

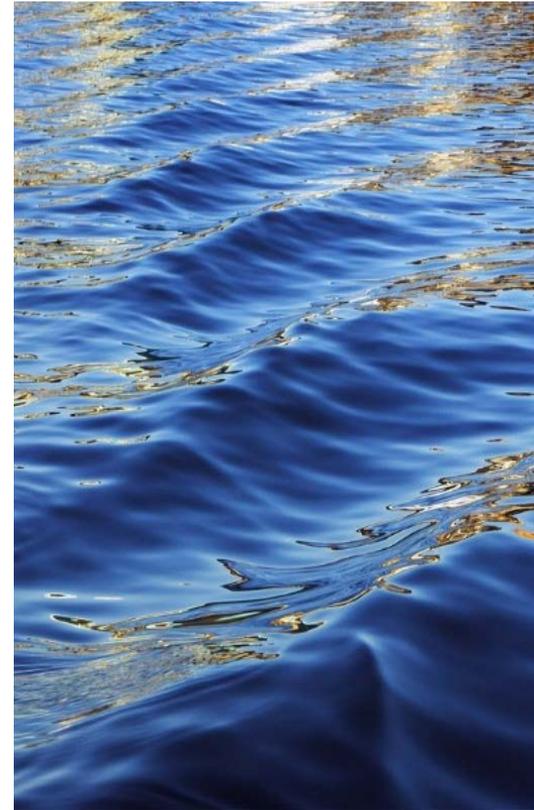
MS₄ Permits and TMDLs

Costs and Savings through TMDL Task Force

Jason Uhley

Chief of Watershed Protection

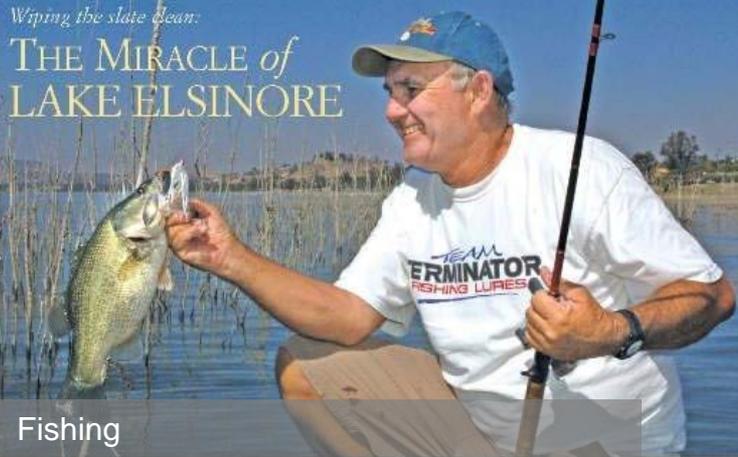
Riverside County Flood Control
and Water Conservation District



Clean Water Act (CWA)

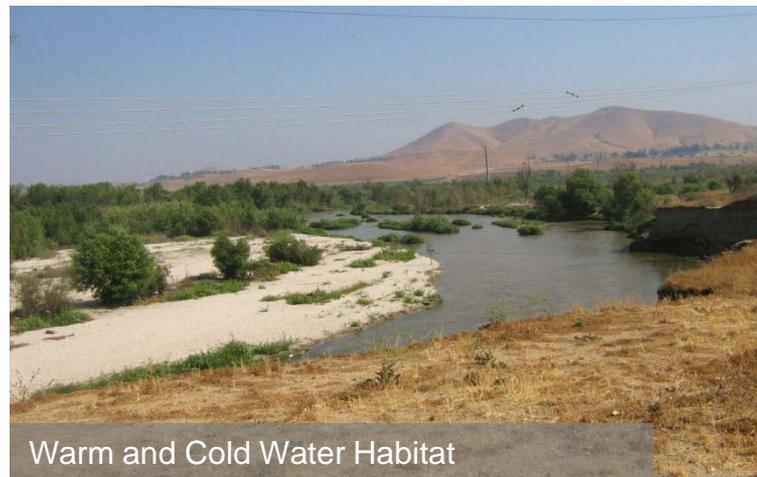
Federal program to protect the Beneficial Uses of lakes, rivers and streams

Recreation on Canyon Lake

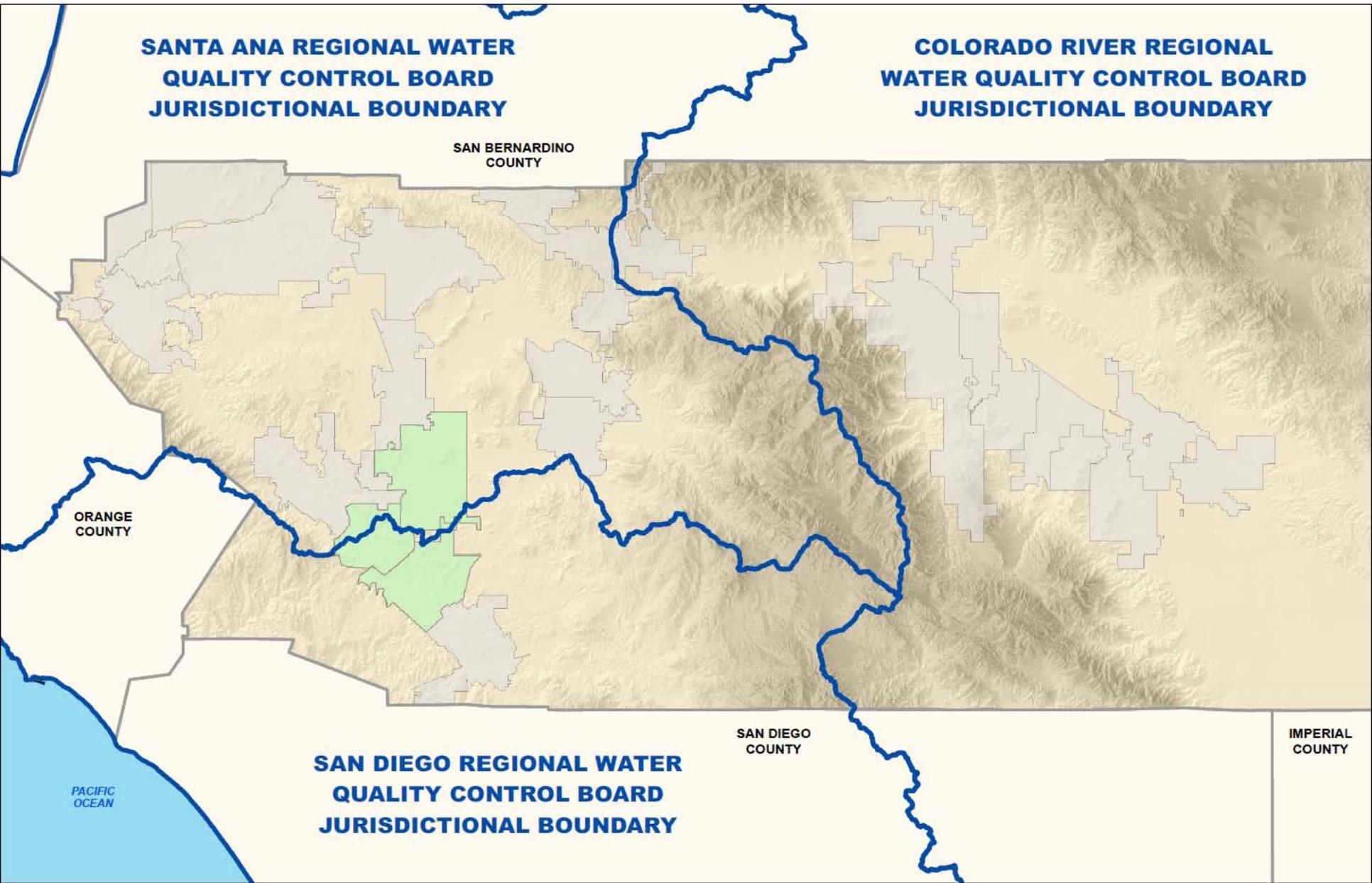


Fishing

Water Supply



Warm and Cold Water Habitat



**SANTA ANA REGIONAL WATER
QUALITY CONTROL BOARD
JURISDICTIONAL BOUNDARY**

**COLORADO RIVER REGIONAL
WATER QUALITY CONTROL BOARD
JURISDICTIONAL BOUNDARY**

**SAN BERNARDINO
COUNTY**

**ORANGE
COUNTY**

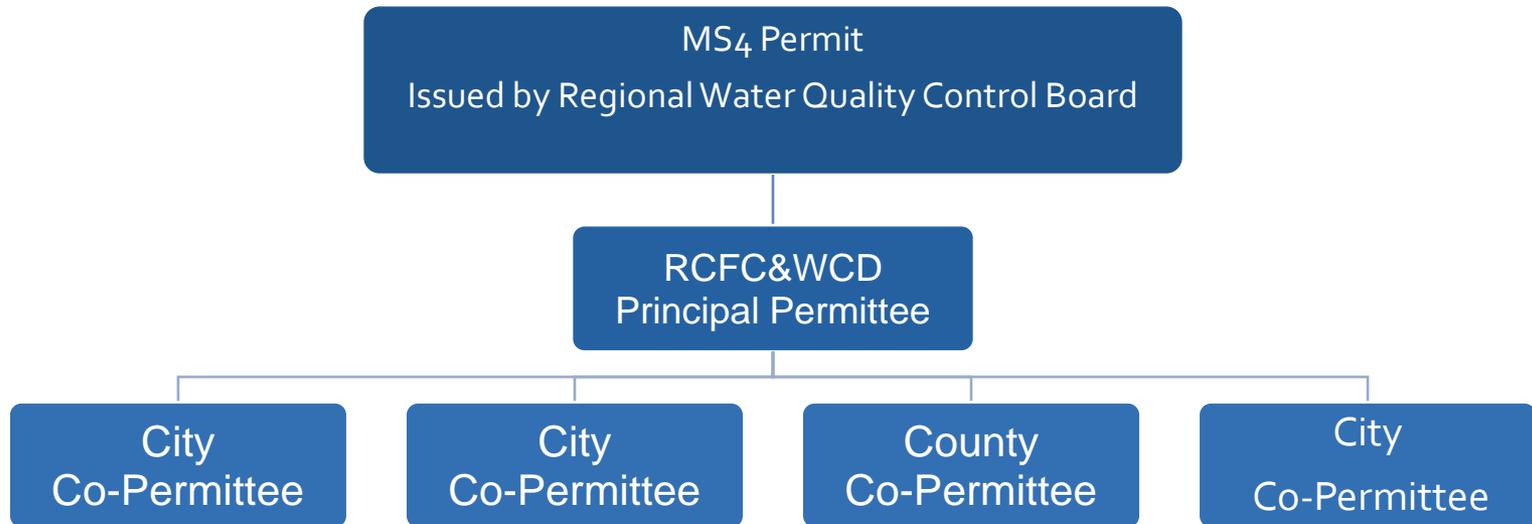
**SAN DIEGO
COUNTY**

**IMPERIAL
COUNTY**

**SAN DIEGO REGIONAL WATER
QUALITY CONTROL BOARD
JURISDICTIONAL BOUNDARY**

**PACIFIC
OCEAN**

Municipal Separate Storm Sewer System (MS₄) Permit Compliance Structure



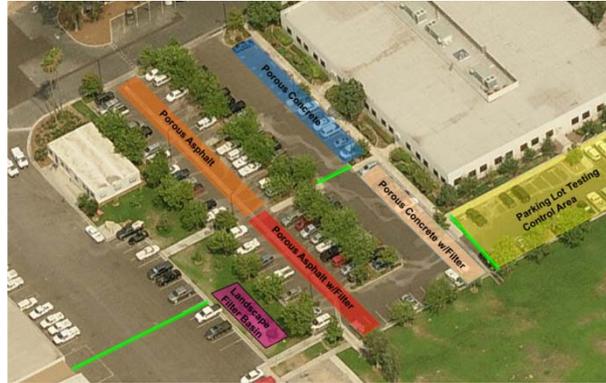
Required to operate storm drain system. Requires:

- Control urban runoff during dry weather
- Prevent stormwater pollution to extent practicable

Basic Preventative Compliance Programs



Code Enforcement



Public Works Project Controls / Urban Retrofit



New Development Controls



Education/Outreach



Municipal Activities



Business Inspection Programs



Lake Elsinore / Canyon Lake:

- Algal blooms
- Fish kills

Cause

- **Nutrients**

Common Nutrient Sources

- Excessive fertilizer use
- Improper yard waste disposal
- Pet waste
- Detergents
- Leaking septic
- Agriculture/Dairies
- Natural sources (wildlife, vegetation, atmosphere)



Total Maximum Daily Load Regulatory Path

TMDL adopted 2005



2010 MS₄ Permit

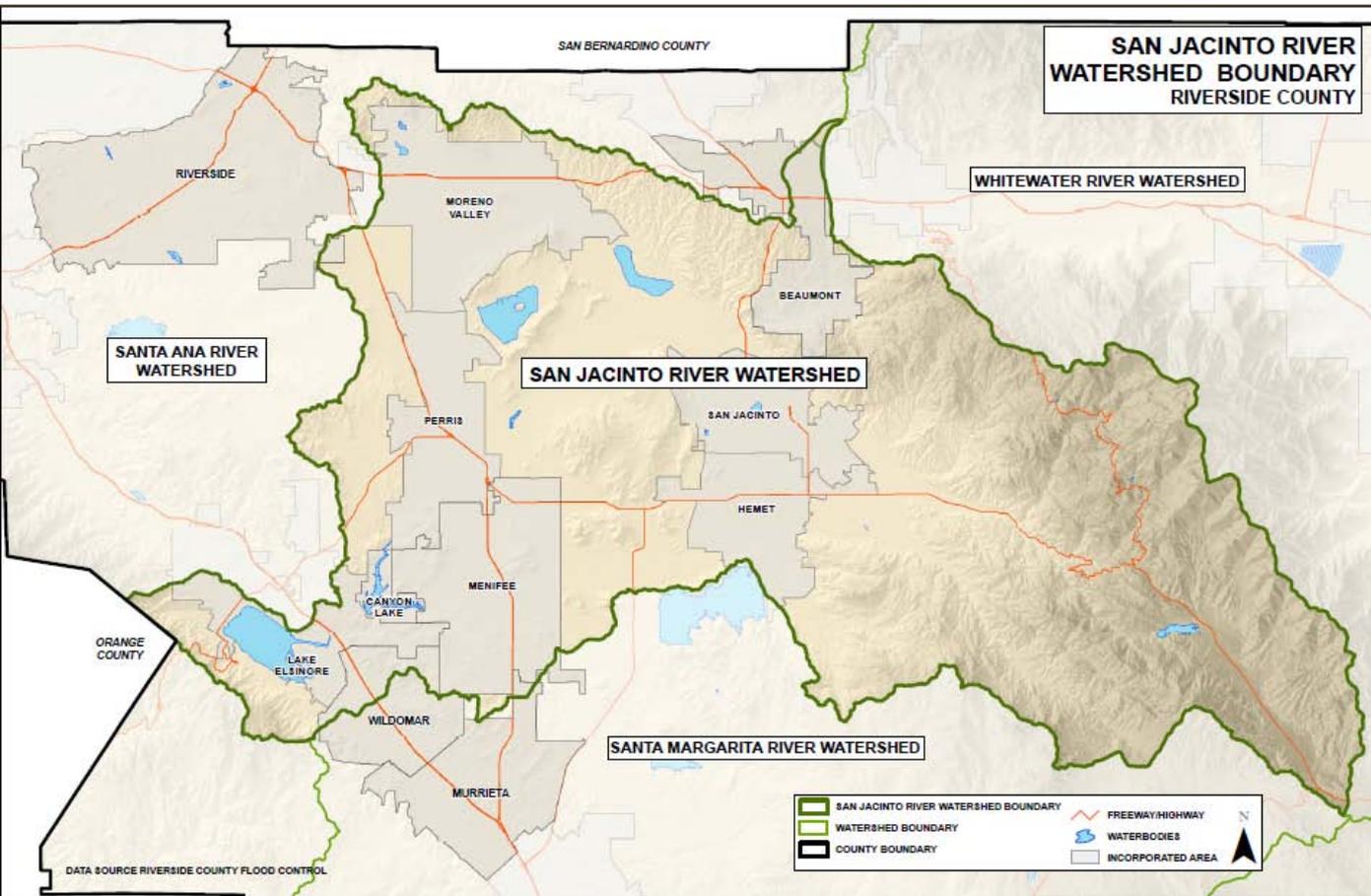


Comprehensive Nutrient Reduction Plan
(CNRPP)

Legally Binding Compliance Document

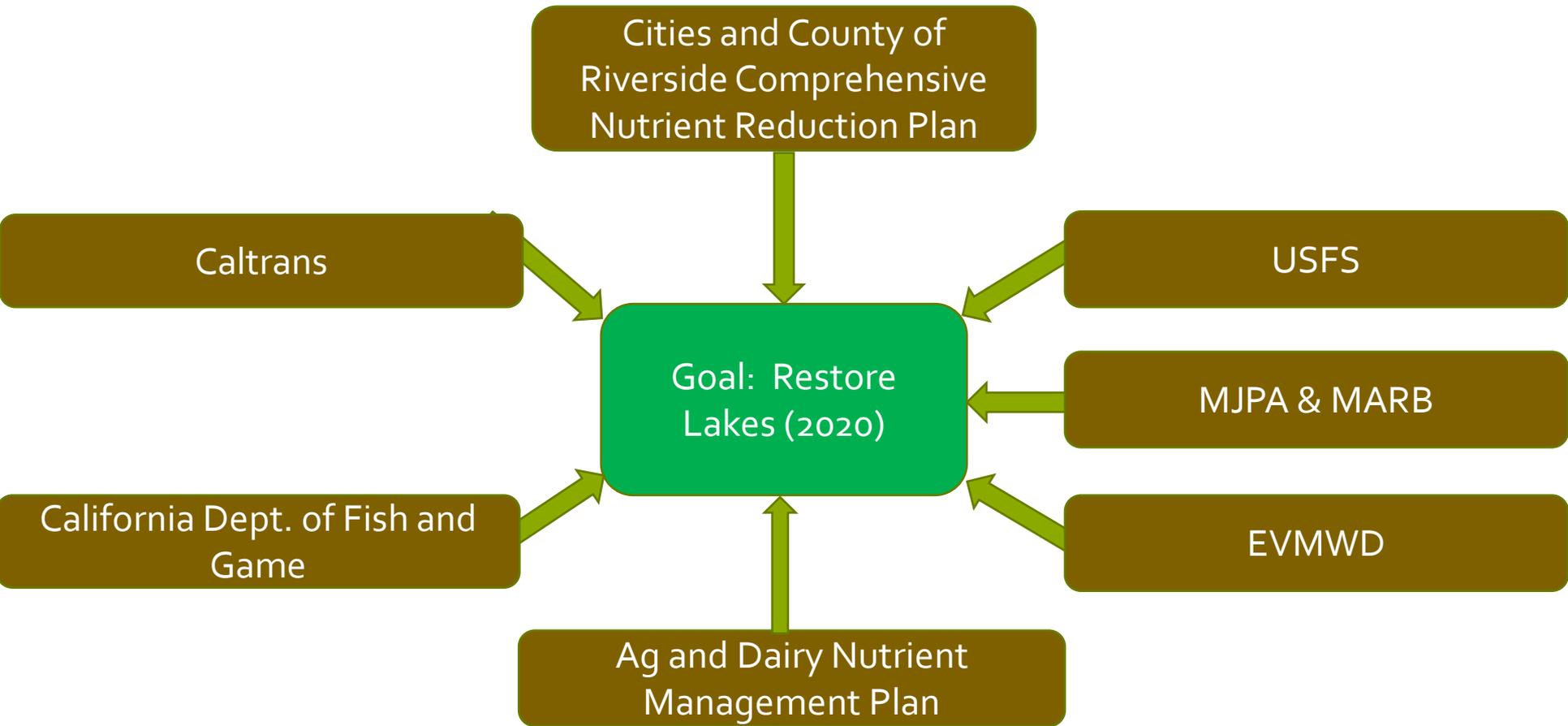
\$10,000 per day violations

CNRP Addresses San Jacinto River Watershed



Riverside County
Beaumont
Canyon Lake
Hemet
Lake Elsinore
Menifee
Moreno Valley
Murrieta
Perris
Riverside
San Jacinto
Wildomar

CNRP is one of many plans required by TMDL



Lake Elsinore and Canyon Lake TMDL Task Force Formed 2006

- **March Air Reserve Base**
- **March JPA**
- **State of California**
 - Santa Ana Regional Water Quality Control Board
 - Department of Fish and Game
 - Department of Transportation
- **County of Riverside**
- **Riverside County Flood Control District**
- **Cities**
 - Beaumont Lake Elsinore Perris
 - Canyon Lake Moreno Valley Riverside
 - Hemet Murrieta San Jacinto
 - Menifee Wildomar
- **Water Agencies:**
 - Eastern Municipal Water District
 - Elsinore Valley Municipal Water District
 - Lake Elsinore and San Jacinto Watersheds Authority
- **Western Riverside County Agricultural Coalition**
 - Dairy Operators (25+)
 - Agricultural Operators (Over 475)

Comprehensive Nutrient Reduction Plan (CNRP) Requirements

Approved July 19,2013

Riverside County
Beaumont
Canyon Lake
Hemet
Lake Elsinore
Menifee
Moreno Valley
Murrieta
Perris
Riverside
San Jacinto
Wildomar

- Phase 1 - Collect data, improve modeling
- Phase 2 - Identify and implement initial lake projects
- Phase 3 –Revise TMDL
- Phase 4 – Identify and implement final lake projects

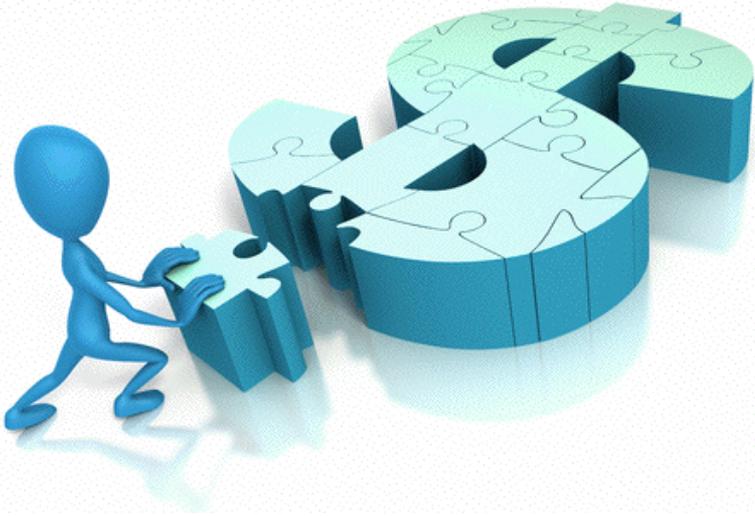
Compliance Deadline: 2020

CNRP TMDL Compliance Strategy



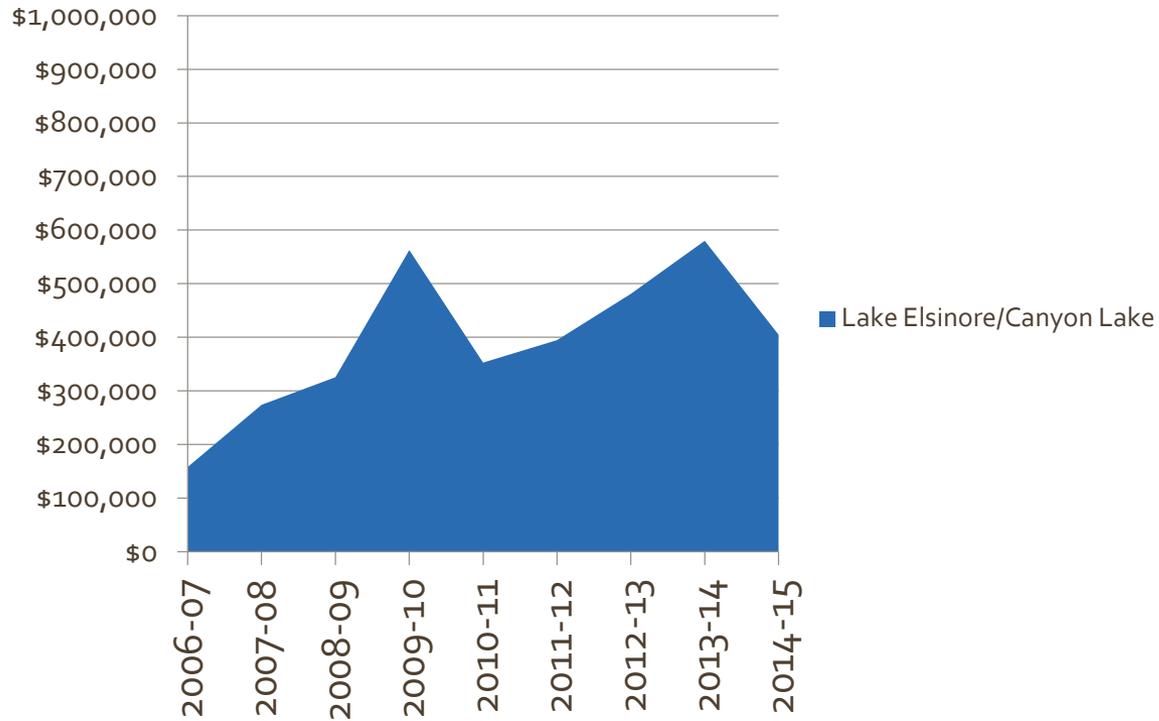
- Phase 1 - Collect data, improve modeling and understanding

Over \$3 million invested in studies of both lakes



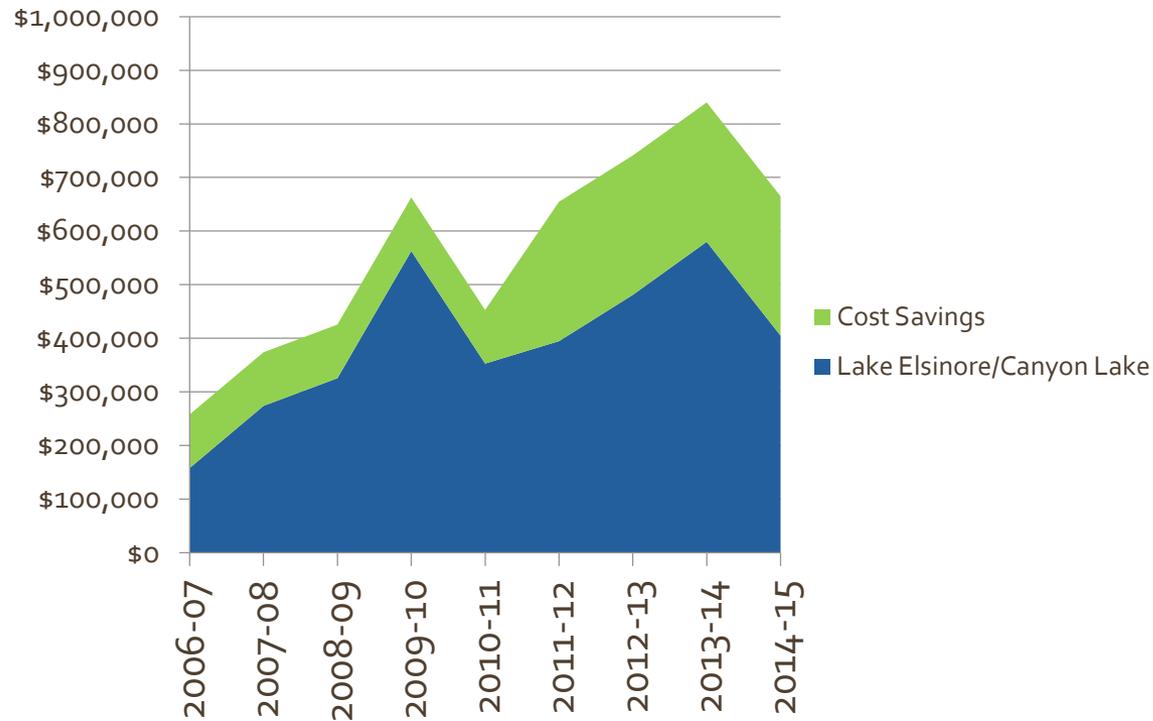
Task Force

Cumulative expenditures: \$3.2 million



Task Force Savings

Cumulative savings from monitoring shifts: \$1.5 million



CNRP TMDL Compliance Strategy



- Phase 1 - Collect data, improve modeling and understanding



- Phase 2 - Identify and implement initial lake projects

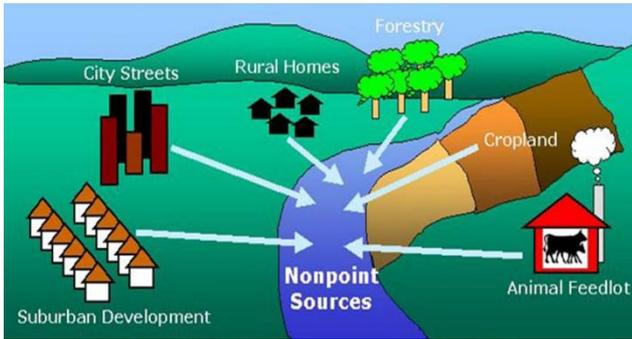
Compliance Issue: The “BIG” Storm



January 1993 – 10"/10 days

December 2010 – 7"/ 8 days

- Need 4,000 total acres for treatment
- Equivalent to a “NEW” Lake Elsinore
 - Billion dollar solution + O&M
- Needed once every 20 years



Watershed Controls

- Where Feasible
- Multiple benefits

In-Lake Controls

- CL: Alum Treatment
- LE: Aeration
- LE: Fishery Mgmt

Compliance
Strategy

Current Costs for Regional Activities and Projects identified in CNRP

Initial Projects	Annual Cost
Canyon Lake Alum Treatment	\$300,000
Lake Elsinore Aeration System	\$500,000
Lake Elsinore Fishery Management	\$200,000
Total Annual Costs	\$1,000,000

Solution still needed for long term cost sharing.

Proposition 13, 40, 84 Grants

- \$500,000 – Proposition 84 Alum treatment grant - 2014
- \$600,000 – Proposition 40 Back basin wetlands / fishery - 2007
- \$13 million - Proposition 13 capital and implementation funding
 - Fishery Management
 - Aeration/Mixing Projects
 - Reclaimed water delivery

CNRP TMDL Compliance Strategy



- Phase 1 - Collect data, improve modeling and understanding



- Phase 2 - Identify and implement initial lake projects

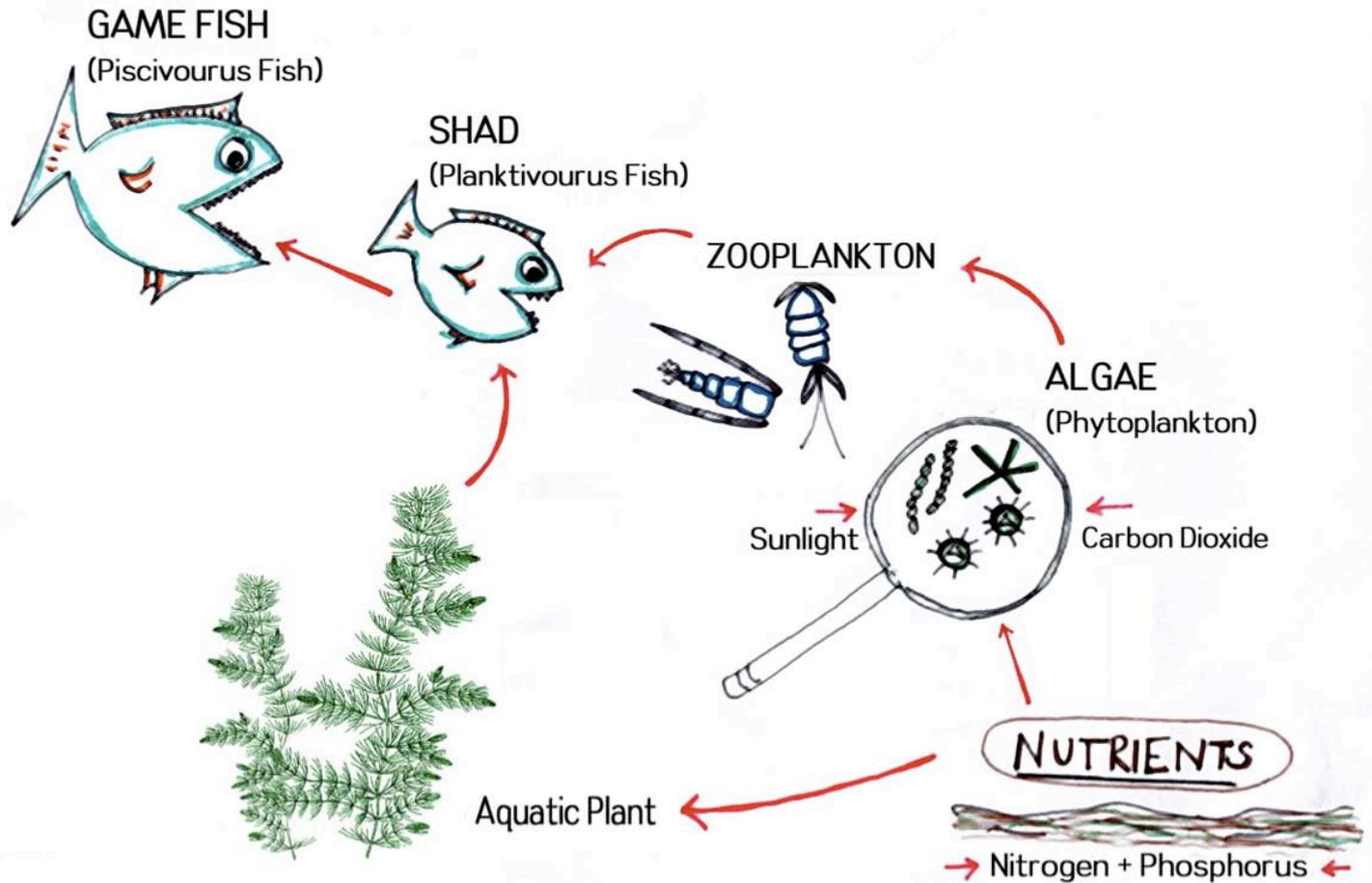


- Phase 3 –Revise TMDL

Hydrologic variability for both watershed and lakes is greater than assumed



Lake Elsinore Food Chain



Lake Elsinore and Canyon Lake

TMDL achievable under pre-development conditions?



ISSUES TO BE ADDRESSED IN TMDL UPDATE

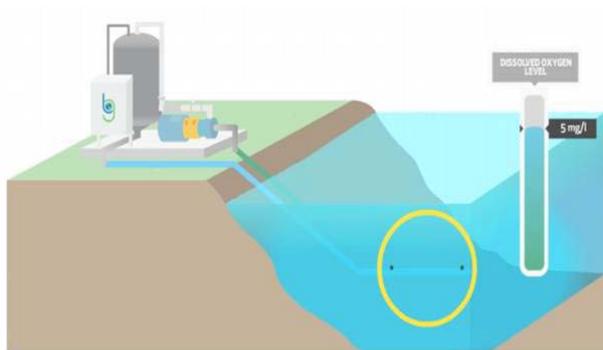
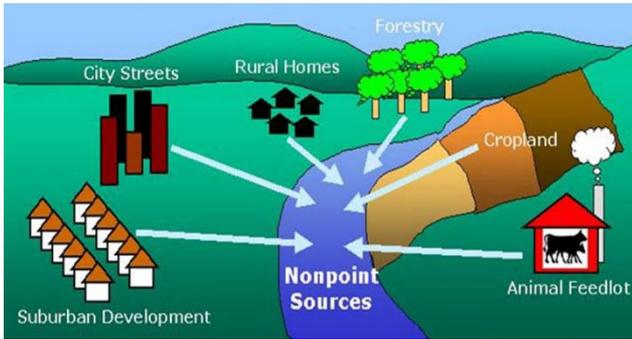
- Lake levels/conditions
- Natural limitations
- Measuring compliance

Estimated Costs: \$500,000

CNRP TMDL Compliance Strategy

- Phase 1 - Collect data, improve modeling and understanding
- Phase 2 - Identify and implement initial lake projects
- Phase 3 –Revise TMDL
- Phase 4 – Identify and implement final lake projects





Watershed Controls

- Where Feasible
- Multiple benefits

Alum Treatment

- Alum Treatment
- Aeration
- Fishery Mgmt

Final Projects

- Unknown at this time

Compliance Strategy

Potential Future Costs for Regional Activities and Projects

Potential Final Projects	Annual Cost	Capital Costs
Reclaimed Water Delivery?	\$1,300,000	
Canyon Lake Oxygenation System?	\$100,000	\$2,200,000
Lake Elsinore Alum Treatment (At Wastewater Plant)?	\$200,000	\$1,000,000
Lake Elsinore Oxygenation System?	\$100,000	\$15,000,000
Total Potential Costs	\$1,700,000	\$18,200,000

Potential Total Costs

Activity	Annual Cost	Capital Costs
Task Force and TMDL Update	\$600,000	
Initial Projects	\$1,000,000	
Final Projects (high end estimate)	\$1,700,000	\$18,200,000
Total Costs	\$3,300,000	\$18,200,000

\$290,000,000 Parcel Tax proposed in LA

L.A. County asking property owners to support stormwater runoff tax

By Christina Villacorte, Staff Writer

Posted: 12/06/2012 09:31:56 PM PST

Updated: 12/06/2012 10:10:46 PM PST



2.2 million properties

\$290,000,000 annually

\$100/home

\$10,000+ for business

School Districts

This is the Tujunga Wash at Vanowen Street and Fulton Avenue in Valley Glen, Calif. (Dean Musgrove/Staff Photographer)

San Diego's stormwater bill: \$4 billion

Nobody really knows the price tag of California's new standards

By **Dan McSwain** 5 P.M. FEB. 17, 2014

PRINT

COMMENTS

8



William Svec, a biologist with the city of San Diego Transportation and Stormwater Department, left, records information while intern Sean Mulderig, right, takes water samples from a storm drain system channeled creek along Murphy Canyon Road. / photo by Howard Lipin ^ U-T

San Diego City Stormwater:

\$4 billion over 17 years.

Businesses and consumers will spend billions more.

Comparison Statistics:

Unfunded pension liability:
\$2.3 billion

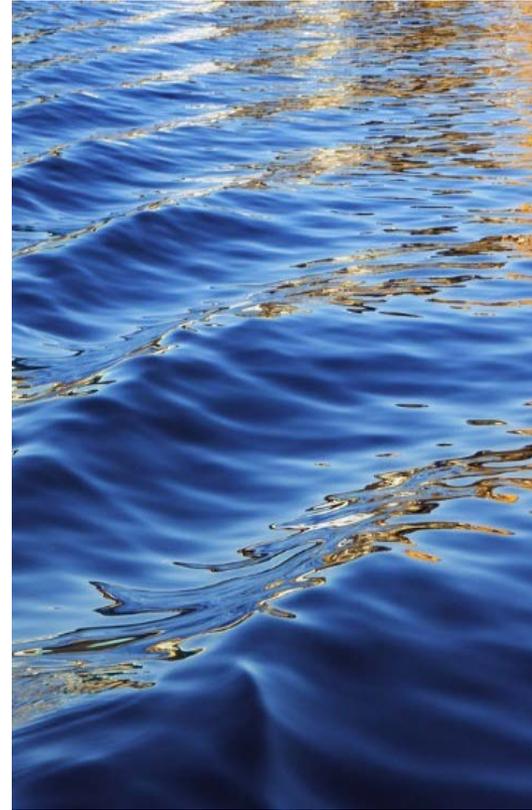
Total revenue: \$2.75 billion



California's quest for clean water is about to get very, very expensive.

Questions?

We must all hang
together or assuredly
we will all hang
separately.
Ben Franklin



End of Show