

Clear Lake Nutrient TMDL: Early public input on potential changes & milestones

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Meeting Purpose:

Learn your ideas and concerns.

No decisions will be made today.

Outline

- Overview
 - Key features of the Nutrient Control Program
 - Implementation efforts
 - Ideas for changes
- Questions identified in overview & other topics of concern

Algae Problem in Clear Lake

- Shallow, warm & eutrophic
 - algae & aquatic plants
- Algae more prolific from 1920's to 1970's
- >85% of natural wetlands lost
 - dramatically altered nutrient balance
 - lake = hyper-eutrophic

Algae Problem in Clear Lake

- 1986 – CWA Section 303(d) listed for nutrients
- Looked like things were getting better in 1990's
- Turn for the worse in 2009
- Algae blooms not improving and increasing concerns regarding cyanobacteria and cyanotoxins



Algae Bloom Impacts

- Some cyanobacteria produce cyanotoxins
→ health concern for humans and dogs
- Blooms can decrease dissolved oxygen
→ fish kills
- Noxious odors



Total Maximum Daily Load (TMDL) adopted in June 2006

- Source analysis
- Load allocations
- Implementation plan
- Time schedule

Clear Lake Nutrient TMDL (adopted 2006)

- Model predicted 40% reduction in average phosphorus loading would reduce the incidence of algae blooms
- 40% reduction = an annual allowable loading of approximately 87,100 kg

Clear Lake Nutrient TMDL

- Allocations for point source discharges:
 - Lake County Storm Water Permittees - 2,000 kg P/yr
 - California Department of Transportation – 100 kg P/yr
- Allocation for nonpoint source is 85,000 kg P/yr
 - U.S. Bureau of Land Management
 - U.S. Forest Service
 - Lake County
 - Irrigated agriculture

TMDL Implementation Plan

- ❖ Management practices to reduce P and erosion/sediment transport
- ❖ As required by the Control Program, responsible parties submitted a plan in 2008
 - ❖ Strategy to collect more information
 - ❖ Update on current and potential implementation efforts

Clear Lake Nutrient TMDL

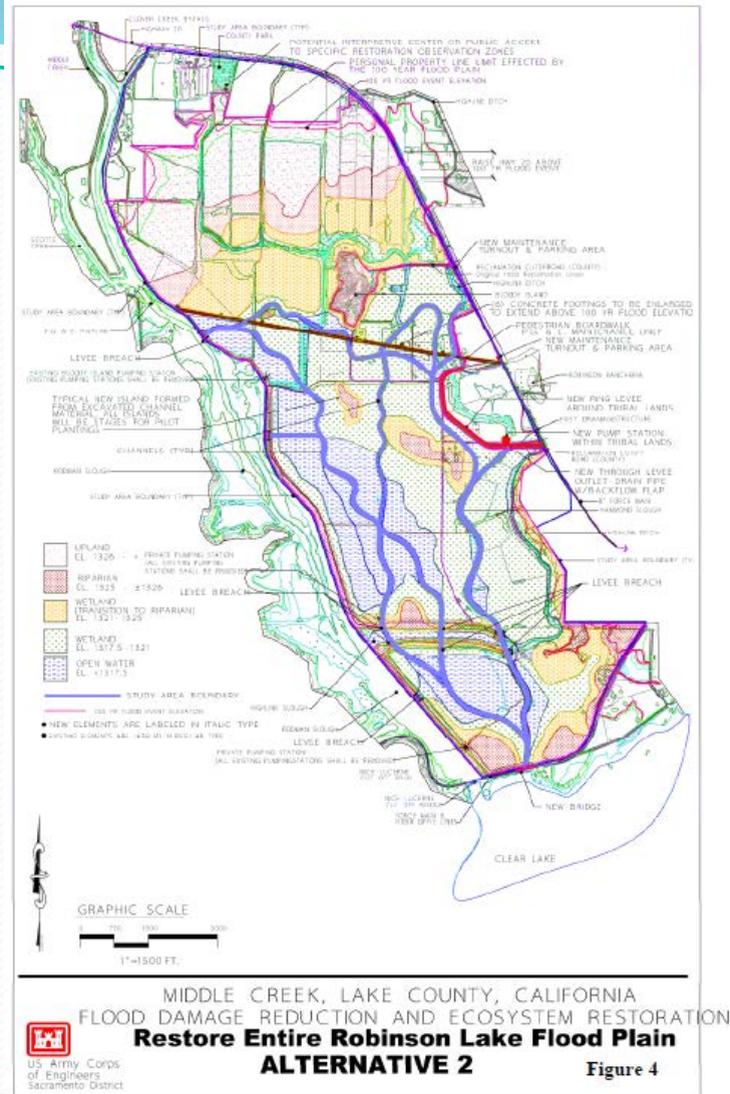
- ❖ **2012:** Central Valley Water Board considered whether phosphorus load allocations should continue or is another control strategy or approach more appropriate, based on any new information
- ❖ **2017:** Compliance by 19 June 2017

2012 Central Valley Water Board Review & Direction

- Reviewed status based on information submitted by stakeholders and staff's 2012 update report
- TMDL compliance date may be unrealistic because Middle Creek Restoration Project behind schedule

Middle Creek Flood Damage Reduction and Ecosystem Restoration Project

- Could reduce phosphorus loading to Upper Arm of Clear Lake by ~28%
- Upper Arm is source of much of algae in Lower and Oaks Arms



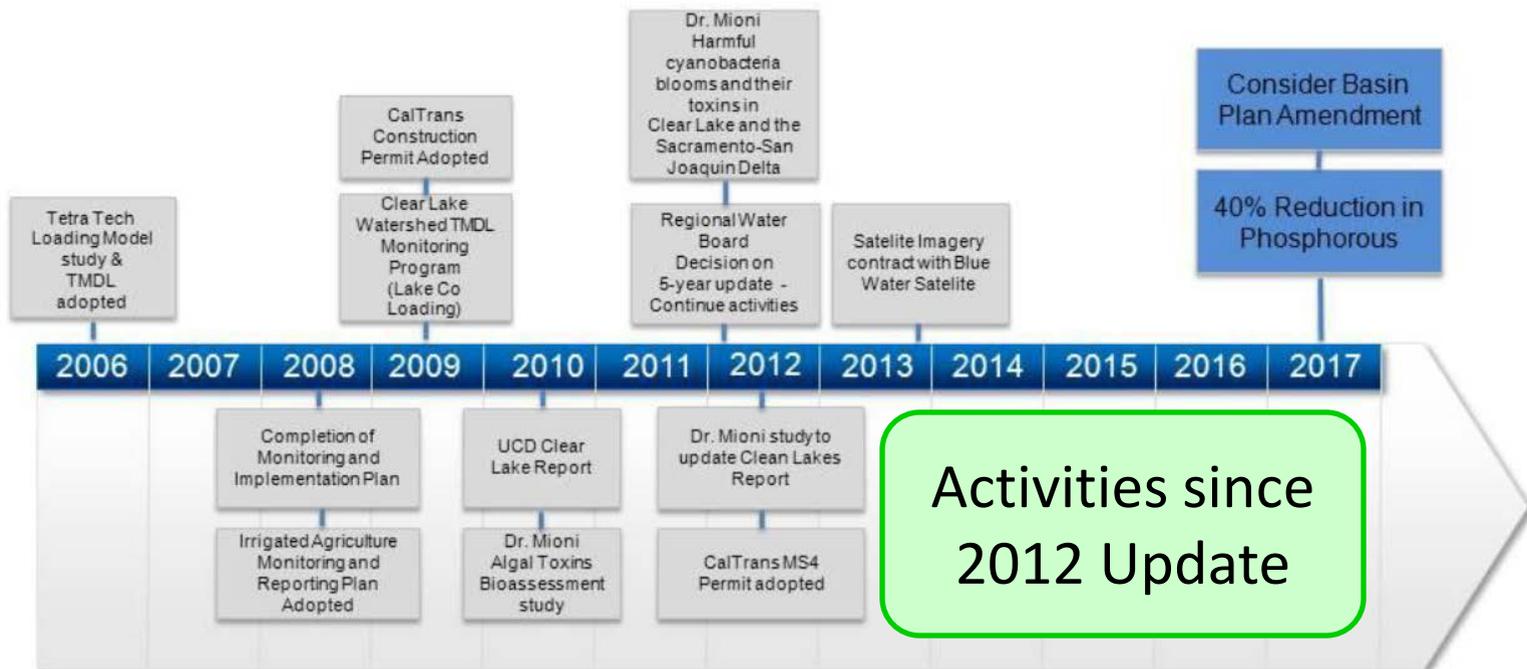
2012 Central Valley Water Board Review & Direction

- Reviewed status based on information submitted by stakeholders and staff's 2012 update report
- TMDL compliance date may be unrealistic because Middle Creek Restoration Project behind schedule
- Board direction: Nutrient control program should implement phosphorus allocations
 - Science shows reducing phosphorus reduces algae
 - More studies needed to evaluate other factors

Outline

- Overview
 - Key features of the Clear Lake Nutrient TMDL Control Program
 - Implementation efforts
 - Ideas for amendments
- Discussion of questions identified in overview & other topics of concern

2006-2012 Implementation Activities



Activities since 2012 Update:

New Water Board Permitting Efforts

- 2012 Statewide Onsite Wastewater Treatment Systems Policy (Septic Policy)
- 2013 Statewide General Permit for Small Municipal Storm Water System Discharges
- 2015 Central Valley Permit for Discharges from Medicinal Cannabis Cultivation Activities
- Upcoming Permitting Efforts
 - Small Municipal Storm Water General Permit amendment for more detailed TMDL implementation requirements
 - State Water Board policy & permit for cannabis cultivation
 - Nonpoint source activities on federal lands

Statewide Onsite Wastewater Treatment Systems (Septic Tanks) Policy

Purpose: Allow continued use of septic tanks while protecting water quality and public health

- Adopted in June 2012 → effective May 2013
- Provides requirements for septic tanks:
 - Upgrades
 - Replacements
 - New systems
- Lake County is developing a Local Agency Management Program

Statewide Permit for Small Municipal Storm Water Systems

- February 2013 – General Permit adopted
 - Did not include detailed TMDL provisions
 - Permit will be amended to include TMDL implementation requirements
 - Comment period on proposed amendments closed August 21
- State Water Board hearing for consideration
→ December 2017

Central Valley Permit for Medicinal Cannabis Cultivation Activities

- Permit adopted in 2015 – addresses water quality impacts from cannabis cultivation and associated activities on private property
- The permit allows Water Board and Fish and Wildlife staff reasonable access to the cultivation operations for inspections to determine compliance

Draft 2017 State Water Board Cannabis Cultivation Policy and *Draft* Permit

- Develop standards and a permitting system to protect flow and water quality
- Does **not** apply to personal cultivation for recreational use
- Comment period ends September 6

Central Valley Permit for Nonpoint Source Activities on Federal Lands

- Develop permit to ensure regulatory compliance and water quality protection on USFS and BLM lands
 - Timber harvesting and vegetative management
 - Motorized and non-motorized recreation
 - Range management
 - Culvert replacements and upgrades
 - Fire suppression and repair
 - Road building, reconstruction, and abandonment
- Stakeholder meetings in 2017
- Board hearing for consideration → 2019

Irrigated Lands Regulatory Program

- New permit adopted 2014
- Water Board Staff actively conduct inspections
 - Farm evaluation reports
 - Nitrogen management plans
 - Irrigation supply wellheads
 - Fertilizer and pesticide storage areas
 - Best management practice effectiveness and appropriateness

2017 Technical Report on TMDL Implementation Status *(under development)*

- Summary of implementation actions
(completed, underway, planned)
 - 13267 Orders sent in 2016 and all responsible parties submitted responses
 - See handout for preliminary compilation summary

Examples of Implementation Actions

- Erosion Control
 - Lake County grading ordinance (clearing and snagging)
 - Native surface road improvements
 - Irrigation improvements
 - Filter strips
 - Construction Best Management Practices
- Wetland Creation & Habitat Restoration
 - Middle Creek Restoration Project

2017 TMDL Implementation Update

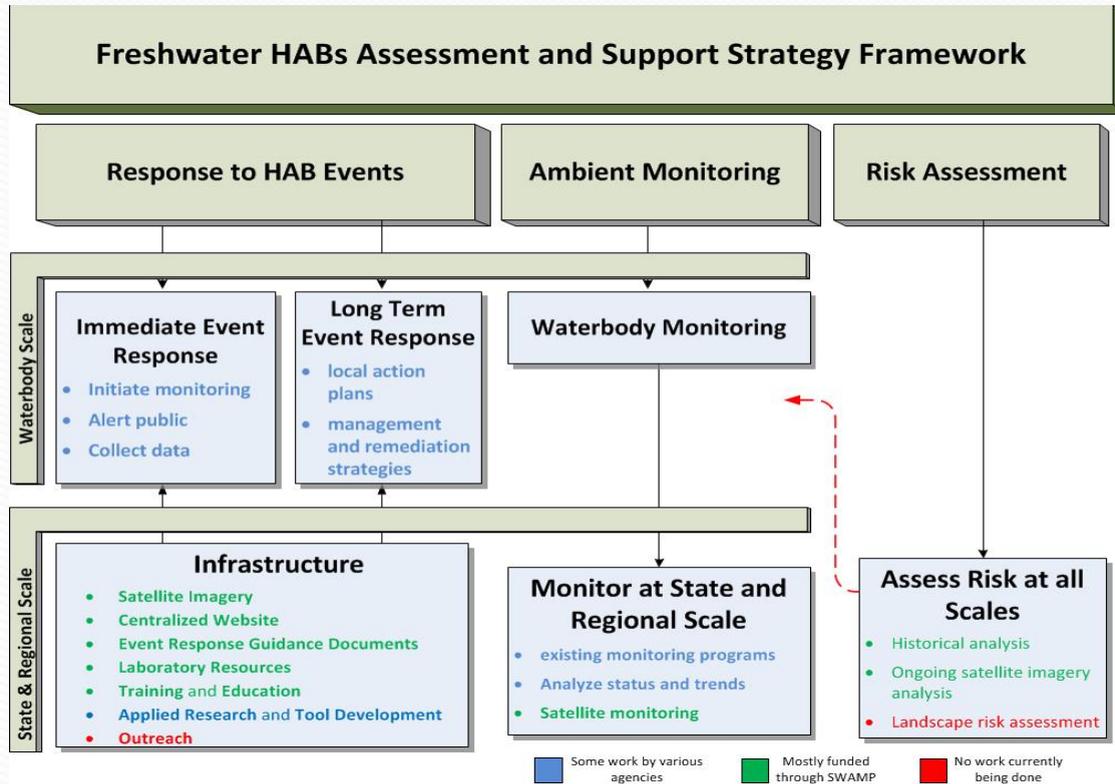
Critical question:

1. Are we missing any erosion control projects or nutrient reduction efforts?

Potential for New Information Gathering

- Cyanobacteria Harmful Algal Blooms study by State Water Board contract
- Clear Lake Blue Ribbon Task Force

State Water Board Efforts to Assess Cyanobacteria and Harmful Algae Blooms (HABs)



AB 707: Blue Ribbon Committee for the Rehabilitation of Clear Lake

- Goal: Improve the environmental quality of the lake, as first step in helping local economy by promoting tourism and job creation
- Meet quarterly
- Provide an annual report on activities to the Governor and appropriate committees beginning **January 1, 2019**
 - Identify barriers and contributing factors to poor water quality, strategies to improve water, threats to wildlife
 - Provide recommendations, cost estimates, multi-agency coordination plan to secure funding

2017 TMDL Implementation Update

Critical question:

2. Do you know of any other study efforts underway?

2017 TMDL Implementation Status

- Preliminary Water Board staff findings:
 - Some allocations met
 - Not enough information to determine compliance for all load reduction requirements
 - Nonpoint source allocation likely not met
 - Primarily because Middle Creek Restoration Project is delayed

Considering Compliance Date Extension, Alternatives & Milestones

Critical questions:

3. Are there any feasible alternatives to revising the compliance date?
4. Can the TMDL load and waste load allocations be met in 10 years? 20 years? Other timeframe?
5. Specific milestones to track progress?

Considering Compliance Date Extension, Alternatives & Milestones

Critical questions:

6. What new types of implementation actions might be feasible during a time extension to further reduce nutrient inputs to Clear Lake?
7. What new types of actions might be possible with any feasible alternatives to extending the compliance date?

Examples of Implementation Actions

	Considered in 2006	<u>Under Implementation</u>
• Erosion Control	✓	✓
• Lake County grading ordinance (clearing and snagging)	✓	✓
• Native surface road improvements	✓	✓
• Irrigation improvements		✓
• Filter strips	✓	✓
• Construction best management practices	✓	✓
• Critical area planting	✓	
• Streambank & shoreline protection	✓	
• Lined waterways and outlets	✓	
• Wetland Creation & Habitat Restoration	✓	✓
• Middle Creek Restoration Project	✓	✓

Considering Compliance Date Extension, Alternatives & Milestones

Critical questions:

8. Are there any potential environmental impacts that could happen from any new projects conducted as a result of a compliance date extension or other alternative?
9. How might those impacts be avoided or mitigated?

Considering Compliance Date Extension, Alternatives & Milestones

Critical questions:

10. Is there other information the Board should consider?
11. Are there any other questions we should be asking?

Next steps

- Public comments for today's meeting:
→ September 15
- TMDL Implementation Status Report
→ Public review: winter 2017
- Draft staff report with alternatives evaluation for potential control program revisions:
→ Public review: later in 2018

Electronic mailing list and contact information

- To receive notifications and updates, subscribe to the Clear Lake Nutrient TMDL electronic mailing list:
http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml
- Contacts:
 - Michelle Wood, Senior Environmental Scientist
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Taranjot.Sahota@waterboards.ca.gov
 - Holly Grover, Environmental Scientist
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A scenic landscape featuring a wooden pier with a small house on a blue lake. In the background, there are large, dark mountains under a clear blue sky. In the foreground, there are yellow flowers and green foliage.

Discussion & Questions

Questions to Consider

1. Do you know of any ongoing or planned erosion control projects or nutrient reduction efforts not already identified on the handout?
2. Do you know of any study efforts underway?
3. Are there any feasible alternatives to revising the compliance date?
4. Can the TMDL load allocations be met in 10 years? 20 years? Other timeframe?
5. Can you suggest specific milestones to track progress?
6. What new types of implementation actions might be feasible during a time extension to further reduce nutrient inputs to Clear Lake?
7. If an alternative to extending the compliance date is possible, what new types of actions might be feasible?
8. Are there any potential environmental impacts that could happen from any new projects conducted as a result of a compliance date extension or other alternative? How might those impacts be mitigated?
9. Is there other information the Board should consider?
10. Do you have any additional questions or ideas?

