

**REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**EXECUTIVE OFFICER SUMMARY REPORT  
OCTOBER 9, 2019**

**ITEM 5**

**SUBJECT**

Informational Item: Case Status Update for Lake San Marcos and Upper San Marcos Creek Watershed (*Sarah Mearon*)

**STAFF RECOMMENDATION**

Informational item only; no recommendation.

**KEY ISSUES**

Lake San Marcos is a seasonally stratified reservoir impaired by elevated phosphorus and nitrogen, excess algal growth, and low dissolved oxygen. The lake and San Marcos Creek, upstream and downstream of the lake, are on the California 303(d) list of impaired water bodies for a number of pollutants. These impairments interfere with the recreation and habitat beneficial uses of the lake. The Site Restoration Unit has provided oversight for this case since 2015.

**PRACTICAL VISION**

This item is consistent with the goals of the Recovery of Stream, Wetlands, and Riparian Areas Chapter of the Practical Vision. This chapter is dedicated to providing measurable improvements in the extent and health of stream, wetlands, and riparian systems, in this case improvements and restoration of Lake San Marcos and the Upper San Marcos Creek watershed.

**DISCUSSION**

Citizens Development Corporation (CDC), along with the County of San Diego, the Cities of San Marcos and Escondido, and Vallecitos Water District (collectively, the Parties), are cooperatively and voluntarily working on restoration of Lake San Marcos and Upper San Marcos Creek with San Diego Water Board oversight and in accordance with Board Resolution No. R9-2017-0038. The Resolution affirms the Board's expectations that project activities be effective and proceed as expeditiously as possible. The Parties prepared a Remedial Investigation/Feasibility Study Report in 2016 that includes recommendations for lake and watershed restoration measures.

Pilot testing in the lake and watershed is ongoing and will evaluate the effectiveness of remedies selected in the Feasibility Study to restore water quality and beneficial uses. Pilot testing of phosphorus inactivation amendments was conducted in the lake between May 2017 and July 2019 and consisted of three alum applications and one Phoslock application. Watershed pilot testing of in-stream remedies was conducted during the 2018-2019 wet season and consisted of (1) a phosphorus inactivation pilot at the mouth of the upper creek, and (2) infiltration testing at an existing flood control basin located about 4 miles upstream of the lake. Additional pilot testing is planned through 2020 and will include installation and testing of a lake aeration system and modified selective withdrawal system, which will work in combination to increase lake circulation, prevent stratification,

and improve oxygenation.

The Parties will use pilot testing results to develop Corrective Action Plans, which will be prepared in consideration of potential downstream water quality impacts, consistent with the Resolution. Final versions of the Plans are anticipated to be submitted to the Water Board between April 2020 and January 2021 for implementation starting 2021. Once approved by the Water Board, the Plans will be implemented and water quality will be monitored to verify that improvements are being realized.

Consistent with the Resolution, the parties also conducted downstream water quality monitoring in July 2018 (dry weather conditions) and winter 2018-2019 (wet weather conditions) to assess water quality at the dam and downstream of the lake. Data were used to compute estimated loading rates under various conditions. Data analysis considered impacts from water overtopping the dam and also flowing through the open dam valve. Data showed that wet weather loads change during the course of a storm, and downstream water quality is highly dependent on whether the lake is stratified. For example, downstream nutrient loading was significantly higher during a May storm at which point the lake was stratified.

At the request of Board staff, CDC has prepared a Lake Management Plan that outlines current and future lake management practices. The Plan, in combination with remedies to be implemented in the Upper San Marcos Creek Watershed, aims to fully restore and maintain beneficial uses by establishing a framework for long-term water quality management. Board staff are currently reviewing the Plan.

The Parties' technical representatives will present information regarding the pilot test and downstream monitoring and summarize the path forward for the case.

### **LEGAL CONCERNS**

None.

### **PUBLIC NOTICE**

The meeting notice and agenda for the October 9, 2019, meeting was posted on the Board's website and sent to those who subscribe to the email list for Board meetings. This satisfies the Bagley-Keene Open Meeting Act requirements to publish the meeting notice and agenda.

### **SUPPORTING DOCUMENTS**

Figure 1: Upper San Marcos Creek Watershed

Figure 2: Lake San Marcos