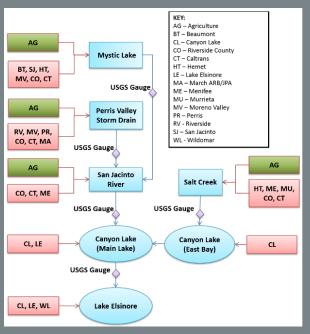
1265 Elsinore £ 1260 Elevation Menifee 1245 1240 1235 1230 1225 1970 1995 1795 1820 1845 1870 1895 1920 1945 Source analysis for Source assessment reference watershed USGS Stream Gauge Lake model for Linkage analysis reference watershed Narrative Numeric Applicable Basin Plan objective objective (DO. water quality objectives (Algae) TIN, NH₃) CDF of chlorophyll-a CDF of lake volume concentration in TMDL numeric targets meeting numeric epilimnion over time

LECL TMDL Task Force Update to TMDL Revision

Project Status Update July 23, 2024



Agenda

- Review of TMDL revision
- Status Update on Task 5 Study

Table ES-11. Demonstration of Compliance with 2004 TMDL Allocations (LESJWA 2021)

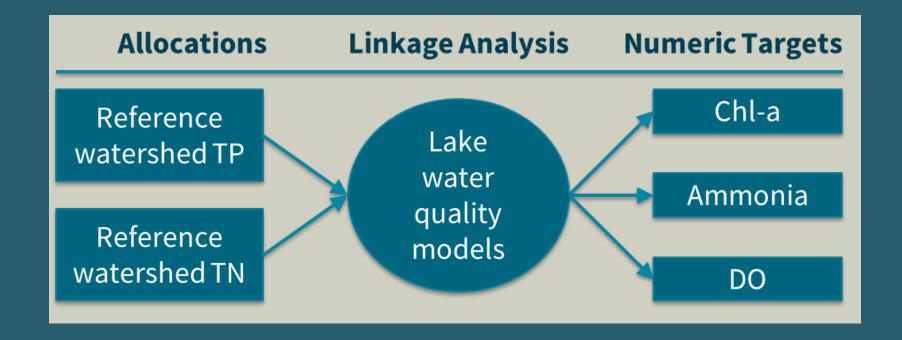
Average Annual Nutrient Load over 2011-2020 (kg/yr)	Canyon Lake		Lake Elsinore		
	TP	TN	TP	TN	
Measured External Load	5,871	15,743	5,250	33,060	
Allocation to Watershed in TMDL ¹	-3,845	-22,268	-6,922	-29,953	
In-Lake Offsets	-2,079	0	-7,030	-44,000	
Additional Load Reduction Required ²	-53	-6,525	-8,702	-40,893	

¹⁾ TMDL minus allocations for internal sediment and atmospheric deposition.

²⁾ If ≤ zero, compliance with final allocations in TMDL for all watershed sources is effectively demonstrated



Review TMDL Revision





Allocations based on a reference watershed

 Phase II study to collect more data from Cranston and other reference sites

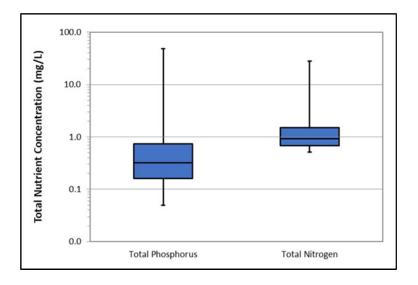


Table 3-2. Summary Statistics from Reference Watershed Site, San Jacinto River at Cranston Guard Station

Metric	TP (mg/L)	TN (mg/L)	
Range of Samples	0.05 – 48.00	0.51 – 27.78	
Range of Event Means ¹	0.11 – 10.13	0.58 – 7.09	
25 th Percentile of Samples	0.16	0.68	
25 th Percentile of Event Means ¹	0.22	1.00	
Median of Samples	0.32	0.92	
Median of Event Means ¹	0.39	1.15	
75 th Percentile of Samples	0.73	1.50	
75 th Percentile of Event Means ¹	1.07	2.62	

¹ Number of samples per event varies

 MOS provided by using statistical values for all grab samples as opposed to event means (16-30 percent)



Expression of Allocations

- Separated by Lake
- Canyon Lake for sources in subwatershed zones 2-6



Table ES-7. Summary of Milestones, WLAs and LAs for Major Categories of Nutrient Sources to Canyon Lake from Subwatersheds below Mystic Lake

Source	Phase II Milestone (kg/yr as 10-yr running average)		Phase III Final Allocation (kg/yr as 10- yr running average)	
	TP	TN	TP	TN
MS4 Jurisdiction Runoff (WLA)	3,939	11,326	1,970	8,371
Caltrans Jurisdiction Runoff (WLA)	52	151	26	111
March JPA Jurisdiction Runoff (WLA)	53	153	27	113
March ARB Jurisdiction Runoff (WLA)	55	158	28	117
CAFO (WLA)	1	2	0.4	2
Irrigated Agriculture (LA)	105	302	53	223
Non-Irrigated Agriculture (LA)	41	119	21	88
Other State/Federal/Tribal Jurisdictions (LA)	147	421	73	311
Reference Watershed Retention ²	-590	-1695	-295	-1253
Subtotal Watershed Allocation (below Mystic Lake)	3,804	10,937	1,902	8,084
Atmospheric Deposition (LA)	23	1,406	23	1,406
Sediment Nutrient Flux (LA)	1,190	3,955	683	2,741
Canyon Lake TMDL	5,017	16,298	2,608	12,230



Expression of Allocations

 Lake Elsinore for Zone 1 runoff, recycled water, CL overflows, and Mystic Lake overflows

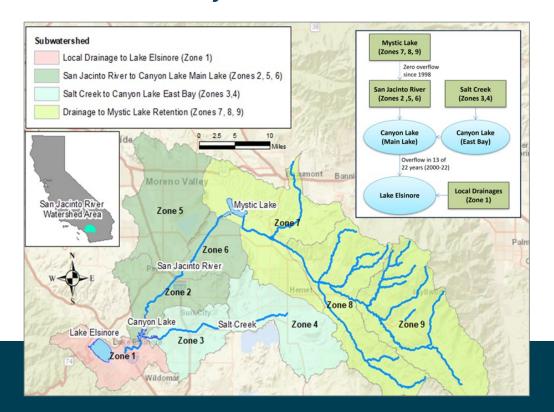


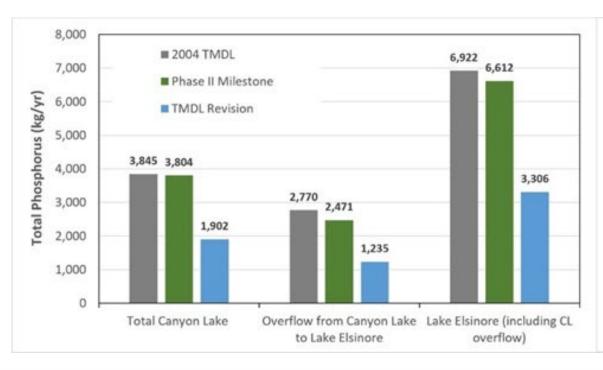
Table ES-8. Summary of WLAs and LAs for Major Categories of Nutrient Sources to Lake Elsinore

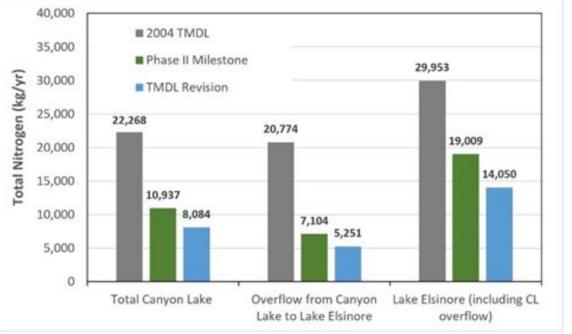
Source	Phase II Milestone (kg/yr as 10-yr running average)		Phase III Allocation (kg/yr as 10-yr running average)		
	TP	TN	TP	TN	
Local Lake Elsinore Watershed					
MS4 Jurisdiction Runoff (WLA)	548	1,575	274	1,164	
Caltrans Jurisdiction Runoff (WLA)	11	33	6	24	
Other State/Federal/Tribal Jurisdictions (LA)	64	183	32	135	
Subtotal Watershed Allocation (local watershed)	623	1,791	311	1,324	
Watershed Above Mystic Lake					
MS4 Jurisdiction Runoff (WLA)	1,890	5,434	945	4,016	
Caltrans Jurisdiction Runoff (WLA)	42	120	21	89	
CAFO (WLA)	3	8	1	6	
Irrigated Agriculture (LA)	119	342	59	253	
Non-Irrigated Agriculture (LA)	26	75	13	55	
Other State/Federal/Tribal Jurisdictions (LA)	3,050	8,769	1,525	6,481	
Minus Reference Watershed Retention2	-4,928	-14,168	-2,464	-10,472	
Subtotal Watershed Allocation (above Mystic Lake)	201	579	101	428	
Canyon Lake to Lake Elsinore (LA)	2,471	7,104	1,235	5,251	
Supplemental Water	3,317	9,535	1,658	7,048	
Atmospheric Deposition	156	9,682	156	9,682	
Sediment Nutrient Flux	15,227	104,559	10,221	91,232	
Lake Elsinore TMDL	21,995	133,250	13,683	114,964	



TMDL

 Comparison of all external load allocations in revised TMDLs to 2004 TMDLs



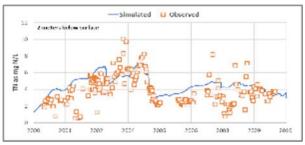


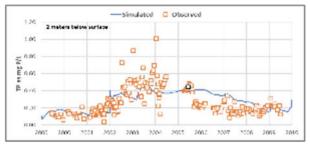


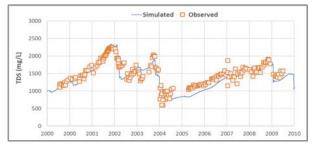
Linkage Analysis

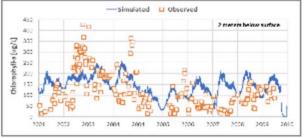
New performance measures included

Calibration plots for Lake Elsinore

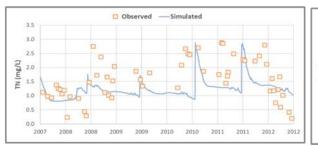


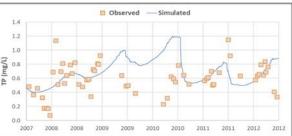


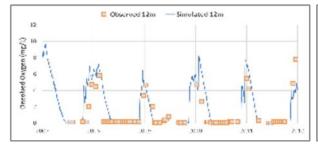


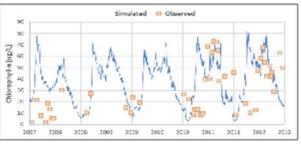


Calibration plots for Canyon Lake











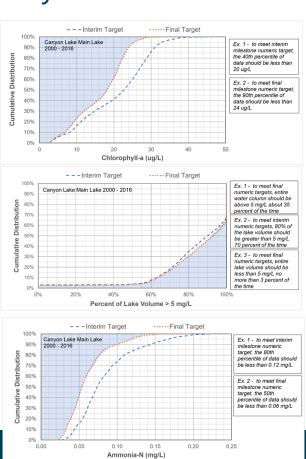
Numeric Target CDFs

Canyon Lake – East Bay

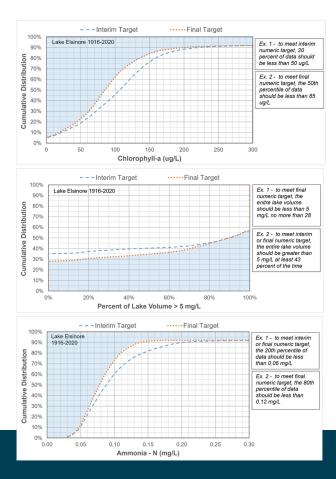
- - - Interim Target ·····Final Target Canyon Lake East Bay 2000-2016 Fx 1 - to meet interim target, the 10th 80% percentile of data should be less than 15 60% Ex. 2 - to meet final 50% milestone numeric target, the 70th percentile of data should be less than 22 30% 10% Chlorophyll-a (ug/L) - - - Interim Target ····· Final Target Canyon Lake East Bay 2000 90% numeric targets, the 80% should be above 5 mg/l about 50 percent of the 70% 60% Ex. 2 - to meet final 50% entire lake volume 40% should be less than mg/L no more than 4 30% percent of the time 20% Percent of Lake Volume > 5 mg/L Canyon Lake East Bay 2000 - 2016 Ex. 1 - to meet final 90% percentile of data 5 80% should be less than 70% 0.027 mg/L 60% Ex. 2 - to meet interim 50% percentile of data 40% 0.035 mg/L 30% 20% 10%

Ammonia-N (mg/L)

Canyon Lake – Main Lake

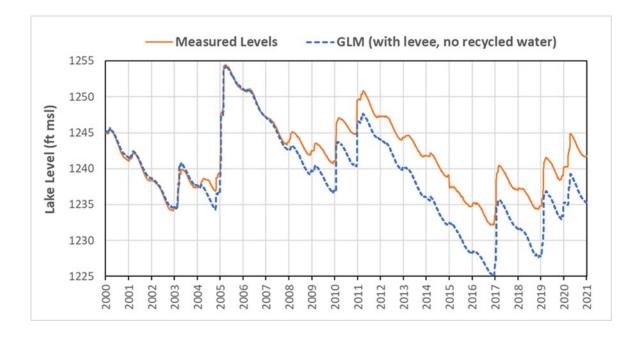


Lake Elsinore



Implementation

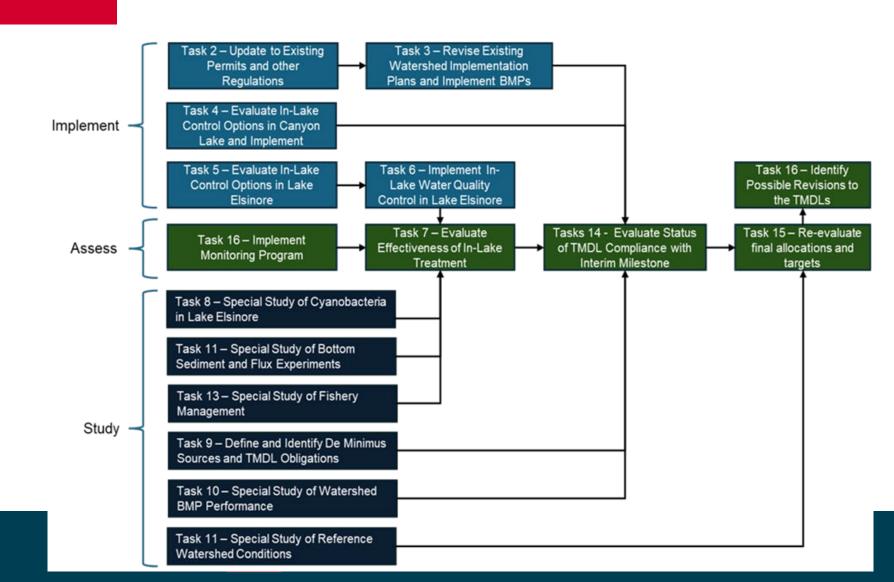
- Addition of an interim reconsideration at Year 10
- Task 7 to require consideration of long-term TDS impacts of a wet lake management strategy
- Task 8 to be coordinated with future developments in statewide HAB provisions





Implementation

 Phase II tasks lead to future reconsiderations



Task 5 Status Update



Task 5 Status Update

- Study to Evaluate LEAMS Future Options
- Completed: Options identification, condition assessment
- Underway: Conceptual design and costing, alternative evaluation, sediment study
- Ongoing coordination with City of Lake Elsinore Lake Management Program

