification within the permitted area.

   ii. Models to predict the effects of urbanization on stream stability within the permitted area.

5. SOURCE IDENTIFICATION AND SPECIAL STUDIES

a. The ROWD identified a priority list of pollutants of concern in the watershed based on the findings of water quality monitoring efforts. These pollutants and their order of priority from high to low were: (1) high - bacteria, (2) medium - metals (zinc, copper, lead), (3) low - nutrients (nitrate as nitrogen, total phosphorus), TSS and COD. During the Permit term, the Permittees shall assess each of the pollutants considered a concern (except bacteria, which is already being addressed by a TMDL) and prepare a strategic plan for addressing each pollutant. For some pollutants such as the metals, special studies for the development of site-specific objectives or total recoverable/ dissolved translators may be necessary.

b. During the third term permit, a Pollutant Source Investigation and Control Plan[5] was developed and implemented to investigate elevated pollutant concentrations of coliform bacteria, zinc, copper and lead at Site 5. This Order requires continued implementation of the plan, including annual reporting and BMP effectiveness evaluation for the Site 5 drainage area.

[5] 2005-2006, 2006-2007, 2007-2008 Annual Reports

V. REGIONAL WATERSHED MONITORING

A. Regional watershed monitoring refers to the collaboration among many agencies in and around southern California in addition to municipal stormwater agencies that are interested in watershed to regional scale monitoring. Regional monitoring can be used to assess the cumulative results of anthropogenic and natural effects on the environment and provides opportunities for comparison of the different stormwater agencies' monitoring to determine the breadth and depth of human impacts and natural variability found throughout southern California's watershed. See Section V.B.3 below for Regional Bioassessment monitoring,

1. Some of these regional monitoring programs include the Statewide Ambient Monitoring Program (SWAMP), State Wetland's Recovery Project, USEPA Environmental Monitoring and Assessment Program (EMAP), and US Geological Survey's National Water Quality Assessment Program (NAWQA).
2. A number of regional organizations continue work in the Santa Ana River Watershed area, including the SWQSTF, SMC, SCCWRP, and universities. Participation in water-related studies or planning efforts, which may include monitoring, provides valuable information for the area-wide monitoring program. The Permittees shall participate in these regional efforts including the following:
   a. TMDL Monitoring
   b. Low Impact Development BMP Monitoring
   c. Regional Bioassessment Monitoring (SCCWRP Technical Report 539)

B. **Regional Monitoring Plans**

1. TMDL/WLA MONITORING

The Permittees shall continue to participate in TMDL monitoring programs to determine compliance with the waste load allocations (WLAs). The compliance schedules for the approved TMDLs within the permitted area are beyond the five-year permit term. This Order requires Permittees to conduct monitoring to determine the effectiveness of the BMPs implemented in reducing pollutant loads and eventually to attain WLAs by the deadlines specified in the TMDL implementation plans.

Since the compliance dates for the TMDLs in this Order are outside the five-year term of this Order, the Permittees are required to monitor and report effectiveness of the BMPs specified in the TMDL Implementation Plans and this Order iwith respect to Pollutant reduction goal(s) as one measure of progress towards attainment of WLAs in accordance with the compliance schedules specified in the TMDL Implementation Plans. If water quality standards in the impaired receiving waters are met through implementation of appropriate control measures, this would constitute compliance with the WLAs.

a. MSAR Bacteria TMDL/WLA Monitoring Plan (Figures 2 & 3)

i. On June 14, 2007, the TMDL task force members submitted a source evaluation plan and a monitoring plan. The Regional Board approved these plans on June 29, 2007, Resolution No. R8-2007-0046. A revised monitoring plan and an urban bacterial indicator source evaluation plan were approved by the Regional Board on April 18, 2008, Resolution No. R8-2008-0044 (See Figures 2 and 3). The MSAR Permittees within the MSAR watershed shall continue to conduct monitoring and source evaluations in accordance with the approved plans and report the findings in accordance with the schedules specified in the approved plans or as updated by subsequent Regional Board approved revisions.

ii. In conformance with Task 3 of the TMDL Implementation Plan contained in Resolution R8-2005-0001, the Permittees shall individually, or in conjunction with the MSAR TMDL Task Force, prepare a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs. The first report shall be due February 15, 2010.

iii. The Pemittees shall conduct monitoring and reporting consistent with Section V.D. of this Order to evaluate the effectiveness of the BMPs implemented in the watershed and determine their progress towards attaining compliance with the interim WQBELs, and final BMP-based WQBELS, if approved, or the final numeric WQBELS/WLAs.

b. Big Bear Lake Watershed Wide Nutrient Monitoring Plan (Figure 4)

i. For each year of in-lake nutrient and water quality monitoring under the approved plans[6], the results shall be summarized in an annual report and submitted to the Executive Officer. The Big Bear Lake Nutrient TMDL annual report is due to the Executive Officer by February 15th of each year.

ii. Currently, the Big Bear Lake MS4 Permittees are meeting the WLAs. In the future, continued compliance with the phosphorus WLA will be determined by watershed modeling. By March 31, 2010, the Big Bear Lake MS4 Permittees shall submit a final watershed modeling plan that is ready to be implemented and that details how the WLA will be determined and evaluated in future years. Upon approval by the Executive Officer, this watershed modeling plan shall be used to determine compliance with the WLA. The Big Bear Lake MS4 Permittees shall select a watershed model that best fits the conditions they are modeling and document the basis for that selection. Data collected under the approved watershed monitoring program shall be evaluated by the Big Bear Lake MS4 Permittees to determine if it falls within the range of dry hydrological conditions as specified in the Nutrient TMDL. The Big Bear Lake MS4 Permittees shall

[6] The 2006 Integrated TMDL Implementation Program for Big Bear Lake QAPP applies to the existing monitoring plans: Big Bear Lake Monitoring Plan, Tributary Monitoring Plan, East End Nutrient/Sediment Removal Monitoring Plan, and Bacteria Monitoring Plan

utilize data collected from the monitoring locations specified in the watershed monitoring program approved on May 22, 2009, as well as any other data that are deemed necessary to calibrate and validate the watershed model. The Big Bear Lake MS4 Permittees will document the basis for the selection of the model, the data evaluation and selection process, and the model calibration/validation process. The Big Bear Lake MS4 Permittees or the Big Bear TMDL Task Force, shall provide the results of the first model update by February 15, 2011, and every three years thereafter.

iii. An iterative approach is appropriate to demonstrate compliance with the phosphorus WLA in drainage areas tributary to Big Bear Lake.

iv. If watershed modeling determines exceedances of the phosphorus WLA, despite implementation of the lake management plan and the MSWMP and other requirements of this Order, the Big Bear Lake MS4 Permittees shall comply with the following procedure:

1. Each Big Bear Lake MS4 Permittee[7] upstream of the monitoring locations shall evaluate and characterize discharges from its significant outfall locations.
2. The Big Bear Lake MS4 Permittees[8] shall submit a report with proposed actions to the Executive Officer that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce pollutants that are causing or contributing to the exceedances of the WLA.
3. The report may be incorporated into the storm water annual report.

2. LOW IMPACT DEVELOPMENT (LID) BMP MONITORING

The Principal Permittee shall continue to participate in data collection and monitoring to assess the effectiveness of LID techniques in semi-arid climate as part of the SMC project titled, "Quantifying the Effectiveness of Site Design/ Low Impact Development Best Management Practices in Southern California".

3. REGIONAL BIOASSESSMENT MONITORING (SCCWRP TECHNICAL REPORT 539[9])

The Principal Permittee, on behalf of the co-Permittees, participates (through a memorandum of understanding and cooperative agreements) with the 16 member agencies of the Storm Water Monitoring Coalition (SMC) Bioassessment Working

[7] This task may be completed by the Big Bear TMDL Task Force.
[8] This task may be completed by the Big Bear TMDL Task Force.
[9] "The Regional Monitoring of Southern California's Watershed SMC Bioassessment Working Group", SCCWRP, Technical Report No. 539, December 2007

Group to conduct bioassessments on a regional basis. The Principal Permittee in coordination with SCCWRP shall ensure that a sufficient number of monitoring stations are selected for this program from locations within the permitted area.

a. The objectives of the Regional Watershed Monitoring Program overseen by the State Board's Storm Water Ambient Monitoring Program (SWAMP) and the Storm Water Monitoring Coalition (SMC) and coordinated by the Southern California Coastal Water Research Project (SCCWRP) are:
   i. To assess the current status of streams in Southern California.
   ii. To identify major stressors to aquatic life.
   iii. To monitor the trend in water quality in Southern California streams.

b. The Principal Permittee, in collaboration with the SMC, shall conduct sampling, analysis, and reporting of specified instream biological and habitat data within the 5-year permit cycle according to the protocols specified in the SCCWRP Tech Report No. 539.

c. The bioassessment shall provide information about the biological integrity of receiving waters. Baseline and trend monitoring information on the biotic and geomorphological condition of the receiving waters shall be used to evaluate the effectiveness of the storm water pollution control measures.

d. The sampling sites in each watershed unit were determined according to distribution or abundance of the three land uses: urban, agriculture, or open. Within the San Bernardino County permitted area (considered as 1.5 watershed unit), the Principal Permittee, shall ensure the collection of at least 9 samples/year.

e. Sampling events shall be conducted between 4 to 12 weeks following the last significant rainfall. No sampling shall occur within 72 hours of any measurable rainfall. The default index period will be from May 15 to July 15.

f. For long-term trend monitoring, the Principal Permittee shall ensure the collection of a minimum of one sample per year during the dry weather index period from Station ID WW-S1, Santa Ana River Reach 3 at the MWD crossing. Additional samples may be collected to improve data quality for trend analysis. At a minimum, water chemistry and aquatic toxicity should be used as indicators for trend analysis.

g. The SCCWRP Technical Report No. 539 specifies six indicators as assessment tools, including aquatic toxicity using *Ceriodaphnia* d*ubia*, water flea. The aquatic toxicity studies shall be conducted using USEPA approved methods[10]. If conductivity is too high for survival of control organisms, then *Hyalella spp*, freshwater amphipod, may be used as a test species.

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VI. RECORD KEEPING REQUIREMENTS

A. All monitoring activities shall meet the following requirements :

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR 122.41(j)(1)]. Samples and measurements taken to meet the requirements of this permit shall be representative of the volume and nature of the monitored discharge, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality in the case of storm channels and flow quality in the case of streams and lakes. Representative sampling also includes development of a testable hypothesis, appropriate site selection, applicable and accepted sampling methodologies, laboratory methods, and frequency of sampling.

2. The Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports prepared as per this MRP and records of all data used to complete the Report of Waste Discharge and annual reports for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge [40 CFR 122.41(j)(2), CWC section 13383(a)].

3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

4. Calculations for all effluent limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this MRP [40 CFR 122.41(l)(4)(iii)].

5. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR 122.41(k)(2)].

VII. PROGRAM EFFECTIVENESS ASSESSMENT AND REPORTING

A. All progress reports and proposed strategies and plans required by this order shall be signed by the Principal Permittee, and copies shall be submitted to the Executive Officer under penalty of perjury.

B. The Principal Permittee has been monitoring urban runoff and receiving waters since the first MS4 permit term. It is recognized that some of the objectives noted in Section II may not have been fully attained during the previous MS4 permit terms. With the first annual report due after adoption of this Order, the Principal Permittee must submit an evaluation of the progress achieved to date and propose modifications to the monitoring program to achieve full compliance with the objectives of this monitoring program, discussed in Section II.

C. The Permittees shall be responsible for the timely submittal to the Principal Permittee of all required information/materials needed to comply with this Order. All such submittals shall be signed by a duly authorized representative of the Permittee under penalty of perjury.

D. The data transmittals to the Regional Board shall be in the form developed by the Storm Water 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 be universally shared and evaluated from various programs.

E. The Permittees shall submit an annual progress report to the Executive Officer and to the Regional Administrator of the USEPA, Region 9, no later than November 15th, of each year. This progress report may be submitted in a mutually agreeable electronic format. At a minimum, annual progress report shall include the following:

1. A review of the status of program implementation and compliance (or non-compliance) with the schedules contained in this Order;

2. An assessment of the effectiveness of control measures established under the illicit discharge elimination program and the Municipal Storm Water Management Plan (MSWMP). The effectiveness may be measured in terms of how successful the program has been in eliminating illicit/illegal discharges and reducing pollutant loads in storm water discharges;

3. As assessment of control measures and their effectiveness in addressing pollutants causing or contributing to an exceedance of water quality objectives in receiving waters that are on the 303(d) list of impaired waters. The effectiveness evaluation shall consider changes in land use and population on the quality of receiving waters and the impact of development on sediment loading within receiving waters and recommend necessary changes to program implementation and monitoring needs.

4. The annual report shall include an overall program assessment. The Permittees are encouraged to use the program assessment methodology described in the 2006 ROWD. The Permittees should determine, to the extent practicable, water quality improvements and pollutant load reductions resulting from implementation of various program elements. The Permittees may also use the "Municipal Storm Water Program Effectiveness Assessment Guidance" developed by the California Storm Water Quality Association in May 2007 as guidance for assessing program effectiveness at various outcome levels. The assessment should include each program element required under this Order, the expected outcome, and the measures used to assess the outcome. The Permittees may propose any other methodology for program assessment using measurable targeted outcomes.

5. The annual report shall include a status report on the development and implementation of the Hydromodification Monitoring Program developed as part of the WAP.

6. Each Permittee shall develop, update, implement, and review its local implementation plan (LIP) to address program modifications and improvements identified during the program assessment.

7. A summary and analysis of monitoring results from the previous year and any changes to the monitoring program for the following year;

8. A financial summary report as described in Section XIX.B of this order; including:
    a. Each Permittee's expenditures for the previous fiscal year;
    b. Each Permittee's budget for the current fiscal year;
    c. A description of the source of funds.

9. A draft workplan which describes the proposed implementation of the LIPs, and MSWMPs for next fiscal year. The workplan shall include clearly defined tasks, responsibilities, and schedules for implementation of the storm water program and each Permittee's action plans for the next fiscal year;

10. Major changes to any of the previously submitted plans/policies; and

11. An assessment of the Permittees compliance status with the Receiving Water Limitations, Section VI of the Order, including any proposed modifications to the MSWMP and WQMP if the Receiving Water Limitations are not fully achieved.

VIII. <u>REPORTING SCHEDULE</u>

All reports required by this Order shall be submitted to the Executive Officer in accordance with the following schedule:

Reporting Schedule (Order R8-2010-0036)			
Permit No.	**ITEM**	**COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.**	**REPORT DUE DATE**
III.A.1.n	Principal Permittee shall coordinate a review of areawide documents to determine the need for update or revisions	within 18 months of adoption of this Order	
III.A.1.0	Principal Permittee shall develop and implement a model Local Implementation Plan (LIP) each program element as described per the MSWMP	within 6 months of adoption of this Order	
III.A.2.a	Principal Permittee shall develop and implement a Principal Permittee-specific LIP, based on the areawide model LIP	within 18 months of adoption of this Order	
III.B.1	Permittees to develop and implement a Permittee-specific LIP for its jurisdiction. The LIP shall describe the Permittee's legal authority, its ordinances, policies and standard operating procedures; identify departments and personnel for each task and needed tools and resources.	within 18 months of adoption of this Order	
III.B.2.e	Each Permittee shall review its MS4 facility maps		Annually
III.C	Evaluate the storm water management structure and the Implementation Agreement and determine the need for any revision	as needed	Annually
V.A.17	Evaluate authorized discharges to determine if any are a source of pollutants	within 18 months of adoption of this Order	
V.C.2.i	Revise LIP consistent with findings from BB TMDL implementation activities	within 18 months of adoption of this Order	
V.D.1.	Submit MSAR reports of watershed-wide monitoring program	May 31, 2010 and Dec 31, 2010	
V.D.1	Submit MSAR comprehensive reports	Feb 15, 2010	Every three years from Feb 15, 2010
V.D.1	Submit MSAR semi-annual reports	January 31, & July 31	Annually
V.D.1.	Revise MSWMP	Nov 15, 2010	Annual report
V.D.1	Revise the WQMP	Nov 15 of every year	Annual report

Reporting Schedule (Order R8-2010-0036) Continued			
Permit No.	**ITEM**	**COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.**	**REPORT DUE DATE**
V.D.2	Prepare for approval the draft CBRP to achieve compliance for Dry Weather Conditions	December 31, 2010	
V.D.2	Submit Final version of CBRP	90 days after receiving comments from the Regional Board	
V.D.4	Submit a draft Lake Management Plan (Big Bear Lake Nutrient TMDL)	February 26, 2010	
V.D.4	Submit for approval Final Lake Management Plan (Big Bear Lake TMDL)	March 31, 2010	
V.D.4	Submit annual report summarizing data from water quality monitoring programs and evaluating compliance (Big Bear Lake TMDL)	February 15, 2010	Annually
V.D.4	Submit final watershed modeling plan to be implemented (Big Bear Lake TMDL)	March 31, 2010	
V.D.4	Provide results of the first model update	February 15, 2011	
V.D.4	Revise MSWMP, WQMP., LIP as necessary	November 15	Annual report
V.D.4	Submit report to EO describing BMPs to reduce sources of phosphorous	November 15	Annual report
V.D.4	Revise LIP to incorporate requirements from TMDL implementation		As necessary
V.D.5	City of Big Bear Lake continues to implement Phase 2 monitoring program	on-going	on-going
V.D.5	City of BBL shall review results of the pathogen investigation and observations and submit a final report to the Regional Board summarizing all data, information and efficacy of the BMPs in reducing bacteria in Knickerbocker Creek	completion of Phase 2 monitoring study	
VII.D	Promulgate ordinances that would specify control measures for known pathogen or bacterial sources such as animal wastes if those types of sources are present within their jurisdiction.	within three years of Order adoption	
VII.G	Review water quality ordinances and evaluate effectiveness	Annually	Annual Report
VII.J	Submit a certification statement in its annual Report, signed by legal counsel, that the Permittee has obtained all necessary legal authority	within one year of Order adoption	

Reporting Schedule (Order R8-2010-0036) Continued			
Permit No.	**ITEM**	**COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.**	**REPORT DUE DATE**
VII.K	Review adequacy of ordinances, implementation and enforcement response procedures with respect to the above items.	Annually	Annual Report
VIII.A	Develop new IC/ID program	within 18 months of adoption of this Order	
IX.F	Permittees with septic systems in their jurisdiction shall develop an inventory of septic systems within its jurisdiction and establish a program to ensure that failure rates are minimized	within two years of Order adoption	
X.A.2	Update database and inventory system containing inspections, facilities	at least once/year	Annually
X.A.3	Develop risk-based, compliance focused strategy for inspection of construction, industrial, and municipal facilities	within 18 months of Order adoption	
X.A.11	Document, evaluate and report the effectiveness of enforcement procedures in achieving prompt and timely compliance.	annually	Annual Report
X.D.6	Principal Permittee shall notify all mobile businesses operating within the County concerning the minimum source control and pollution prevention measures	Within 36 months of adoption of this Order	
X.D.7	Principal Permittee shall develop an enforcement strategy to address mobile businesses	Within 36 months of adoption of this Order	
X.E.7	Evaluate residential program effectiveness	After 3 years of implementation	
X.E.1	Each Permittee shall develop and implement a residential program to reduce the discharge of pollutants from residential facilities to the MS4s to the maximum extent practicable	Within 36 months of adoption of this Order	
XI.B.2	the Principal Permittee shall develop a Watershed Action Plan, Phase 1	Within 12 months of adoption of this Order	
XI.B.2	the Principal Permittee shall develop a Watershed Action Plan, Phase 2	Within 12 months of approval of Exec, Officer of Phase 1 report.	

Reporting Schedule (Order R8-2010-0036) Continued			
Permit No.	**ITEM**	**COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.**	**REPORT DUE DATE**
XI.B.4	Review the watershed protection principles and policies in the General Plan or related documents (such as Development Standards & Project Guidance, Zoning Codes, Conditions of Approval,) to determine consistency with the Watershed Action Plan.	Within 12 months of Order adoption	Annual Report
XI.B.4	Report the above findings and schedule of revisions	Annually	Annual Report
XI.B.5.a	Complete WAP Phase 1	Within 12 months of permit adoption	
XI.C.4	Each Permittee shall incorporate the results of the above information into its LIP and its project approval process.	Within 24 months of adoption of this Order	
XI.D.2	Principal Permittee shall coordinate the revision of the WQMP Guidance and Template to include new elements required under this Order.	Within 18 months of adoption of this Order	
XI.E.1	Each Permittee shall identify barriers to implementing LID	Within 18 months of adoption of this Order	
XI.E.2	Provide Regional Board copy of municipality's report to DWR	Simultaneous with notification to DWR	
XI.E.5	Review and update the Water Quality Management Plan Guidance and Template to incorporate LID principles	Within 18 months of adoption of this Order	
XI.F	Develop standard design and PCBMP guidance for municipal road projects	Within 24 months of adoption of this Order	
XI.E.9	A copy of the updated Water Quality Management Plan Guidance and Template shall be submitted for review and approval by the Executive Officer.	Within 18 months of adoption of this Order	
XI.G.1	Permittees may grant waiver of BMPs with justification documents to the EO	Within 30 days prior to Permittee approval	
XI.H	Develop and implement standard procedures and tools, such as WQMP checklist, project close-put procedures, and include in the LIP.	Within 18 months of adoption of this Order	
XI.I	Conduct follow-up inspection of the post-construction BMPs	Prior to the rainy season within 3 years	Every 3 years thereafter.
XI.J	Establish mechanism to track project ownership	within 18 months of adoption of this Order	

Reporting Schedule (Order R8-2010-0036) Continued			
Permit No.	**ITEM**	**COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.**	**REPORT DUE DATE**
XI.K.2	The Permittees shall develop a database to track operation and maintenance of post-construction BMPs.	Within 12 months of adoption of this Order	
XII.E	The Permittees shall develop and maintain BMP guidance for the control of those potentially polluting activities including guidelines for the household use of fertilizers, pesticides, herbicides and other chemicals, and guidance for mobile vehicle maintenance, carpet cleaners, commercial landscape maintenance, and pavement cutting.	Within 12 months of adoption of this Order	
XIII.E	Permittees' shall evaluate,, the inspection and cleanout frequency of drainage facilities,		
XIII.F	The Principal Permittee shall submit a proposal for additional retrofit studies that incorporates opportunities for addressing any applicable TMDL implementation plans, hydromodification management and/or LID implementation within the permitted area.	Within 12 months of adoption of this Order	
XV.A	Revise LIPs to include the Permittee's information on its de minimus discharges	Within 18 months of adoption of this Order	
XVI.A.1 & 2	Develop a training program including a training schedule, curriculum content, and defined expertise and competencies for storm water managers, inspectors, maintenance crew, municipal contractors, those involved in the review and approval of WQMPs, and those preparing and/or reviewing CEQA documentation	Within 36-48 months of adoption of this Order	Nov 15
XVI.D	Provide and document training to applicable public agency staff on the updated Municipal Activities and Pollution Prevention Strategy (MAPPPS). and any other applicable guidance and procedures	Annually	Annual Report
XVI.H	Each Permittee shall adequately train any of its staff involved with storm water related projects and the implementation of this Order	Within 6 months after assignment then annually prior to rainy season	Annual report
XVIII.B	Permittees shall evaluate the MSWMP to determine the need for any revisions in Order to reduce pollutants in MS4 discharges to the maximum extent practicable.	Annual Report	October 1

Reporting Schedule (Order R8-2010-0036) Continued			
Permit No.	**ITEM**	**COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.**	**REPORT DUE DATE**
XVIII.B	Permittees shall evaluate the MSWMP to determine the need for any revisions in Order to reduce pollutants in MS4 discharges to the maximum extent practicable.	Annual Report	October 1
XIX.B	Prepare and submit a financial summary to the Executive Officer of the Regional Board	Annually	Annual Report
XXII.A	Prepare and submit ROWD permit renewal application		No later than 180 days of Permit expiration
MRP IV. A	Review, revise as needed, and submit the Integrated Watershed Monitoring Plan (IWMP) for review and approval by the Executive Officer.	Within 12 months of adoption of this Order	
MRP IV.B.3.b	Submit a plan to determine baseline concentrations of N/TDS	Within 18 months of Order adoption	
MRP V. B.1.a	Revise the MSWMP to incorporate a plan and a schedule to achieve necessary triennial bacterial source reduction for meeting the phosphorus indicator WLAs	February 15, 2010	Annual Report

Date:_____ Ordered by_____

Gerard J. Thibeault
Executive Officer

Figure 1: Current Stormwater Core Monitoring Stations (Sites 2, 3, 5, 8, and 10)

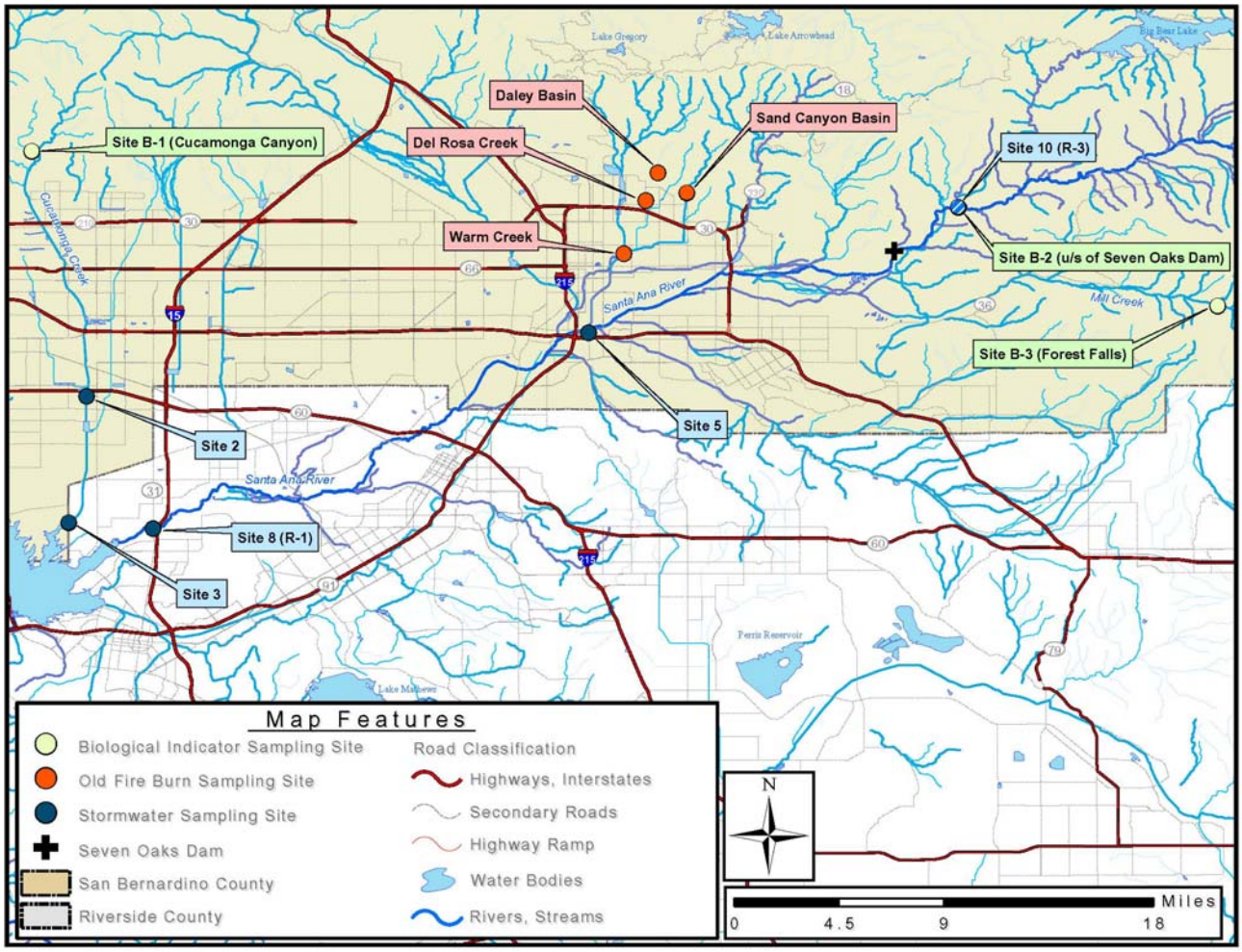

Figure 2: MSAR TMDL Watershed-wide Monitoring Locations

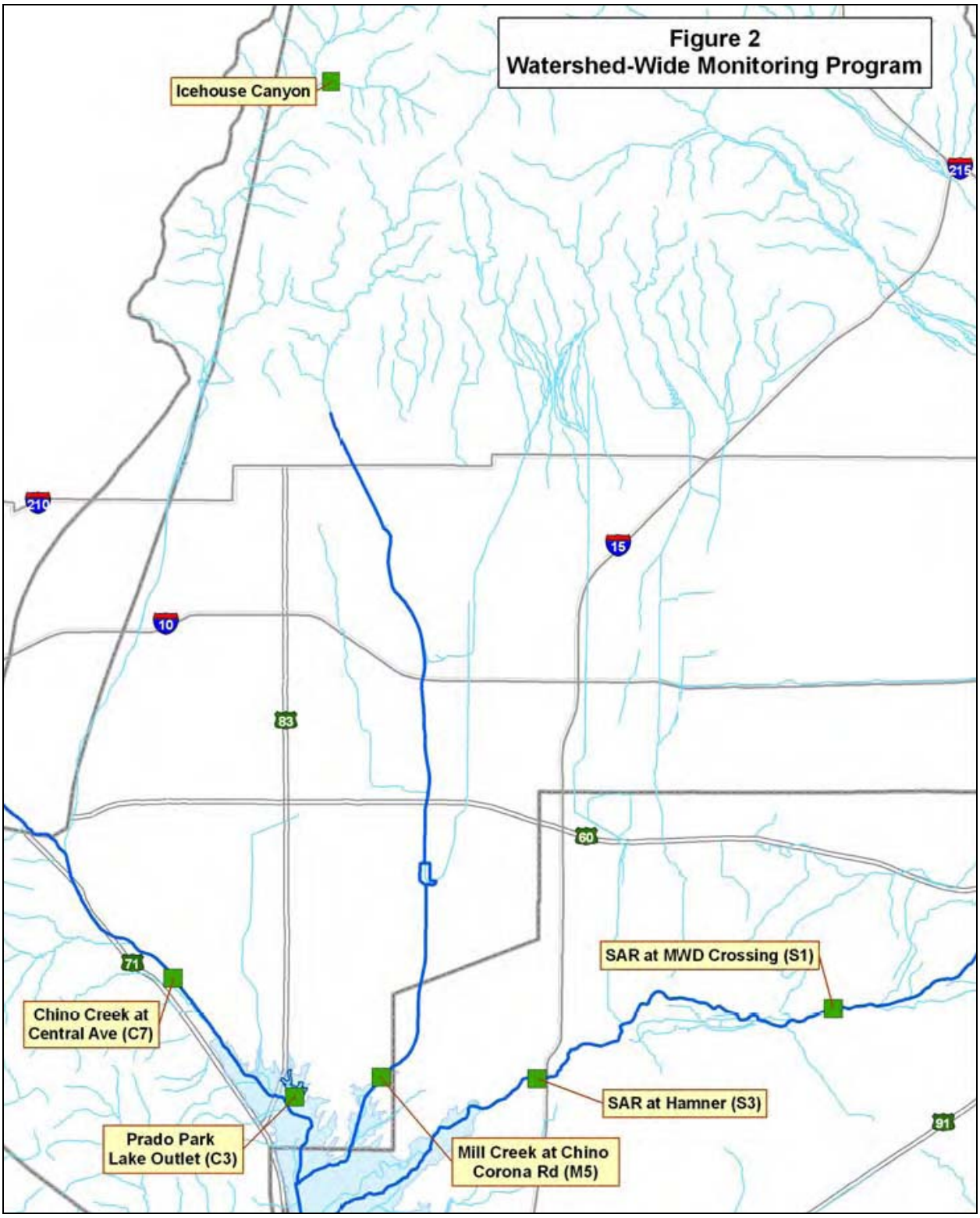

Figure 3: MSAR TMDL USEP Monitoring Locations

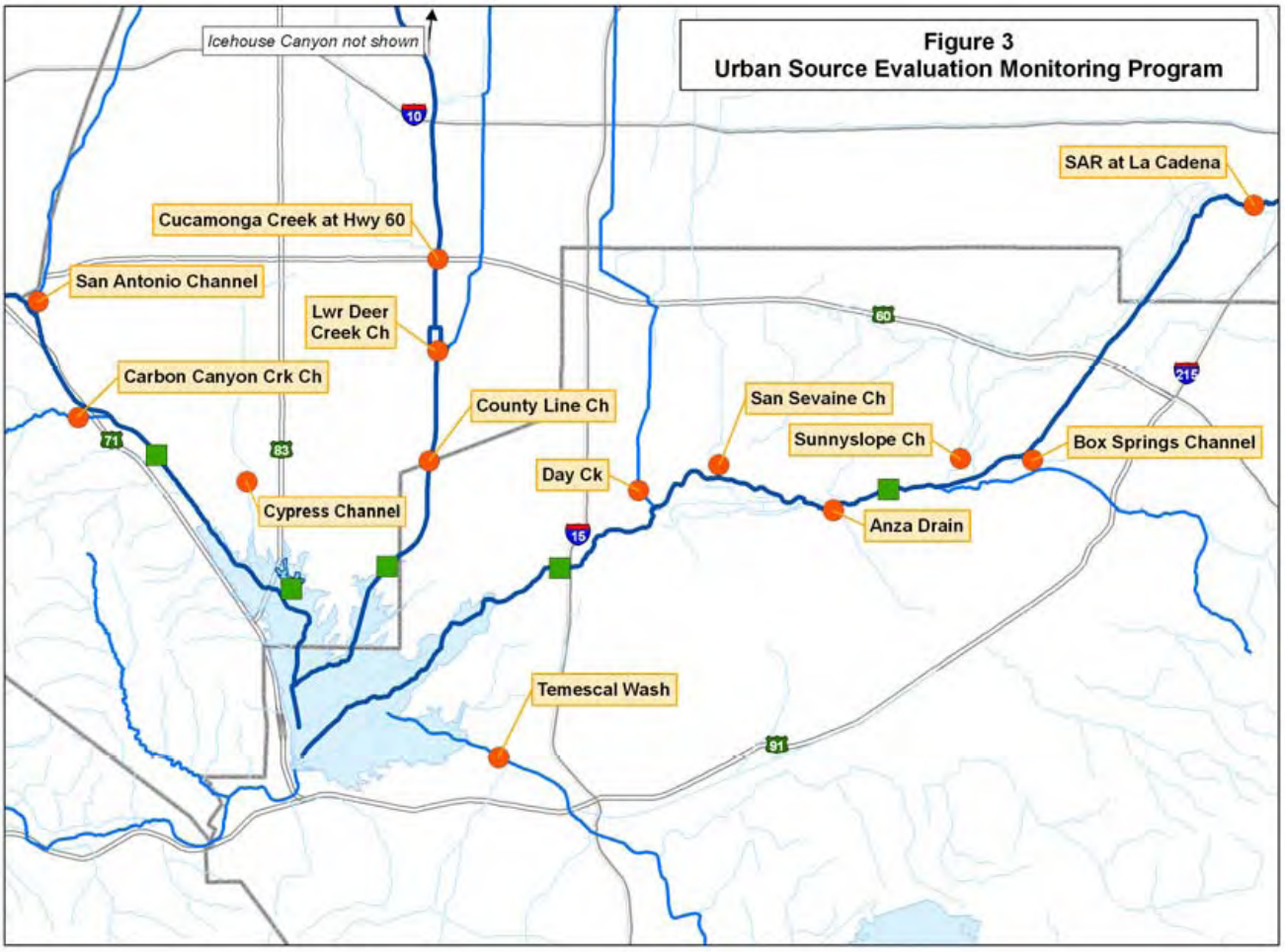
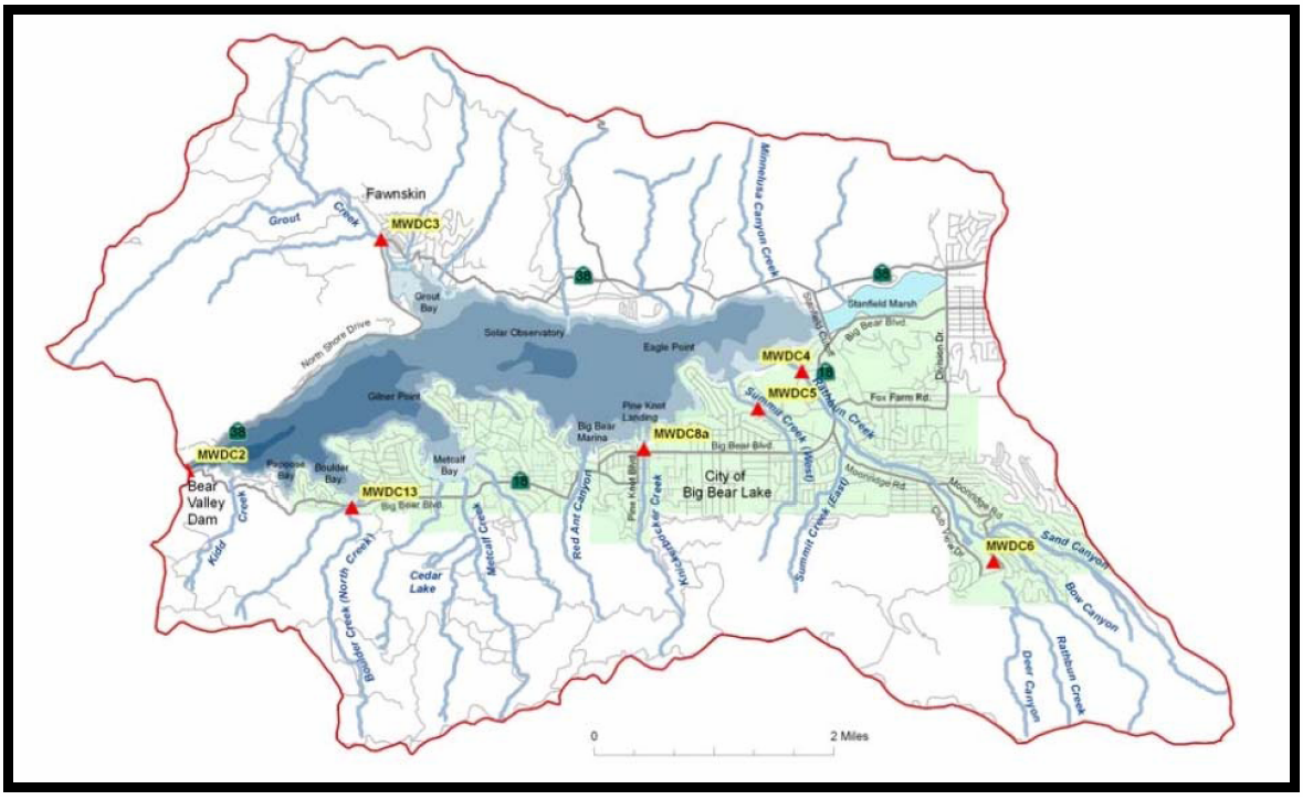
Figure 4. Big Bear Lake Nutrient TMDL Watershed-Wide Monitoring Locations