

State of California
Regional Water Quality Control Board
San Diego Region

EXECUTIVE OFFICER SUMMARY REPORT
June 9, 2010

- ITEM: 6
- SUBJECT: Resolution requesting funding from the State Water Pollution Cleanup and Abatement Account (CAA) for the Lake San Marcos Nutrient Diagnostic and Cleanup Planning Study. (Tentative Resolution No. R9-2010-0079 - Supporting Document No. 1) (*Chiara Clemente*)
- PURPOSE: To consider adoption of tentative Resolution No. R9-2010-0079 requesting State Water Resources Control Board approval of funding from the CAA for the Lake San Marcos Nutrient Diagnostic and Cleanup Planning Study.
- PUBLIC NOTICE: Notice was provided in the agenda mailing and posted on the San Diego Water Boards website.
- DISCUSSION: Project Location And Background
- Lake San Marcos (Lake) is located within the Upper San Marcos Creek Watershed (Watershed) in the Carlsbad Hydrologic Unit. The Watershed is approximately 29 square miles and is comprised of two hydrologic subareas (HSA); Twin Oaks HSA and Richland HSA. (See supporting Doc 2). The primary water bodies in the Watershed are Upper San Marcos Creek (the "Creek") and the Lake. The Lake is the product of a dam that was built in 1953 through San Marcos Creek. The impoundment was originally used for agricultural irrigation, but the area was later developed, and the water rights appropriation was transferred to the Citizen's Development Corporation (CDC) for the current irrigation of its lakeside golf course. The Lake is still subject to agricultural discharges from surrounding groves, but the majority of the Lake watershed now consists of commercial and residential land use.
- The State's 2006 Clean Water Act 303(d) list of impaired water body segments, list the Lake as impaired due to ammonia as nitrogen, phosphorous, and nutrients; and the Creek as impaired due to phosphorous, DDE, toxicity, sediment toxicity, and selenium. The Lake has been subject to periodic algal blooms, confirmed presence of cyanobacteria toxins, and occasional fish kills likely due to the confirmed presence of excessive nutrients in the water. Residents living near the Lake have reported algae blooms and nuisance odor conditions to the Regional Board for several years.

Due to the wide range of potential contributors, it has been difficult to determine how to abate the Lake impairments. Throughout the years, nutrient deposition has been an enduring problem for the Lake. Preliminary studies include an analysis of existing data on Lake water quality. This study identified that substantial gaps remain in the knowledge and understanding of internal Lake processes, watershed nutrient sources, and watershed hydrology. These gaps in knowledge must be addressed before a comprehensive Lake cleanup plan can be developed and implemented.

Project Need

The Lake San Marcos Nutrient Diagnostic and Cleanup Planning Study (the "Study") is a more robust investigative effort needed to further assess nutrient sources to the Lake, understand in-lake processes, and develop a cleanup plan for remediation of the nutrient impairment to the Lake.

The Study represents a component of the overall strategy to cleanup the Lake. The City of San Marcos (the "City") and other parties¹ will use the information gathered from the Study to develop a comprehensive plan for nutrient abatement and cleanup to restore the beneficial uses of the Lake. When completed, the Study will be used to determine the most appropriate method for cleanup of the Lake and restoration of the Lake's beneficial uses.

The City and other parties¹ have already contributed significant resources to a preliminary assessment of the Lake's impairments. Work to date occurred within a consensual framework and was not the result of a Board directed enforcement order. The proposed Study will be conducted under this same consensual framework by the City with support from the other parties as evident by their letters of support (Supporting Document No. 5). This Study is the first step towards cleanup and abatement of the Lake nutrient impairments, which has, thus far, been carried out by all the current parties voluntarily using the Total Maximum Daily Load approach as a model, in lieu of a Board directed Investigative Order and/or other enforcement action.

Scope of Work

The City of San Marcos is applying for the CAA funds and will manage the Study in coordination with the other parties. The length of the proposed Study will be 2 years from the time the

¹ Other parties currently include: County of San Diego, City of Escondido, California Department of Transportation, San Marcos Unified School District, Vallecitos Water District, Community Development Corporation, Lake San Marcos Remediation Group, Lake San Marcos Task Force, Lake San Marcos Community Association, Batiquitos Lagoon Foundation, San Diego Coastkeeper, and Coastal Environmental Rights Foundation.

funding agreement is executed. The cleanup and abatement effort will be completed in subsequent phases thereafter. Timing of the cleanup will depend on the cleanup method(s) selected.

The Scope of Work is included as Supporting Document No. 3.

Budget

The budget is included on page 11 of Supporting Document No. 3. The overall cost of the Study is estimated to be \$969,576, broken down as follows:

BUDGET ESTIMATE

Task Scope Items Costs

A. Monitoring and Research

1. *Determine Modeling Approach* \$59,500
2. *Understand Water Budget* \$200,000
3. *Understand Nutrient Budget* \$190,000
4. *Calculate External Nutrient Loadings* \$15,000
5. *Understand In-Lake Processes* \$333,849

B. Data Analysis and Interpretation \$70,000

C. Feasibility Study/Cleanup Implementation Planning \$50,000

1. QAPP and Monitoring Plan (SWAMP-Compat.) \$24,000
2. Project Management/Administration \$47,117

TOTAL: \$989,466

Project Submittals

The intended outcome of the Study is a Cleanup Implementation Planning Document (Cleanup Plan). The Cleanup Plan will rank the abatement and mitigation measures most likely to produce measurable reductions in nutrient loadings to the Lake and/or improvements in in-Lake nutrient concentrations based on the data obtained. The Cleanup Plan will include a priority-ranked list of specific measures expected to result in demonstrable improvements in Lake water quality.

Based on these considerations, by memorandum dated May 27, 2010 the San Diego Water Board Executive Officer requested that the State Water Board approve an allocation of \$969,576 from the CAA to the City of San Marcos to conduct a more robust investigation and to develop a cleanup plan to address the nutrient impairments in the Lake. CAA funding procedures provide that the Executive Officer's request should be followed up with a San Diego Water Board resolution of support.

LEGAL CONCERNS:

None.

SUPPORTING
DOCUMENTS:

1. Tentative Resolution No. R9-2010-0079
2. Project Area Map
3. Lake San Marcos Nutrient Diagnostic and Cleanup Planning Study Scope of Work, Budget, and Schedule
4. Executive Officer Request For Cleanup and Abatement Funds for Lake San Marcos Nutrient Diagnostic and Cleanup Planning Study
5. Letters of Support

RECOMMENDATION(S):

Adoption of the Resolution No. R9-2010-0079 is recommended.