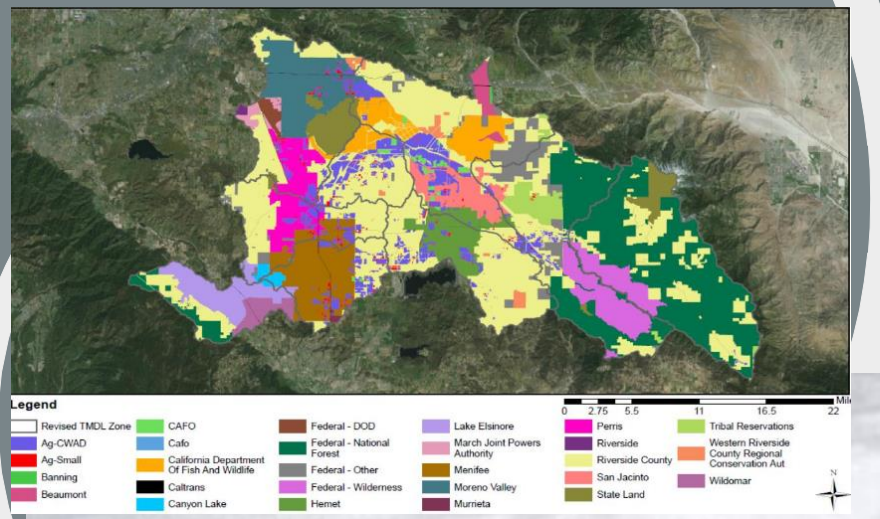
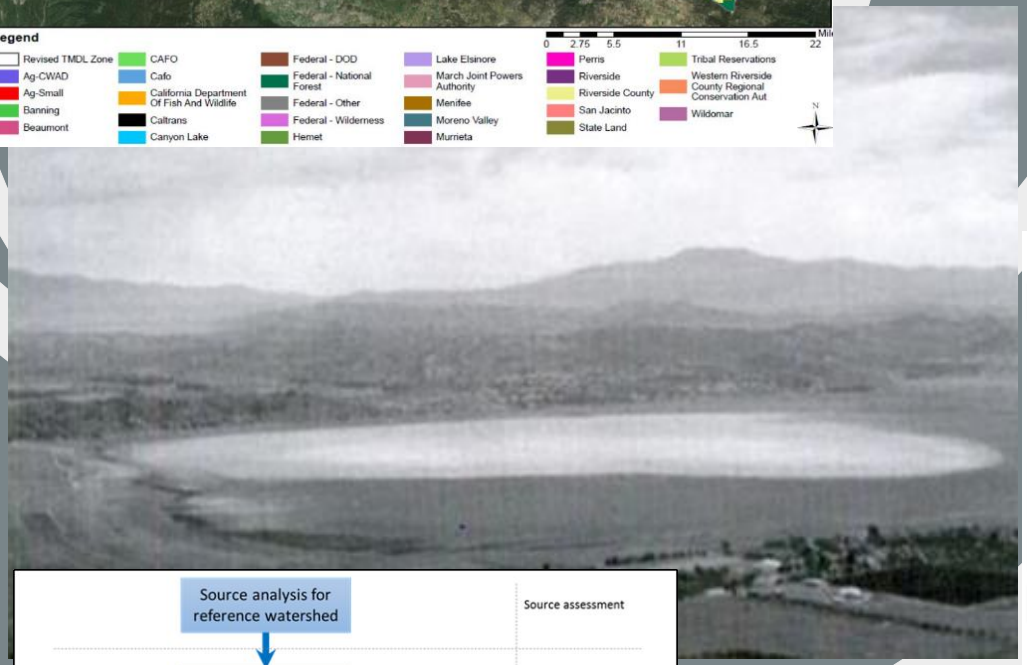
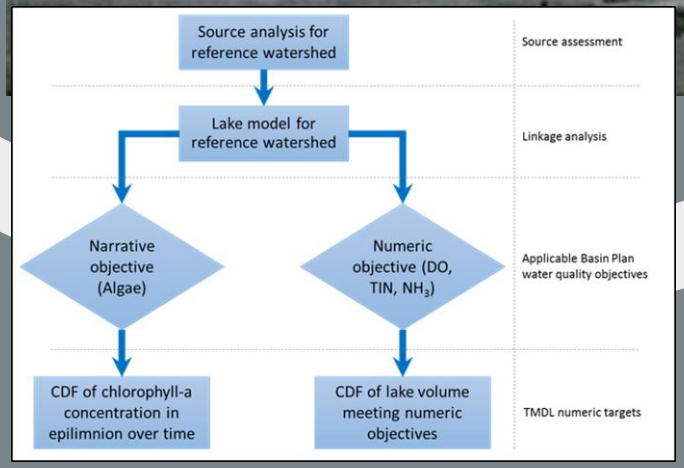
LECL TMDL Task Force Update to TMDL Revision

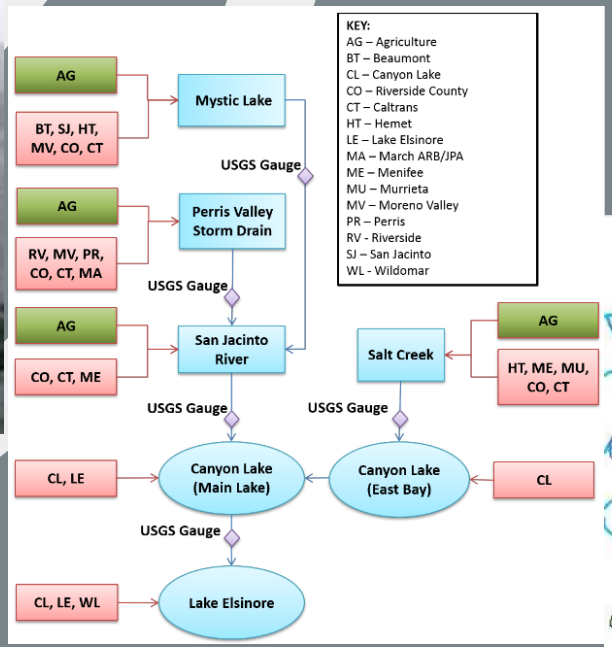
Presentation by Steve Wolosoff and Tess Dunham

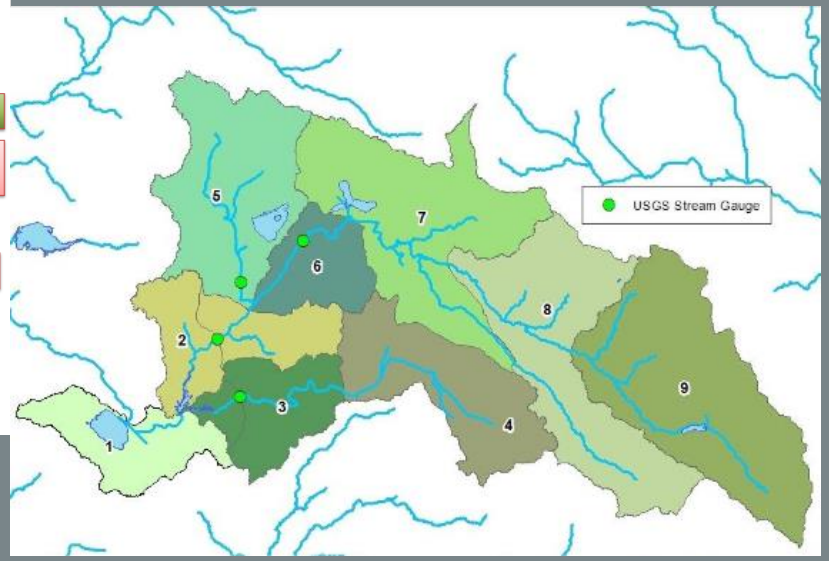
November 27, 2023









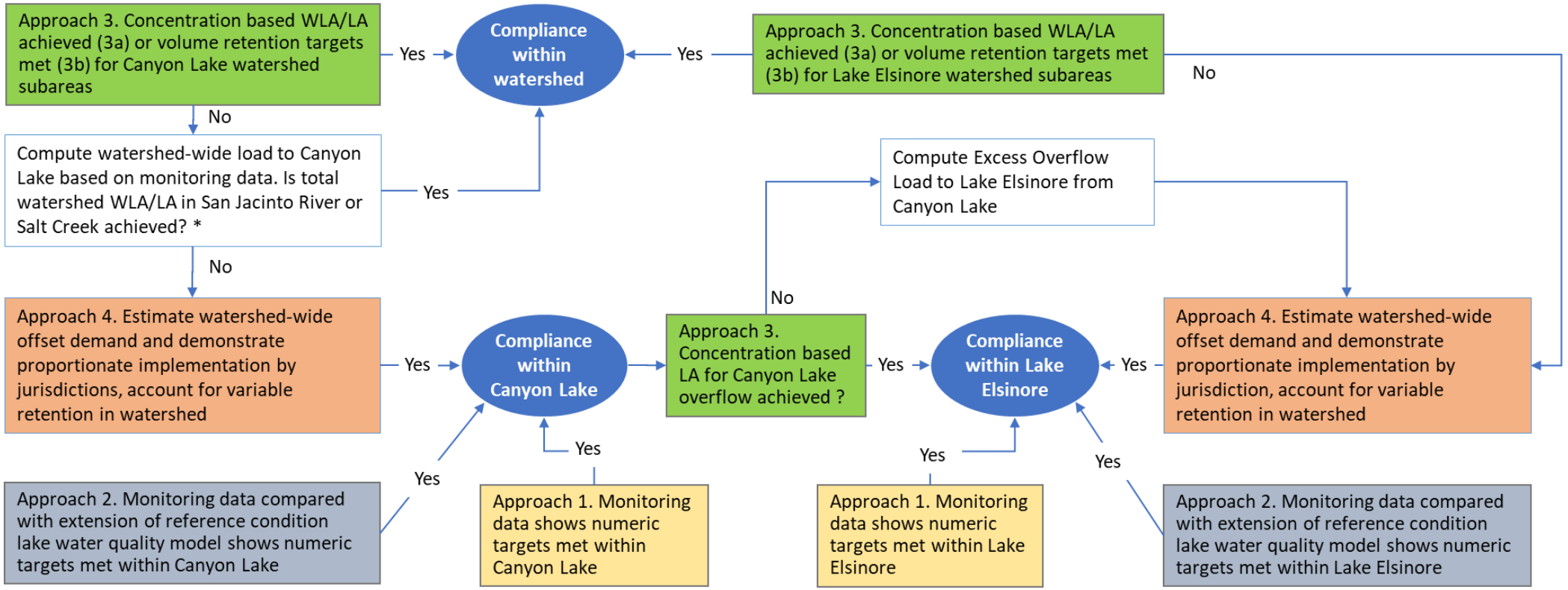


Agenda

- New compliance demonstration approach
- Implementation tasks
- Project status

Section 7 Implementation

- Guidance for multiple pathways for future compliance demonstrations



* Partial compliance within the watershed can be achieved if San Jacinto River or Salt Creek meet allocations. The non-compliant watershed would then follow the path to participate in an offset program involving regional in-lake controls

Approach 3a: External Load Reduction

- 3a. Demonstrating compliance with allowable concentrations that show nutrients in external sources have been reduced to be equal to or below the allocations

Step 1. Compile 10 years of wet weather composite sample concentrations

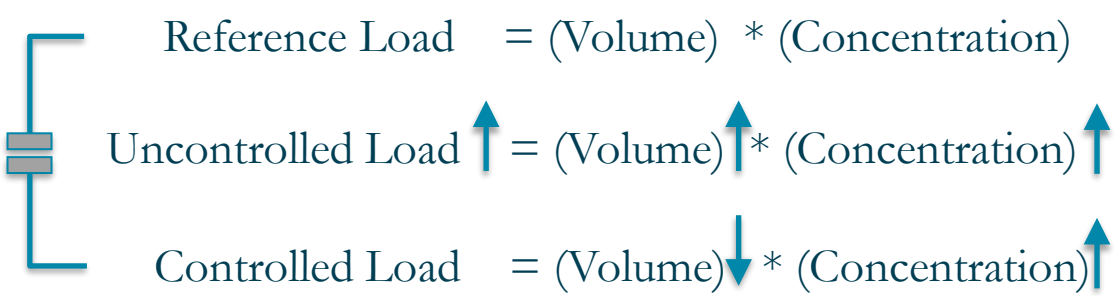
Year	Storm 1 TP (mg/L)	Storm 2 TP (mg/L)	Storm 3 TP (mg/L)	Storm 1 TN (mg/L)	Storm 2 TN (mg/L)	Storm 3 TN (mg/L)
Year 1	0.27			2.00		
Year 2	0.20	0.43		2.40	2.30	
Year 3	0.18	0.32		4.20	2.10	
Year 4	0.16			4.30		
Year 5	0.10	0.14	0.14	2.10	3.77	3.28
Year 6	0.11	0.21	0.11	1.40	4.12	2.89
Year 7	0.33	0.24	2.88 *	1.20	2.11	16.02 *
Year 8	0.29	0.37		0.80	2.36	
Year 9	0.42			0.96		
Year 10	0.68	0.32		3.40	0.91	
Step 2. Compute 10-yr Average		**0.26**			**2.45**	

* Sample removed from average calculation because of influence of burned hillside erosion (TSS = 3163 mg/L)

Step 3. Determine whether one or both nutrients are reduced to reference concentration	Compliance √ - TP only

Approach 3b: External Load Reduction

- New alternative 3b involving volume retention
- Return load from any drainage area to be equal or less than a zero impervious reference watershed by retaining runoff volume
- How much volume to retain?
  - Function of imperviousness in drainage area
  - Land use based nutrient washoff concentration



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- $V_{capture} = (V_{DA} - V_{REF}) + (V_{REF} * (1 - C_{REF} / C_{DA}))$, where:
  - $V_{CAPTURE}$ = Annual runoff capture to be demonstrated (AFY)
  - V_{DA} = Annual runoff from developed drainage area = DA (acres) * RC * P (in/yr) /12; Runoff Coefficient (RC) = $0.041 * e \wedge (3.1*IMP\%)$
  - V_{REF} = Annual runoff from a zero impervious reference drainage area = DA (acres) * RC * P (in/yr) /12; Runoff Coefficient (RC) = 0.041
  - C_{REF} = Reference nutrient concentration (Interim 0.32 mg/L TP, 0.92 mg/L TN; Final 0.16 mg/L TP, 0.68 mg/L TN)
  - C_{DA} = Nutrient concentration of upstream drainage area (see Tables 4-8 and 4-9)

Approach 3b: External Load Reduction

- Examples using Approach 3b

Step 1. Compute Excess Volume from Impervious Areas

Drainage Area	Annual Rainfall (in/yr)	Impervious %	Drainage Area Volume (AF)
10	11	33%	1.05
10	11	0%	0.38
			0.67

Step 2. Compute Ratio of Reference / Developed Nutrient Washoff

	TP (mg/L)	TN (mg/L)
Reference Condition	0.32	0.92
Sewered Residential	0.48	1.60
Ratio	0.67	0.58

Step 3. Compute Volume Capture to Achieve Reference Condition Nutrient Load (Pervious Volume * (1-Ratio in Step 2)

Pervious Land Volume (AF)	To Meet Reference TP	To Meet Reference TN
0.38	**0.13**	**0.16**

Step 4. Compute Total Volume to be Captured: Step 1 + Step 3 (max of TP or TN)	AFY of Retention	% of Drainage Area Volume
	0.83	**79%**

Step 1. Compute Excess Volume from Impervious Areas

Drainage Area	Annual Rainfall (in/yr)	Impervious %	Drainage Area Volume (AF)
10	11	0%	0.38
10	11	0%	0.38
			0.00

Step 2. Compute Ratio of Reference / Developed Nutrient Washoff

	TP (mg/L)	TN (mg/L)
Reference Condition	0.32	0.92
Irrigated Cropland	1.28	1.19
Ratio	0.25	0.77

Step 3. Compute Volume Capture to Achieve Reference Condition Nutrient Load (Pervious Volume * (1-Ratio in Step 2)

Pervious Land Volume (AF)	To Meet Reference TP	To Meet Reference TN
0.38	**0.28**	**0.09**

Step 4. Compute Total Volume to be Captured: Step 1 + Step 3 (max of TP or TN)	AFY of Retention	% of Drainage Area Volume
	0.28	**75%**

Section 7 Implementation

- Guidance for data to support multiple pathways for compliance demonstration

Table 7-10. Summary of Minimum Watershed and In-Lake Data Needs to Apply Compliance Demonstration Approaches (see text)

Compliance Approach	Description	Metric	Canyon Lake East Bay	Canyon Lake Main Lake	Lake Elsinore	Reclaimed Water Lake Elsinore
Approach 1 – Monitoring Data Compared to Numeric Targets (Section 7.3.1)	Compliance demonstrated if in-lake monitoring data are equal to or better than numeric target CDFs (see Section 3)	10-yr CDF	1. Average of bi-monthly samples collected at sites CL07 and CL08 (n=60)	1. Average of bi-monthly samples collected at sites CL09 and CL10 (n=60)	1. Single site LE2 sampled 8 times per year (n=80)	N/A
Approach 2 – Reference Condition Model (Section 7.3.2)	Evaluates the current monitoring data against modeled water quality for a reference condition over the same hydrologic period	10-yr CDF	1. Average of bi-monthly samples collected at sites CL07 and CL08 (n=60) *AND* 2. 10-yr AEM3D model simulation of reference condition over the same compliance assessment period	1. Average of bi-monthly samples collected at sites CL09 and CL10 (n=60) *AND* 2. 10-yr AEM3D model simulation of reference condition over the same compliance assessment period	1. Single site LE2 sampled 8 times per year (n=80) *AND* 2. 10-yr GLM model simulation of reference condition over the same compliance assessment period	
Approach 3 – External Load Reduction (Section 7.3.3)	Demonstrating compliance with allowable concentrations that show nutrients in external sources have been reduced to be equal to or below the allocations	10-yr average concentration at end of pipe	At least 15 wet weather grab samples			Monthly TP/TN concentrations
Approach 4 – In-Lake Offsets (Section 7.3.4)	Meeting WLAs/LAs by reducing internal loads by the amount of external load in excess of reference conditions	10-yr average excess load, in-lake control effectiveness demonstration	Salt Creek USGS Gauge #11070465 runoff volume; flow-weighted samples at Murrieta Road (n=~30)	San Jacinto River USGS Gauge #11070365 runoff volume; flow-weighted samples at Goetz Road (n=~30)	San Jacinto River USGS Gauge #11070500 runoff volume; Canyon Lake Overflow flow-weighted samples (n=~15)	Metered discharge; monthly TP/TN concentrations

3B. Demonstrating volume retention to reduce nutrient load to be equal to or below the reference watershed with zero impervious area	Site inspections to validate retention controls are functioning as intended	Routine annual site inspections during at least one wet weather event with greater than 0.5 inches of rainfall, supported by watershed control effectiveness special study

Section 7 – Questions re: Implementation Tasks

- Task 3 – CNRP
  - As proposed, 180 days after effective date of TMDL
  - Possible revision, 180 days after being incorporated into MS4 permit, or some other time frame
- Tasks 4 & 5 – Review of In Lake Treatment Controls
  - On table, include reference to Offset Program and review or revision to Offset Programs based on results of In Lake Treatment Control studies
- New Task 16 – Reopener Provision for Santa Ana Water Board
  - See next slide for proposed language

Draft of proposed new task 16

Task 16 – Review and Revise Lake Elsinore/Canyon Lake Nutrient TMDL	**Santa Ana Water Board will review and revise as they determine appropriate and necessary the final targets, load and wasteload allocations**	• **At least two years before the end of Phase 2 (or no later than 18 years after the effective date of the revised TMDLs), the Santa Ana Water Board shall review and revise as necessary the Final Targets, Load Allocations and Wasteload Allocations, and update the Phase 3 Implementation Plan as appropriate.**	**Santa Ana Water Board**

Proposed Schedule for Finalizing Technical TMDL Report

- No later than **December 21, 2023**, circulation of revised, Technical TMDL Report in full
- No later than **December 21, 2023**, circulation of draft Basin Plan Amendment language
- No later than **January 23, 2024**, comments from Task Force due to LESJWA & Consultants
- Week of **January 30, 2024**, in person Task Force meeting to review and discuss final comments
- No later than **February 20, 2024**, finalize Technical TMDL Report