



CLEAR LAKE NUTRIENT TMDL

Overview, Current Status,
and Next Steps

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PRESENTATION OUTLINE

TMDL Background

Status of Load Allocations

Other Regulatory Efforts

Additional Efforts

Challenges

Next Steps

TMDL Overview

TMDL Adopted in June 2006

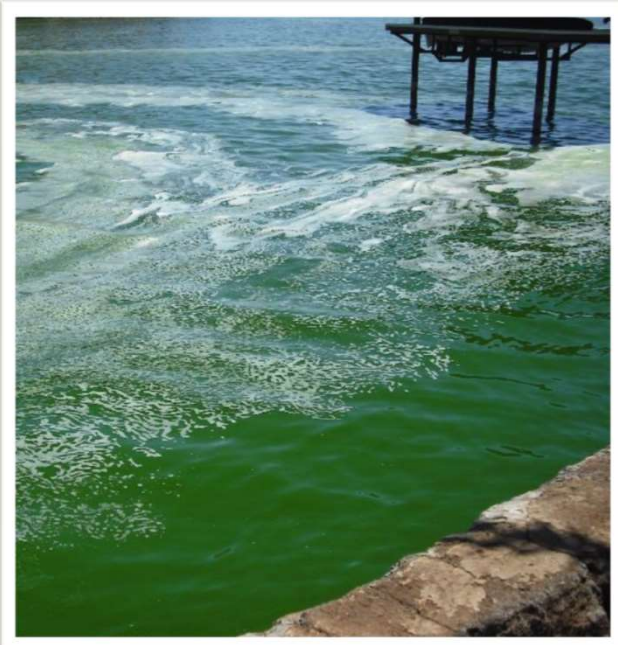
40% reduction in average phosphorus (P) loading would reduce incidence of algae blooms

40% reduction = annual allowable loading of approx. 87,100 kg

TMDL requires BMPs to control loading



TMDL Overview



2012 TMDL Status Update:
Phosphorus reductions should continue

19 June 2017 TMDL
Compliance Date

August 2017 Public Meeting

July 2018 Board Workshop



Photo courtesy of Lake County

Actions Since July 2018 Board Workshop

- Revised Next Steps
 - Not pursuing time extension
- Outreach Materials
- Requesting information from Responsible Parties



STATUS OF LOAD ALLOCATIONS

Central Valley Water Board
Clear Lake Nutrient TMDL Flow Chart

87,100 kg/yr Phosphorus

Point Sources

Caltrans
100 kg/yr P

Lake County
Storm Water
Permittees
2,000 kg/yr P

Nonpoint Sources

Collective Allocation of 85,000 kg/yr P

US Bureau
of Land
Management

US Forest
Service

Irrigated
Agriculture

Lake
County

Allocations for point source discharges - CalTrans: 100 kg/yr Phosphorus

Installed four
monitoring stations

Data indicates loading between 84-122 kg/yr
of Phosphorus

State Route 20 and
29 Project

Repair and improve existing areas discharging
into watershed

Load Allocation
Determination

Based on combination of management
practices and monitoring data

Allocations for point source discharges - Lake County Stormwater Permittees: 2,000 kg/yr P

Covered under NPDES Storm Water Program	Municipal, Construction, and Industrial Activities
Funding to estimate nutrient loading from tributaries	Results indicated phosphorus estimates lower than previously documented
Monitoring Program for nutrients	Samples being collected at the California Department of Water Resources gages
Implemented restoration efforts	Small stream restoration and tule mitigation
Load Allocation Determination	More data or information is needed. Permittees drafting Time Schedule Order request as part of the MS4 Permit

Allocations for nonpoint source discharges - Irrigated Agriculture: 40% Reduction

Regulated under ILRP	Requirements implemented by Lake County Farm Bureau
Two Monitoring Locations	Middle Creek and McGaugh Slough
50% reduction in P at Middle Creek	Phosphorus concentrations from 2007 – 2016
Management practices implemented	Reduce agricultural contributions of phosphorus loads to Clear Lake
Load Allocation Determination	More information is needed. 13267 Order Issued on 9 January 2019

Allocations for nonpoint source discharges - Lake County: 40% Reduction

Unincorporated areas in the County	Implemented erosion control and wetland restoration activities to help control phosphorus loading
2007 Grading Ordinance	Provides guidelines and regulation of grading on public and private lands
Funding for Middle Creek Restoration Project	Continued to pursue funding opportunities to move project forward
Load Allocation Determination	More data or information is needed to verify load allocation compliance

Allocations for nonpoint source discharges - US Forest Service: 40% Reduction

Road maintenance	Implemented road drainage maintenance activities
OHV trails	Maintained OHV trails and closed eroding trails
Sedimentation projects	Implemented projects to reduce sedimentation using storm proofing methods
Load Allocation Determination	Staff is currently evaluating information submitted by USFS to determine compliance

Allocations for nonpoint source discharges - US Bureau of Land Management: 40% Reduction

Road maintenance	Repaved sections of road draining to Clear Lake
Funding for sediment reduction	Received federal funding for sediment reduction and habitat enhancement work in the watershed
Trail maintenance	Annual Trail maintenance including erosion from illegal OHV use
Soil monitoring program	Monitoring program for the South Cow Mountain OHV area with plans for revegetation
Load Allocation Determination	More data or information is needed to verify load allocation compliance



OTHER REGULATORY EFFORTS

Statewide Permit for Small Municipal Storm Water Systems (Phase II MS4)

- February 2013: General Permit adopted
- December 2017: MS4 Amended to include TMDL detailed provisions
- January 2019: Effective Date of Amended MS4 Permit
 - *Time Schedule Order (TSO) required by permit. TSO will include TMDL specific requirements*

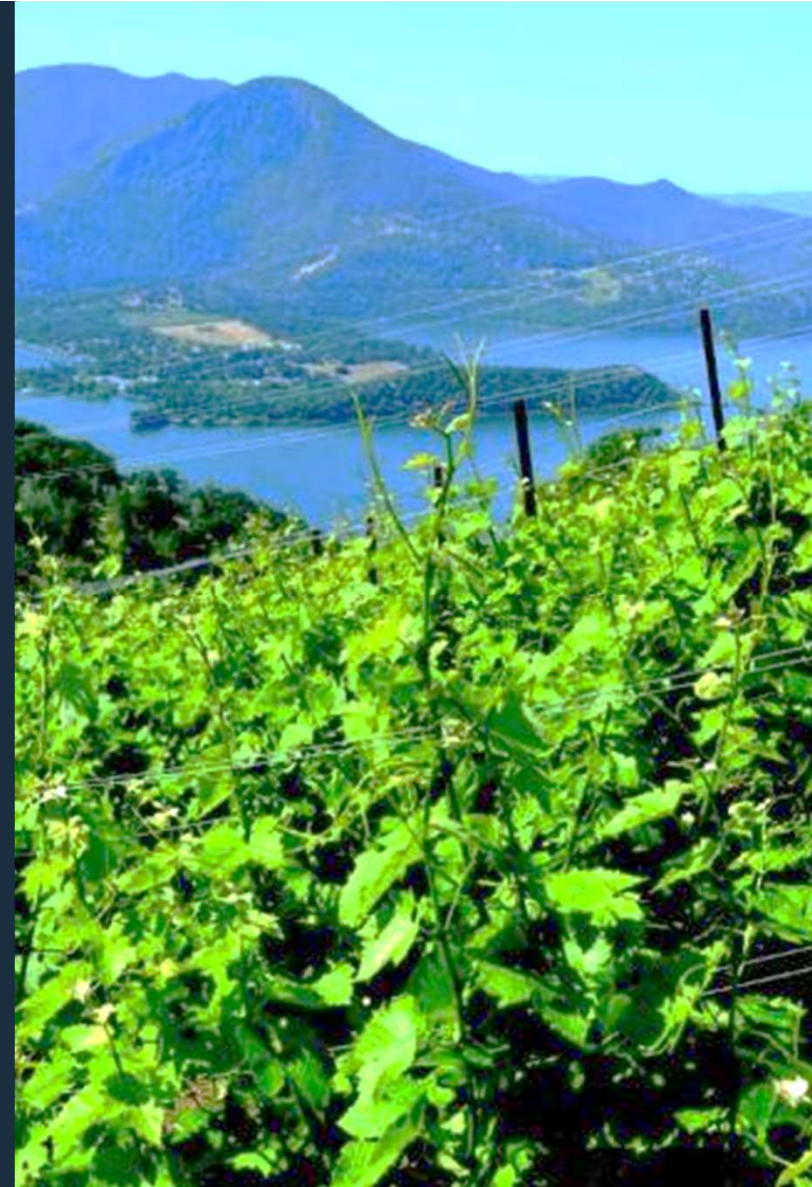
Phase II MS4: TMDL Related Requirements

- **1 July 2019:** Monitoring and Reporting Plans incorporated into Storm Water Management Plans
- **Annual Reports:** Permittees shall document compliance with TMDL and effectiveness of BMPs implemented

Irrigated Lands Regulatory Program Lake County Requirements

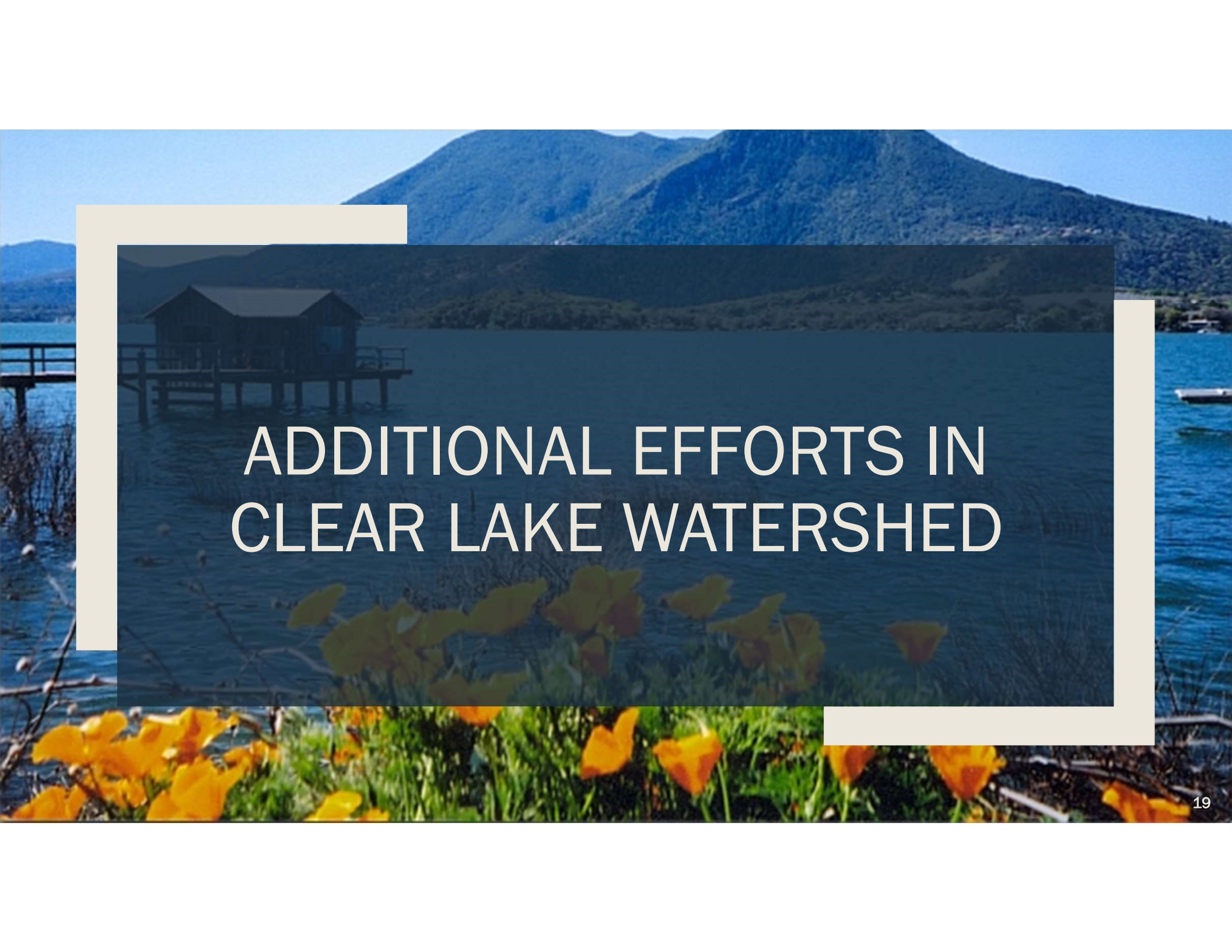
- Monitoring
- Outreach and Education
- Farm Evaluations
- Nitrogen Management Plans
- Sediment Erosion Control Practices
- Staff Inspections

Photo Credit: Lake County



Development of Federal Land NPS Permits

- Central Valley Water Board and Lahontan Water Board developing NPS Waste Discharge Requirements on USFS and USBLM lands
 - May apply to: timber harvesting and vegetative management, OHV Recreation, and road building and maintenance
- **Activities:**
 - 2018-2019: Research and Field Work for Areas of Concern to Advise Permit Development
 - Adoption by both Boards in 2020



ADDITIONAL EFFORTS IN CLEAR LAKE WATERSHED

Cyanobacteria Task Force

- Big Valley Rancheria of Pomo Indians and the Elem Indian Colony of Pomo developed the Clear Lake Cyanobacteria Task Force
- Coordination with other local and government agencies
- **Purpose:**
 - Protect beneficial uses
 - Support public health HAB advisory postings
 - Inform local drinking water systems of potential cyanotoxin presence

Multi-Agency Brochure

- Brochure regarding nutrient management in the Clear Lake Watershed
- Coordination with the Elem Indian Colony of Pomo and Big Valley Rancheria of Pomo Indians, San Jose State University, Lake County, Farm Bureau, Resources Conservation District, Middle Creek Restoration Coalition, and Division of Drinking Water
- Focus on residents

California Cyanobacteria and Harmful Algal Bloom Network (CCHAB)

- Multi-entity program to identify and address HABs in California's freshwater ecosystems
- Developing a program to respond to HAB events
 - Monitoring and public notification
- Developing new tools
- Public awareness of risks associated with HABs

Environmental Drivers of Cyanobacteria Blooms and Cyanotoxins in Clear Lake

- Identify environmental drivers
- Develop recommended approaches
- Work conducted by Southern California Coastal Water Research Project Authority (SCCWRP) and University of Southern California



CHALLENGES:

- Existing regulatory authority
- Determining the current phosphorus loading
- Determining if loading reductions were met
- Determining level of significance of internal loading

NEXT STEPS:

Continue to solicit data and information to evaluate TMDL allocations

Identify Data Gaps and Next Steps for the TMDL

Continue Existing Partnerships and Watershed Efforts

Identify Research, Monitoring, and Funding Opportunities to Address Clear Lake Water Quality Issues



QUESTIONS?

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