



County of Lake Water Resources Department TMDL UPDATE

CENTRAL VALLEY WATER QUALITY CONTROL BOARD WORKSHOP
LAKEPORT, CA

JULY 18, 2018

Outline

- ▶ INTRODUCTION TO WATER RESOURCES
- ▶ LAKE COUNTY'S ROLE IN THE NUTRIENT TMDL
- ▶ ONGOING TMDL ACTIVITIES
- ▶ STEPS FORWARD



Introduction

▶ LAKE COUNTY WATER RESOURCES DEPARTMENT

- ▶ Levees – Oversee encroachment, maintenance, modernization = SAFETY
- ▶ Lakebed – Regulate public trust lands for construction & ATON
- ▶ Invasive Species – quagga mussel prevention
- ▶ Nuisance Aquatic Plants – Permit applicators & treat boat lanes/shoreline to improve public access
- ▶ Floodplain – Administer the National Flood Insurance Program per FEMA & CDWR
- ▶ Groundwater – Monitor and manage three priority basins (Big Valley, Scott's Valley & Upper Lake) as part of SGMA
- ▶ Highland Springs Recreation Area – Manage 3,200 acre reserve and park
- ▶ Development – Review permits for stormwater, cannabis and floodplain
- ▶ Special Projects – Manage Middle Creek Restoration contract, levee feasibility study, levee deferred maintenance project & levee road improvement project
- ▶ NPDES – Implement and report on stormwater prevention measures
- ▶ TMDL –



Role of Water Resources in TMDL

PHASE II STORMWATER DISCHARGER

- ▶ 2003 - NPDES Storm Water Permit (MS4)
 - ▶ Pre -TMDL Requirements
 - ▶ Clean Water Program (Storm Water Management Program Between County of Lake, Clear Lake, and Lakeport)
- ▶ 2013 - MS4 Permit – Introduced TMDL requirements
- ▶ 2017 – MS4 Permit amended to align and reinforce TMDL requirements
 - ▶ Develop monitoring plan and QAPP
 - ▶ Conduct field monitoring
 - ▶ Analyze data
 - ▶ Permit Reporting
 - ▶ Demonstrate compliance



Ongoing TMDL Activities

- ▶ BEST MANAGEMENT PRACTICES
- ▶ MONITORING
 - ▶ Stormwater monitoring
 - ▶ Ambient water & sediment monitoring in Clear Lake
- ▶ ANALYSIS



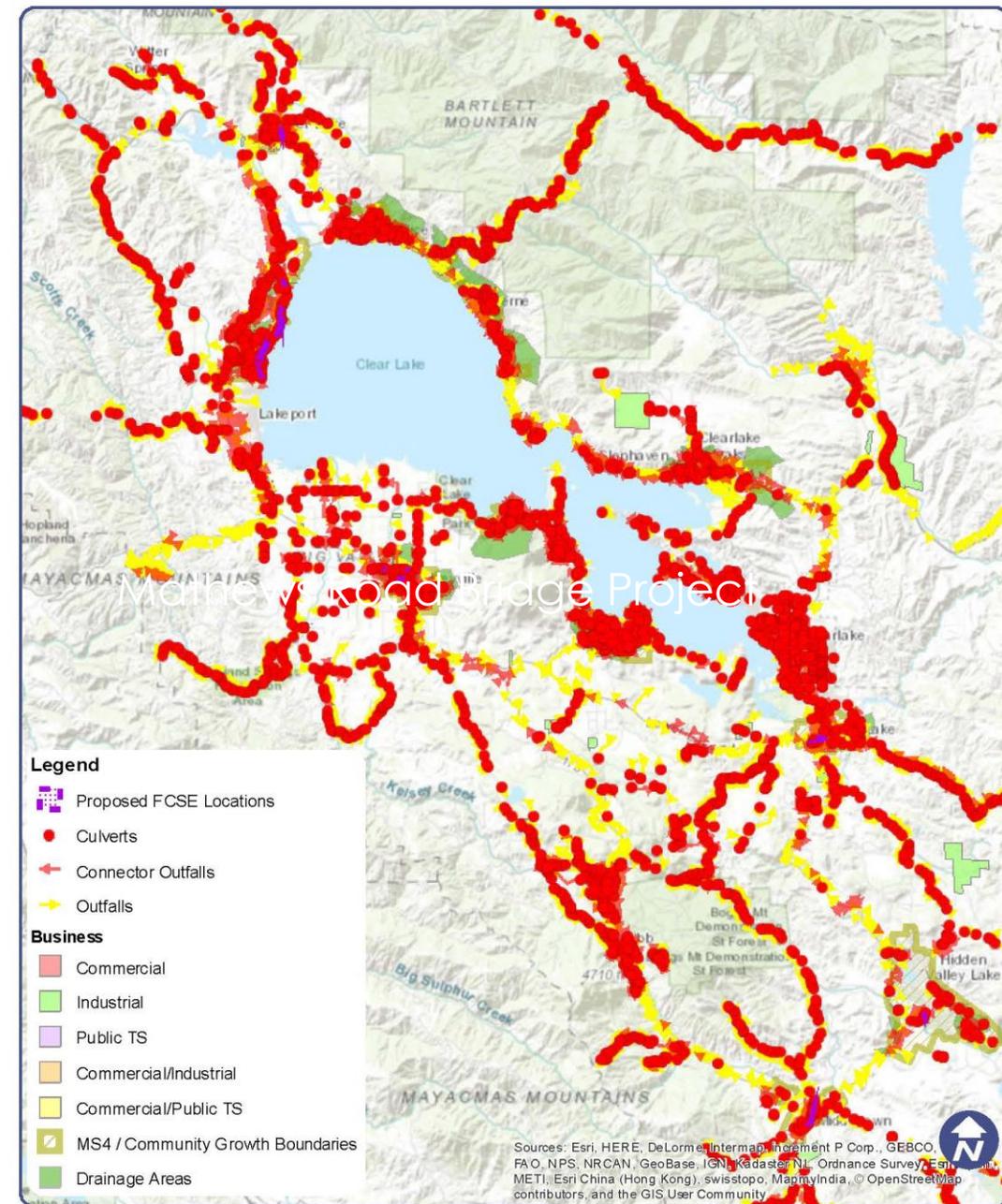
Best Management Practices

▶ WATER RESOURCES

- ▶ Shoreline Ordinance - lakebed construction
- ▶ MS-4 Trash Assessment

▶ PUBLIC WORKS

- ▶ Road Construction
 - ▶ < 1 ac – Water Pollution Control Plan
 - ▶ > 1 ac – Stormwater Pollution Prevention Plan
 - ▶ Bonded fiber matrix – revegetation
 - ▶ Fiber roll & silt fences
 - ▶ Perma-zyme Soil Conditioner
- ▶ Illicit Discharges
 - ▶ Mapped outflows (2896)



Best Management Practices

- ▶ COMMUNITY DEVELOPMENT
 - ▶ Construction Site Runoff
 - ▶ Grading Ordinance
 - ▶ Permits for new construction
 - ▶ Inspections
 - ▶ Cannabis Permits

Grading for a Winery



Best Management Practices

- ▶ **CLEAN WATER PROGRAM - COORDINATE STORMWATER PREVENTION EFFORTS BETWEEN CLEARLAKE, LAKEPORT AND LAKE COUNTY:**
 - ▶ Emphasizes outreach and education
 - ▶ Promotes consistency between programs
 - ▶ Streamlines reporting

WHEN YOU'RE FERTILIZING THE LAWN.

REMEMBER YOU'RE NOT JUST

FERTILIZING THE LAWN.



You fertilize the lawn. Then it rains. The rain washes the fertilizer along the curb, into the storm drain, and directly into our lakes and streams. This causes algae to grow, which uses up oxygen that fish need to survive. So if you fertilize, please follow directions and use sparingly.

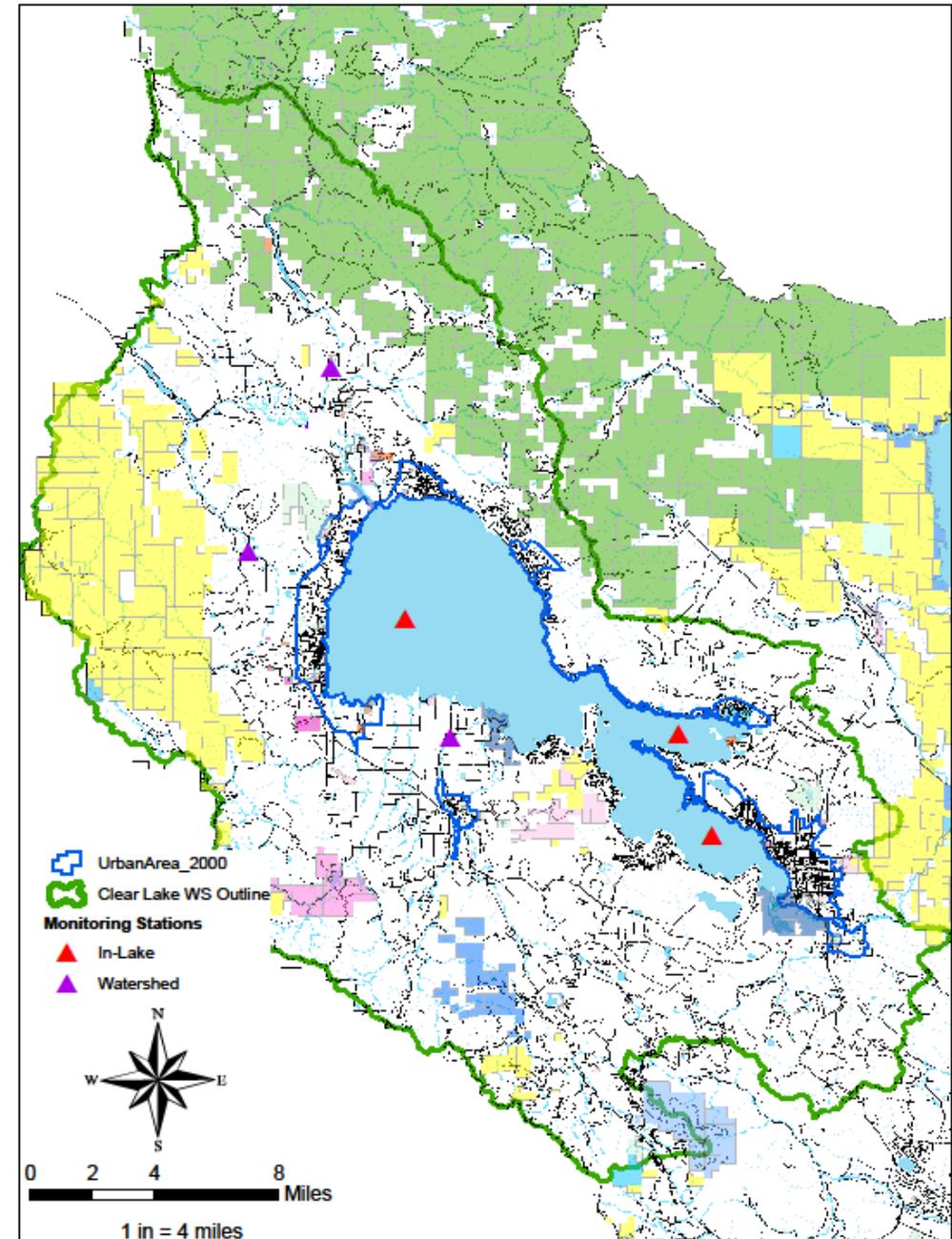
Monitoring

▶ STORMWATER MONITORING (TRIBUTARIES)

- ▶ Middle Creek at Rancheria Rd
- ▶ Scotts Cr at Eickhoff Rd
- ▶ Kelsey Cr. at Soda Bay Rd

▶ AMBIENT MONITORING (LAKE)

- ▶ CDWR monthly WQ sampling
- ▶ Lake County sediment core sampling
- ▶ Collect samples for cyanobacteria analysis by BV Band of Pomo



Stormwater Monitoring (Tributaries)

▶ LAKE COUNTY WATER RESOURCES DEPARTMENT

- ▶ Total suspended solids
- ▶ Total phosphorus
- ▶ Nitrite plus nitrate
- ▶ Ammonia
- ▶ Total Kjeldahl Nitrogen

▶ CALIFORNIA DEPARTMENT OF WATER RESOURCES

- ▶ Flow Gages (CFS)



Ambient Monitoring – Clear Lake

- ▶ LAKE COUNTY WATER RESOURCES DEPARTMENT

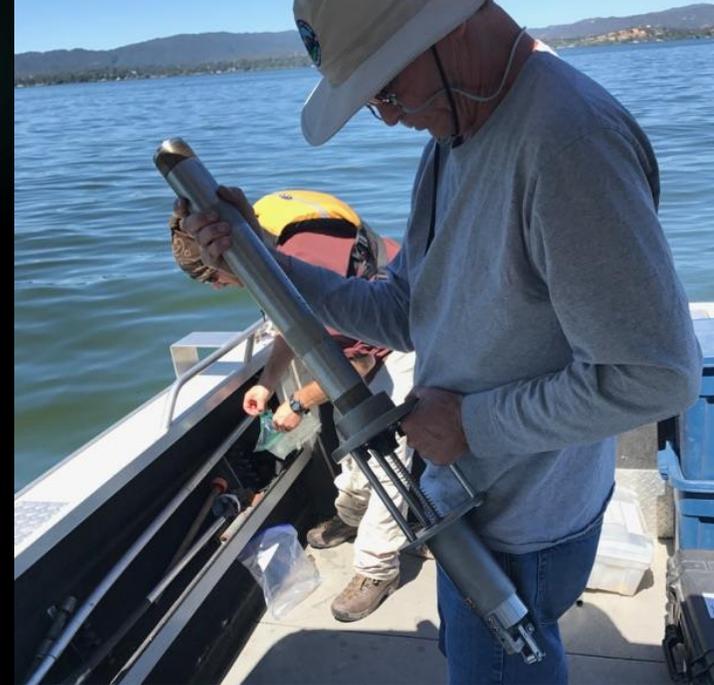
- ▶ Sediment Core
 - ▶ Total Phosphorus
 - ▶ Total Nitrogen

- ▶ CALIFORNIA DEPARTMENT OF WATER RESOURCES

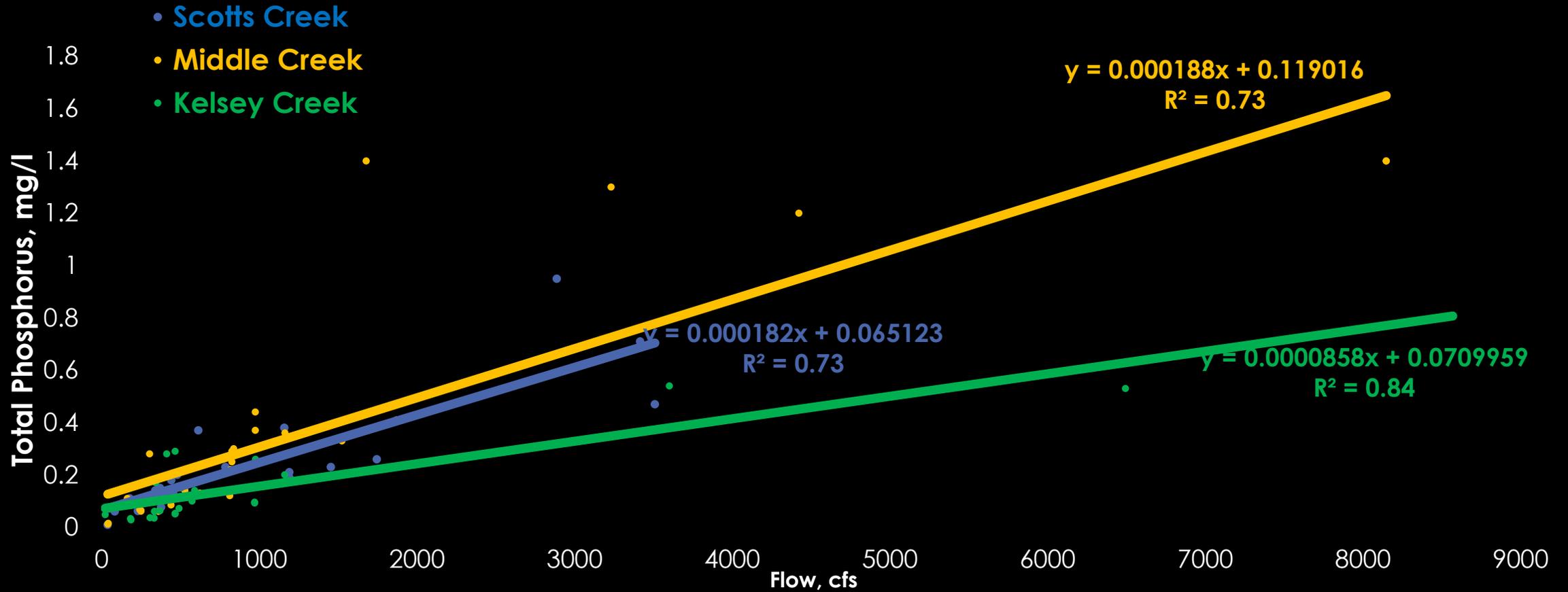
- ▶ Water Quality
 - ▶ Field Parameters
 - ▶ Nutrients
 - ▶ Metals

- ▶ BIG VALLEY BAND OF POMO INDIANS

- ▶ Water Quality
 - ▶ Cyanobacteria

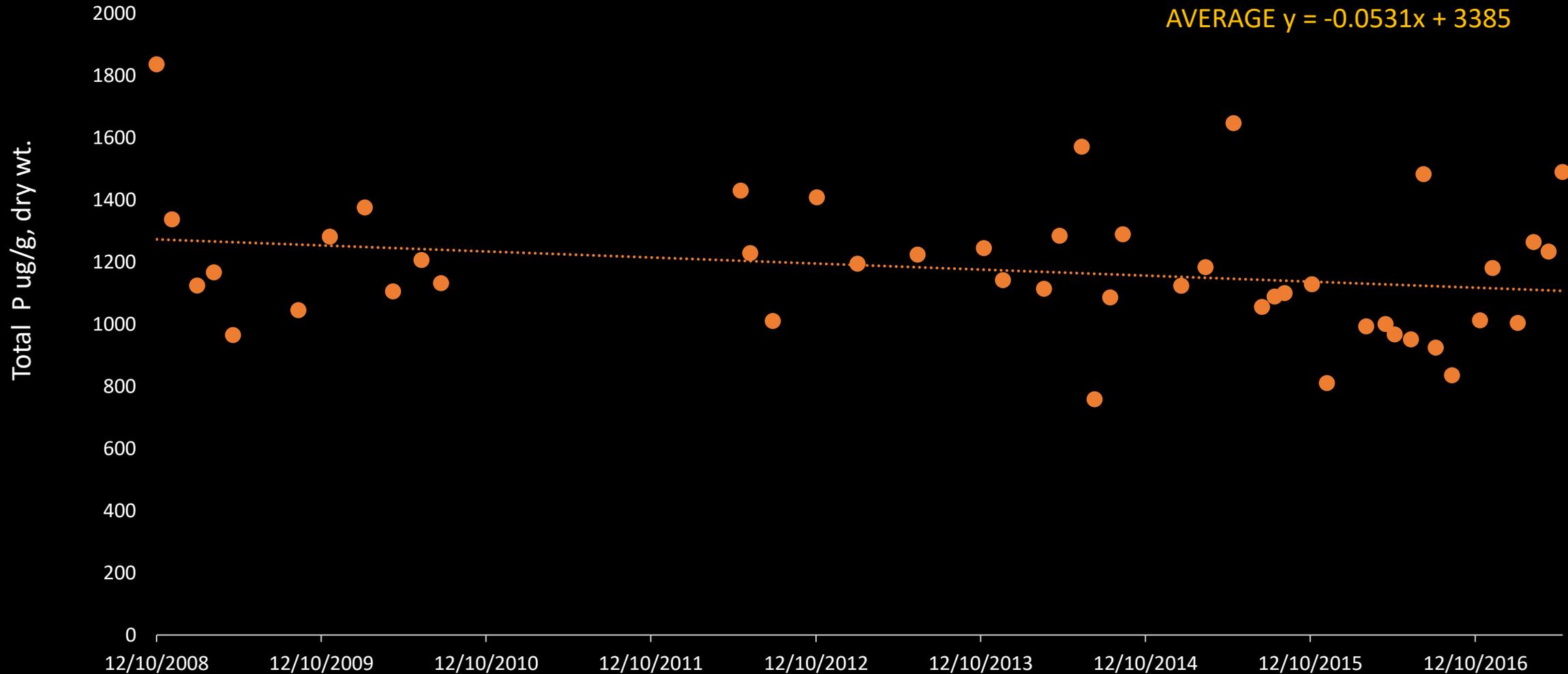


Relationship between Storm Water Flow x TP (2007-2008, 2015-2016)

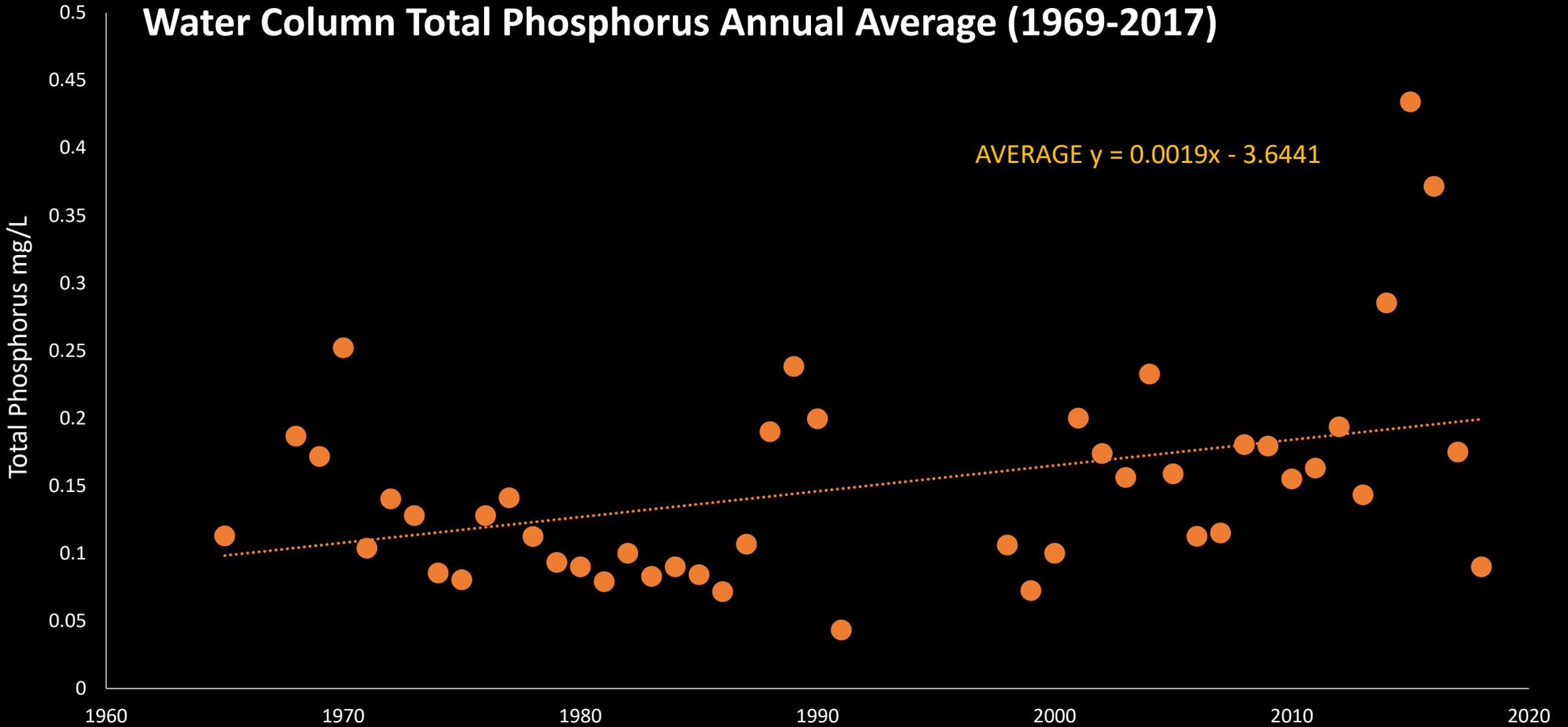


Sediment Cores – Total P (DWR & UCD)

Total P (ug/g dry wt.) Average top 10 cm Upper Arm 2008-2016



Water Quality – Lake Total P (CDWR)



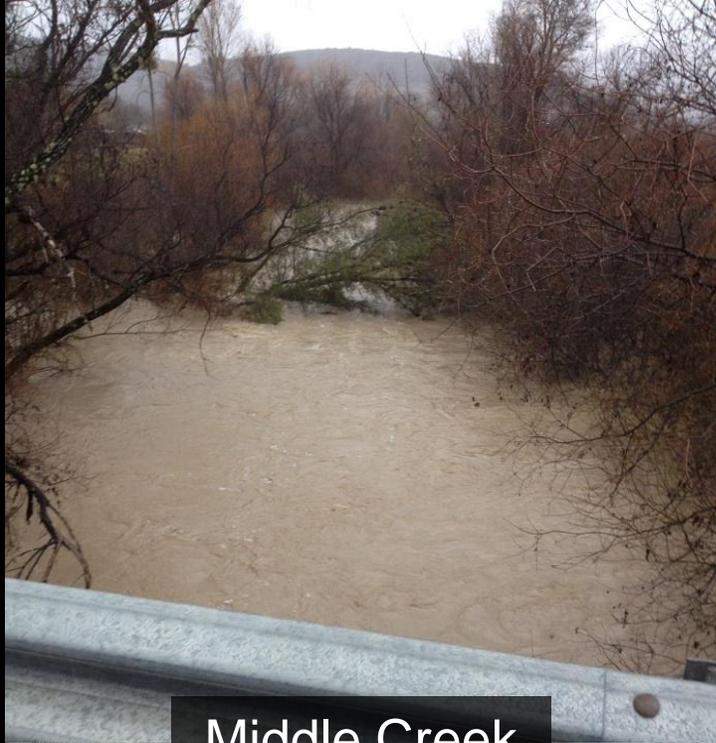
Steps Forward

- ▶ CONTINUE AND IMPROVE BMP IMPLEMENTATION
- ▶ EXPAND MONITORING
 - ▶ Update Monitoring & Reporting Plan
 - ▶ Update and Submit Quality Assurance Project Plan
- ▶ ANALYZE AND REPORT ON DATA TO CALCULATE LOADING
- ▶ REVISIT THE CLEAN WATER PROGRAM
- ▶ DEVELOP DATABASE

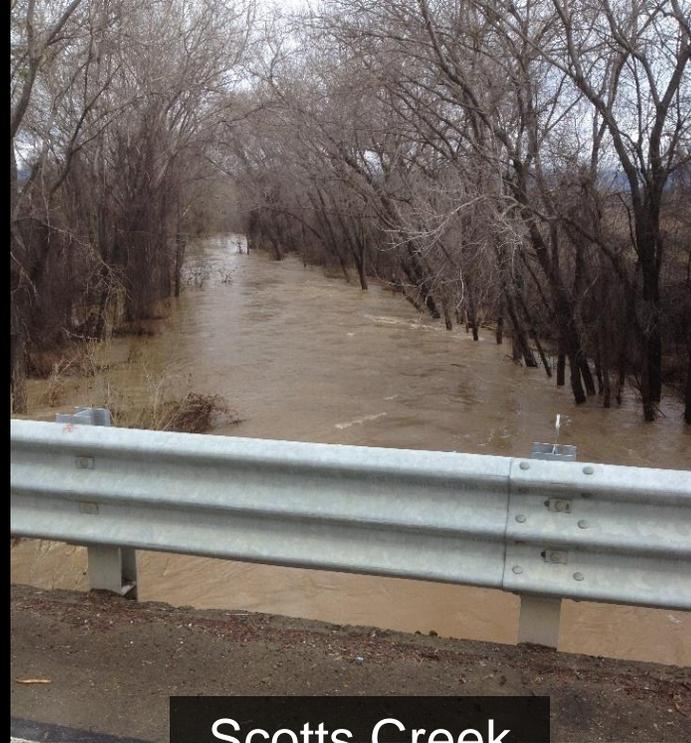
FUNDING DEPENDENT



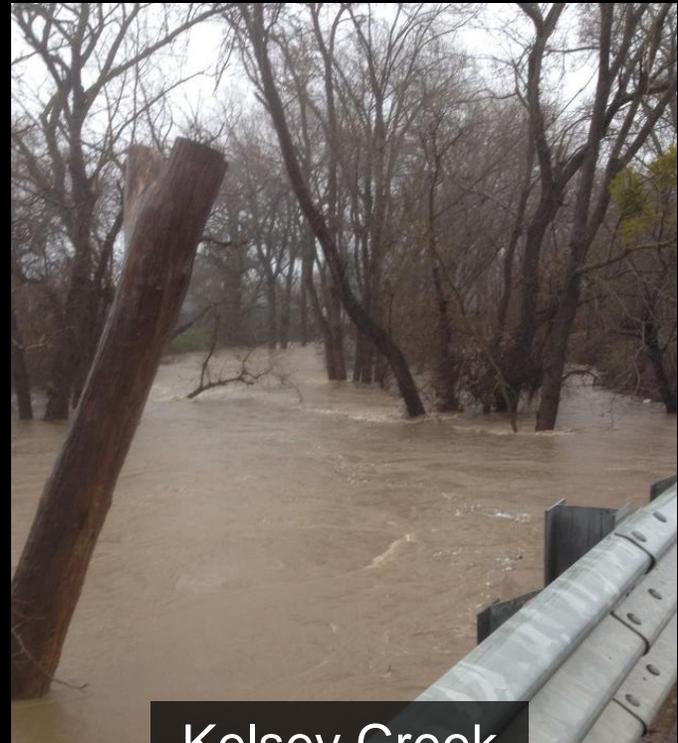
Questions?



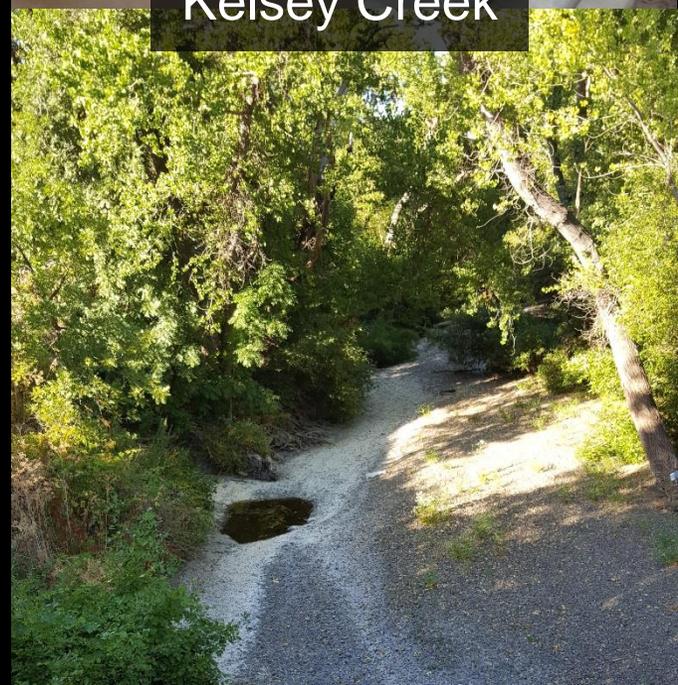
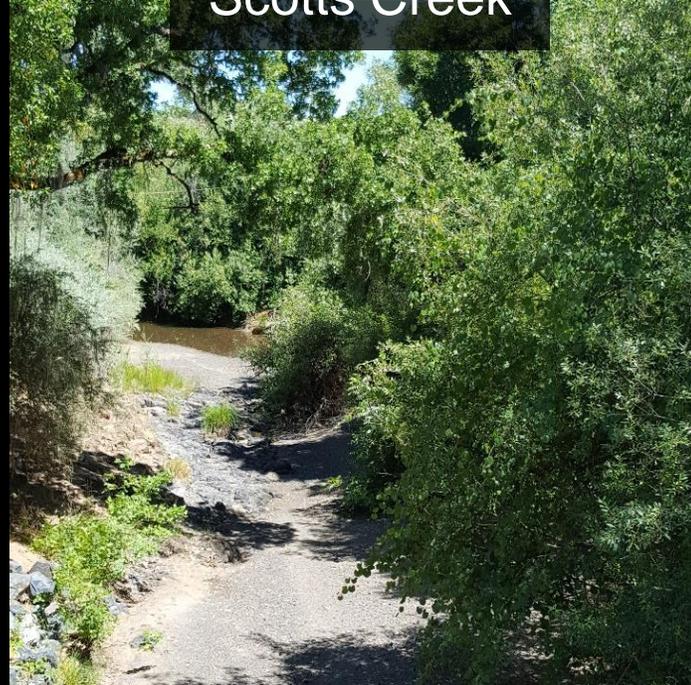
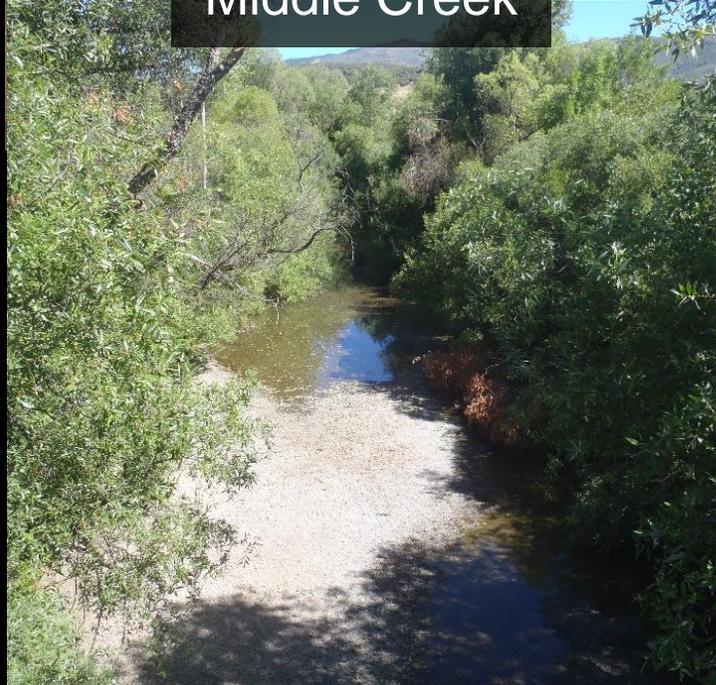
Middle Creek



Scotts Creek



Kelsey Creek



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[HTTP://WWW.LAKECOUNTYCA.GOV/GOVERNMENT/DIRECTORY/WATERRESOURCES.HTM](http://www.lakecountyca.gov/Government/Directory/WaterResources.htm)

