



Technical Tasks to Support Revision of the TMDL	Status
1) Update lake models to account for slow decay rate for phosphorus (Anderson)	
2) Update Lake Elsinore model to include interaction between zooplankton and algae and salinity limitations on zooplankton (Anderson)	
3) Update watershed runoff sourcing spreadsheet to account for subsidence in Mystic Lake	
4) Recalculate natural (pre-development) exceedance frequency, under long-term (50-100 year) conditions, using high resolution precipitation probabilities and dynamic lake level assumptions (Anderson)	
5) Update source load estimates using watershed runoff <u>spreadsheet</u> using: <ul style="list-style-type: none"> <li>a. best available land-use data</li> <li>b. refined precipitation probabilities (replaces approach based on 3 archetypical years)</li> <li>c. discharge prohibitions in current CAFO permits</li> <li>d. LID and On-site Retention requirements in MS4 permits</li> <li>e. Previous BMPs (incl. diversions) by MS4's and WRAC</li> <li>f. Exemption for Ag operations &lt;20 ac.</li> </ul>	
6) Calculate zero-based loading capacity (w/o aeration system or recycled water) using dynamic lake model; estimate time to re-attainment under natural (pre-development) conditions (Anderson)	
7) Revise response targets (algae & DO) using dynamic lake level assumptions (Anderson)	
8) Recalculate the causal targets (phosphorus and ammonia) needed to achieve revised response targets (Anderson)	
9) Revise ammonia targets based on EPA's new 304(a) criteria (Reg. Bd. staff)	
10) Define appropriate spatial and temporal averaging periods for DO and Chlorophyll-a (Cumulative Distribution Function: % of area, % of time)	
11) Re-run long-term pre-development simulation with addition of recycled water to Lake Elsinore (at various N & P levels) but w/o aeration system (Anderson)	
12) Re-run long-term pre-development simulation, including aeration operation, with and without addition or recycled water (Anderson)	
13) Estimate current fish populations and equivalent phosphorus load reduction credits for the fishery management program (carp control and hybrid striped stocking)	
14) Estimate total loading from watershed to both lakes (2011-present) using updated sourcing spreadsheet and actual precipitation data (SAWPA)	
15) Estimate total mass of phosphorus neutralized by alum project (incl. sediment flux studies to support effectiveness demonstration)	
16) Update and revise Waste Load Allocation and Load Allocation	
17) Revise water quality monitoring plan for both lakes (Haley & Aldrich) <ul style="list-style-type: none"> <li>a. Attainment metrics (response targets, causal targets)</li> <li>b. Trend metrics (progress toward attainment; interim milestones)</li> </ul>	
18) Revise water quality monitoring plan for watershed runoff (Haley & Aldrich) <ul style="list-style-type: none"> <li>a. Compliance metrics (Total loading, WLA &amp; LA)</li> <li>b. Trend metrics (progress toward attainment; interim milestones)</li> </ul>	



**Other TMDL Revisions Needed to Support Implementation**

- 1) Define attainment of response targets as "de facto" compliance w/ TMDL, WLA & LA
- 2) Authorize offset & trading options
- 3) Authorize in-lake remediation projects to increase assimilative capacity
- 4) Establish performance-based compliance options with interim progress milestones
- 5) Develop long-term compliance schedule

**TMDL Development Schedule**

1) Complete Technical Support Studies	FY2014-16
2) Draft Revised TMDL Documents a. Basin Plan Amendment b. Staff Report	FY2016-17
3) Regional Board Approval Process a. Peer Review b. CEQA: Substitute Environ. Doc. c. Economic Analysis d. Workshops/Hearings e. Response to Public Comments	FY2017-18
4) SWRCB/OAL/EPA Review	FY2018-19

10/7/14



Potential Follow-on Projects for Discussion	Canyon Lake	Lake Elsinore
1) Increase TP neutralization at EVMWD beyond permit limits		X
2) Hypolimnetic Oxygen System (HOS)	X	X
3) Copper sulfate for algae control	X	No
4) Hydrogen peroxide for algae control and DO	X	
5) Increase circulation thru East Bay	X	
6) Alum applications below Canyon Lake during low-pH conditions		X
7) Phoslock	X	X
8) Upstream diversions	X	
9) Canyon Lake drawdown (to reduce transfers to Lake Elsinore)		X
10) Dredging (esp. high organic silts)	X	X
11) Dye Shading	X	X
12) Active Aquatic Plant Management	X	X
13) Increase recycled water	No	X
14) Pump-n-Treat	X	X
15) Constructed wetlands	X	X
16) Enhanced fishery management		X
17) Lake stabilization or circulation w/ Colo. River Water	X	X
18)		
19)		
20)		