

**MEETING NOTES
OF THE
LAKE ELSINORE/CANYON LAKE TMDL TASK FORCE
May 16, 2017**

PARTICIPANTS

Chris Stransky
Richard Meyerhoff
Steven Wolosoff
Nancy Horton
Rae Beimer
Daniel Cortese
Melanie Sotelo
Rita Thompson
Jamie Richards
Cynthia Gabaldon
Mike Roberts
Lynn Merrill
Steve Horn
Sudhir Mohleji
Parag Kalaria
Lauren Sotelo
Ankita Vyas
Mark Smythe
Ken Theisen
Eric Lindberg
Tim Moore
Mike Venable
Kyle Gallup
Pat Boldt
Mark Norton
Dawna Munson

REPRESENTATIVE

Amec Foster Wheeler
CDM Smith
CDM Smith
City of Canyon Lake
City of Canyon Lake / Moreno Valley
City of Hemet
City of Hemet
City of Lake Elsinore
City of Menifee
City of Perris/MJPA
City of Riverside
City of San Jacinto
County of Riverside
Elsinore Valley MWD
Elsinore Valley MWD
March JPA
Michael Baker/Caltrans
Regional Water Quality Control Board
Regional Water Quality Control Board
Regional Water Quality Control Board
Risk Sciences
Riverside County Flood Control & WCD
Riverside County Flood Control & WCD
WRCAC
Santa Ana Watershed Project Authority
Santa Ana Watershed Project Authority

Via Conference Call:

Al Javier
Nicole Daily
Steve Pastor

EMWD
City of Lake Elsinore
Riverside County Farm Bureau

Call to Order & Introductions

The Lake Elsinore/Canyon Lake TMDL Task Force meeting was called to order at 1:33 p.m. by Mark Norton at the Santa Ana Watershed Project Authority, Riverside, California.

Meeting Notes

The Task Force deemed the Meeting Notes acceptable for the meeting held on April 19, 2017.

Recommendation: Amec Foster Wheeler Change Order Approval (LESJWA Staff)

**San Francisco Estuary Institute Satellite Imagery Tool (Amec Foster Wheeler) /
High Resolution Satellite Imagery (Risk Sciences)**

Chris Stransky/Amec Foster Wheeler discussed the work by the San Francisco Estuary Institute (SFEI) for the State to evaluate chlorophyll a concentrations for the State's major reservoirs using satellite imagery. The State is looking to develop a better screening method for hazardous algal blooms (HABs) using satellite imagery. Mr. Stransky noted that the satellite imagery used by the State to screen for HABs is of much lower resolution (300m) than is currently being collected by the TMDL Task Force (30m), and cannot be used for purposes of the TMDLs.

Tim Moore commented on the good news that the use of satellite imagery is much more widely accepted now compared to years ago. It's also good that a lot of historical data for Lake Elsinore is included in this work by SFEI for the State, which he has requested to obtain. Further, according to the State's draft website, it indicates that they intend to have all the data from 2012 to current, which will be very useful.

He would like to compare our high-detail resolution data (30m) to their low-detail resolution data (300m). Their data is reported in a tabular form as compared to what we do in pixel graphs, which provides a better way for us to examine the data all at once. The value to the Task Force is that the State's dataset can be used to validate our efforts using the satellite imagery. This will be important to the Task Force when it comes time to defend the new TMDL against the old, as it will give us some additional data support.

Chris Stransky discussed the use of high resolution satellite imagery available from the recently launched Sentinel 2A satellite, which delivers imagery with higher 10-m resolution that would help the Task Force to resolve issues with data collected for the narrow east arm of Canyon Lake.

He noted that it has frequently been observed that satellite derived concentrations of chlorophyll-a in the far eastern end of Canyon Lake's eastern arm are frequently much higher than those in other areas of the eastern arm. These concentrations are sometimes 3-4 times higher than concentrations measured directly through analytical water samples. After discussions with EOMAP, the satellite imagery vendor, it was suspected this was due to edge interference where pixels around the edges of the lake mix both water and land data to create a "composite" value representing chlorophyll-a near the edges. LandSat 7/8 uses 30 meter (m) pixel resolution and requires a minimum mapping size of three pixels (90-m) to generate a valid concentration. The far eastern arm of Canyon Lake is below this minimum size in most places.

A drawback of Sentinel 2A is its vulnerability to "sunglint" during the summer months caused by the viewing geometry. The image area is located in the eastern part of the Sentinel 2A scene coverage, and therefore the satellite "looks" into the direction of the sun during recording of the image. This viewing angle, together with the sun geometry during peak summer months, leads to a direct reflection of sunlight from the water surface to the satellite (sunglint), thereby causing QA issues. For this reason, they recommend using the former LandSat 7/8 satellite for imagery during the months of June through August, and Sentinel 2A during the other months of the year.

A question arose if it's a benefit to use both satellites. Chris Stransky replied there are a couple types of toxins that will be measured. The Sentinel satellite will give a better quantification of how much blue green alga is there. The satellite image takes the same picture, but uses different filters to provide the resolution of the blue green algae. Tim Moore added that it would help provide a better prediction as to whether or not an algae situation in the lake should be posted.

Mark Norton reviewed the change order proposal by Amec Foster Wheeler. The total additional cost would be \$2,743 to incorporate the additional high resolution satellite imagery, along with satellite imagery and processing for the cyanobacteria specific pigments for phycocyanin and phycoerythrin into the analyses of in-lake chlorophyll for the annual compliance monitoring report.

Upon motion by Pat Boldt, seconded by Nancy Horton, the Task Force unanimously approved preparation of a Change Order with Amec Foster Wheeler in the amount of \$2,743 to incorporate higher resolution satellite imagery and satellite cyanobacteria bloom monitoring.

Discussion: Update and Revise TMDLS (Risk Sciences/CDM Smith)

Tim Moore/Risk Sciences displayed a presentational review of how the old and new TMDLs evolved, and provided a reference for what the TMDL looks like today compared to the new one.

Steve Wolosoff/CDM Smith next provided a PowerPoint presentation on the changes from the 2004 TMDL, for Canyon Lake and Lake Elsinore.

A direct website link is provided below to access the presentations given at the meeting:

<http://www.sawpa.org/wp-content/uploads/2012/05/Risk-Sciences-CDM-Presentations-5-16-17.pdf>

Lake Updates

Lake Elsinore

Rita Thompson stated that water level currently is 1239.69, but lake levels continue to drop due to evaporation, so of course more rain is needed. The recreation supervisor informed them that the water looks the best they've seen in a while.

Mark Norton asked about the carp increase. Nicole Daily/City of Lake Elsinore said the water still looks very green in terms of algae and they've seen more of the carp. The carp netting was last done in 2008, so there's been some discussion as to whether that should be done again, but there's concern about the impact to the TMDL. Removing the fish probably would reduce their loads. The suggestion was that netting be done on a bi-annual basis. However, they want to make sure that when they're stocking fish, they're helping the TMDL. They anticipate losing another 2-3 feet water during the summer.

Rita Thompson added that they will be taking the License Agreement to the City Council on May 23.

Canyon Lake

Nancy Horton reported that the lake level is at 1328, and that there definitely has been an increase in carp. The Bass Masters are considering holding a tournament for children, where they'd get a reward to catch carp, which later would be turned into fertilizer. There also has been some interest in doing a fish survey on the fish size. The POA is discussing purchasing fish, as the fishermen are reporting that the fish have been small; a speciation would help verify that. They've also discussed having a speciation survey done and will research obtaining a company to do that work. Mark Norton suggested checking with the Department of Fish & Wildlife for a contact. Chris Stransky noted that Amec Foster Wheeler also does that type of work, and they would coordinate with Department of Fish & Wildlife.

Task Force Administration (LESJWA Staff)

Mark Norton reminded the Task Force about taking Amendment 1 to their respective Boards and returning it to SAWPA by June 30, 2017.

Other Business

There was no other business discussed.

Schedule Next Meeting

The next LE&CL TMDL Task Force meeting is scheduled for Tuesday, June 13 at 9:30 a.m. at SAWPA.

Adjourn

The meeting adjourned at 4:04 p.m.