

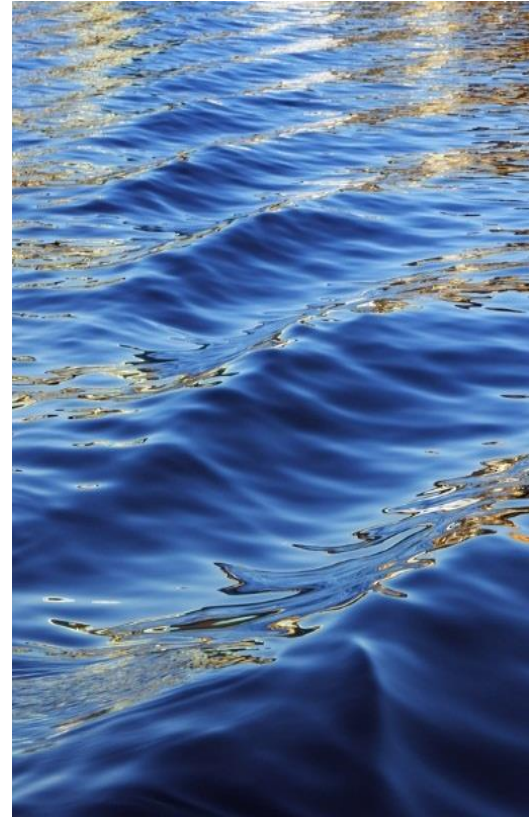
MS₄ Permits and TMDLs

Using Partnerships to Manage Costs

Jason Uhley

Chief of Watershed Protection

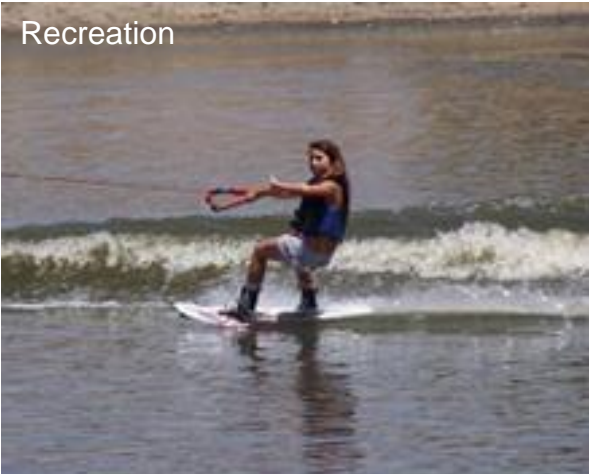
Riverside County Flood Control
and Water Conservation District



Clean Water Act (CWA)

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

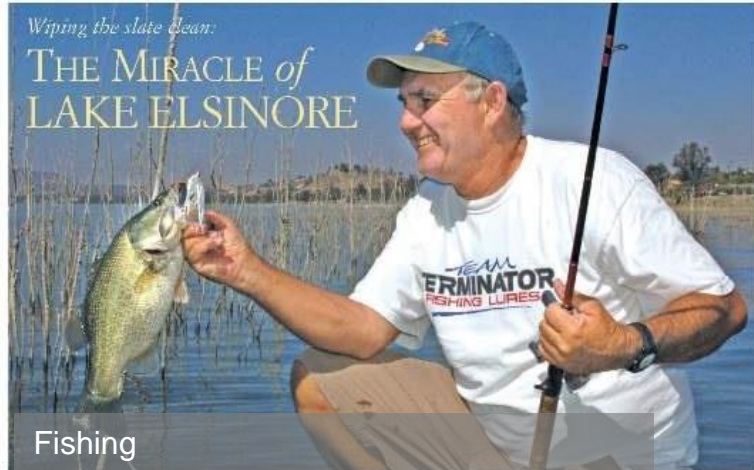
Recreation



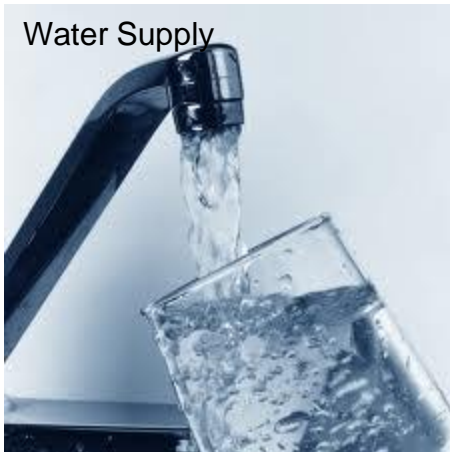
Wiping the slate clean:

THE MIRACLE of LAKE ELSINORE

Fishing

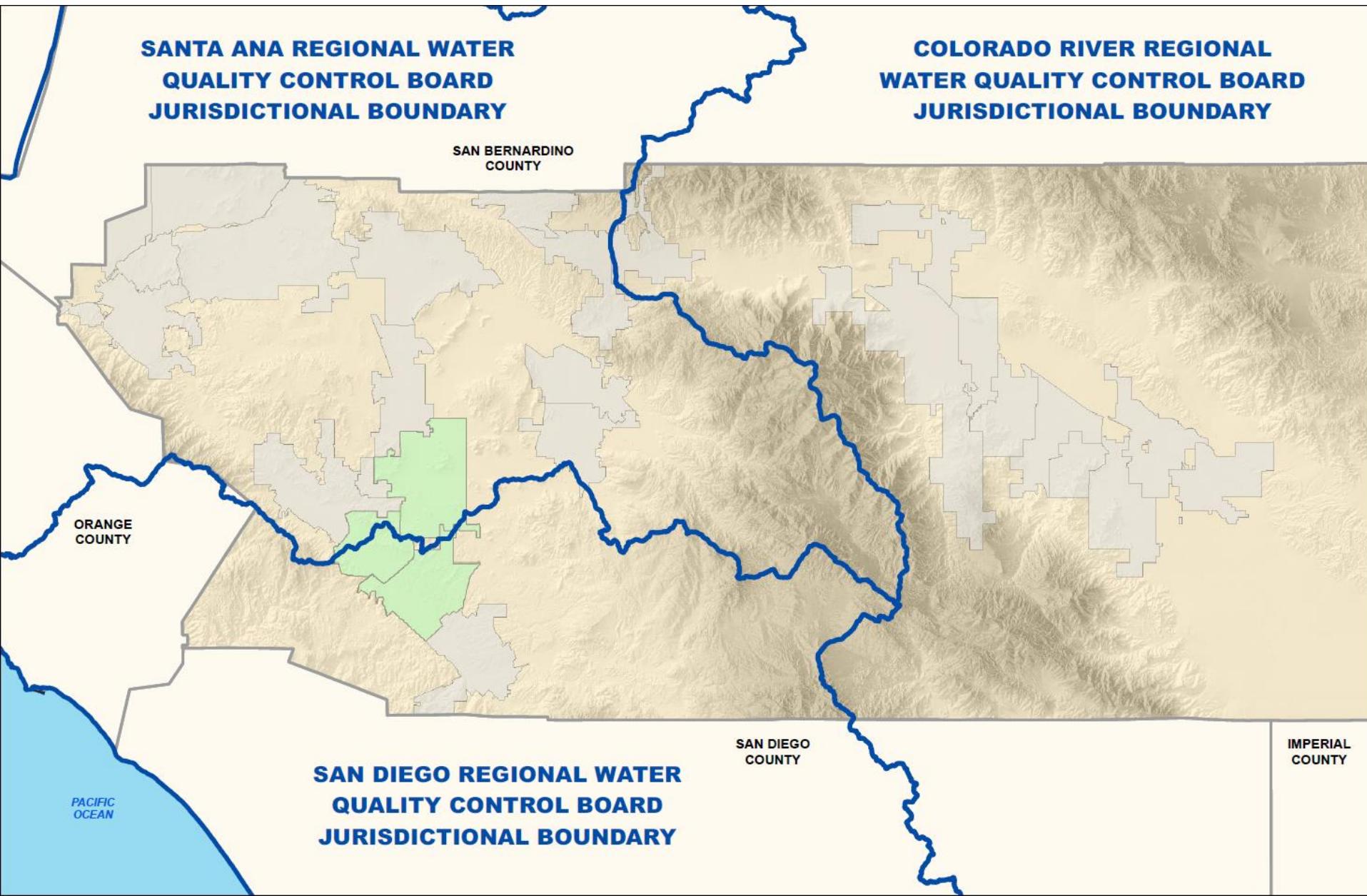


Water Supply

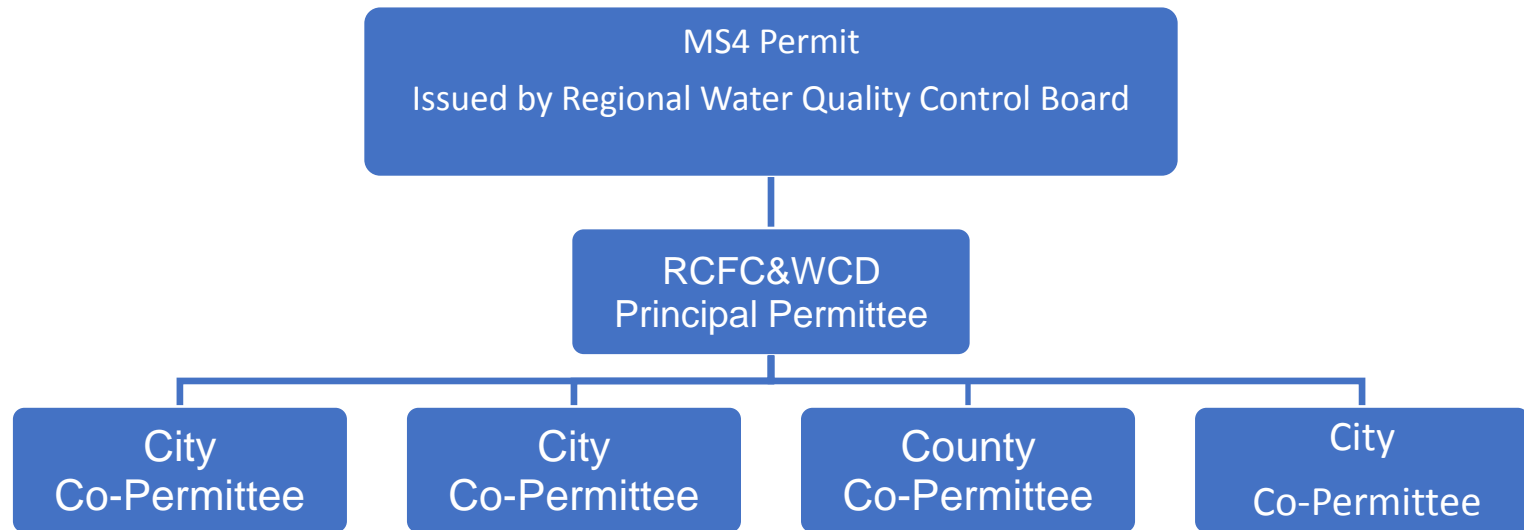


Warm and Cold Water Habitat

Regional Water Quality Control Board Jurisdictions



Municipal Separate Storm Sewer System (MS4) Permit Compliance Structure



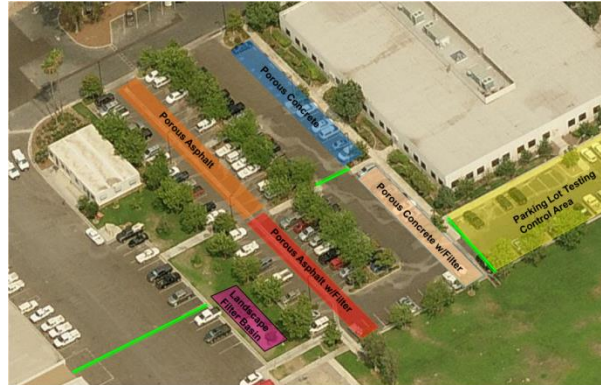
Required to operate storm drain system. Requires:

- Control of urban runoff (e.g. irrigation runoff) during dry weather
- Control of sources of pollution in rainwater runoff during wet weather

Municipal Separate Storm Sewer System Standard Compliance Programs



Code Enforcement to
Eliminate Illegal
Discharges



Public Works Project
Stormwater Treatment



New Development
Stormwater Treatment



Public Education/Outreach



Municipal Programs to
Reduce Sources of
Pollution



Business Inspection
Programs to reduce
sources of pollution

Lake Impairments Despite Best Efforts



Lake Elsinore / Canyon Lake

- **Algal blooms**
- **Fish kills**

Cause

- **Nutrients**

Common Nutrient Sources



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

Total Maximum Daily Load (TMDL)

Special regulation to restore impaired waters.

TMDL adopted 2005



2010 MS4 Permit



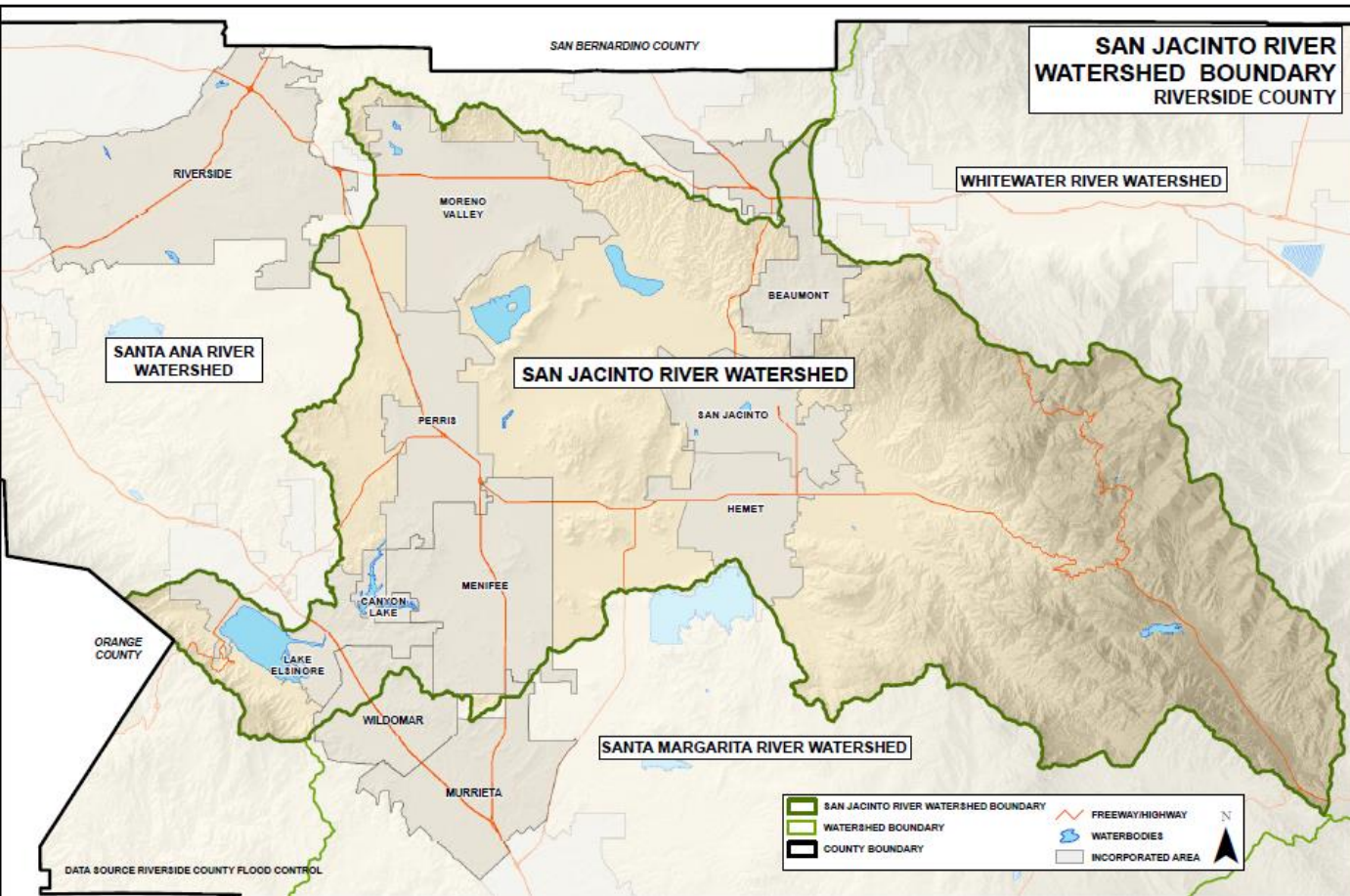
Comprehensive Nutrient Reduction Plan (CNRP)

Approved July 19, 2013

TMDL is enforced through CNRP

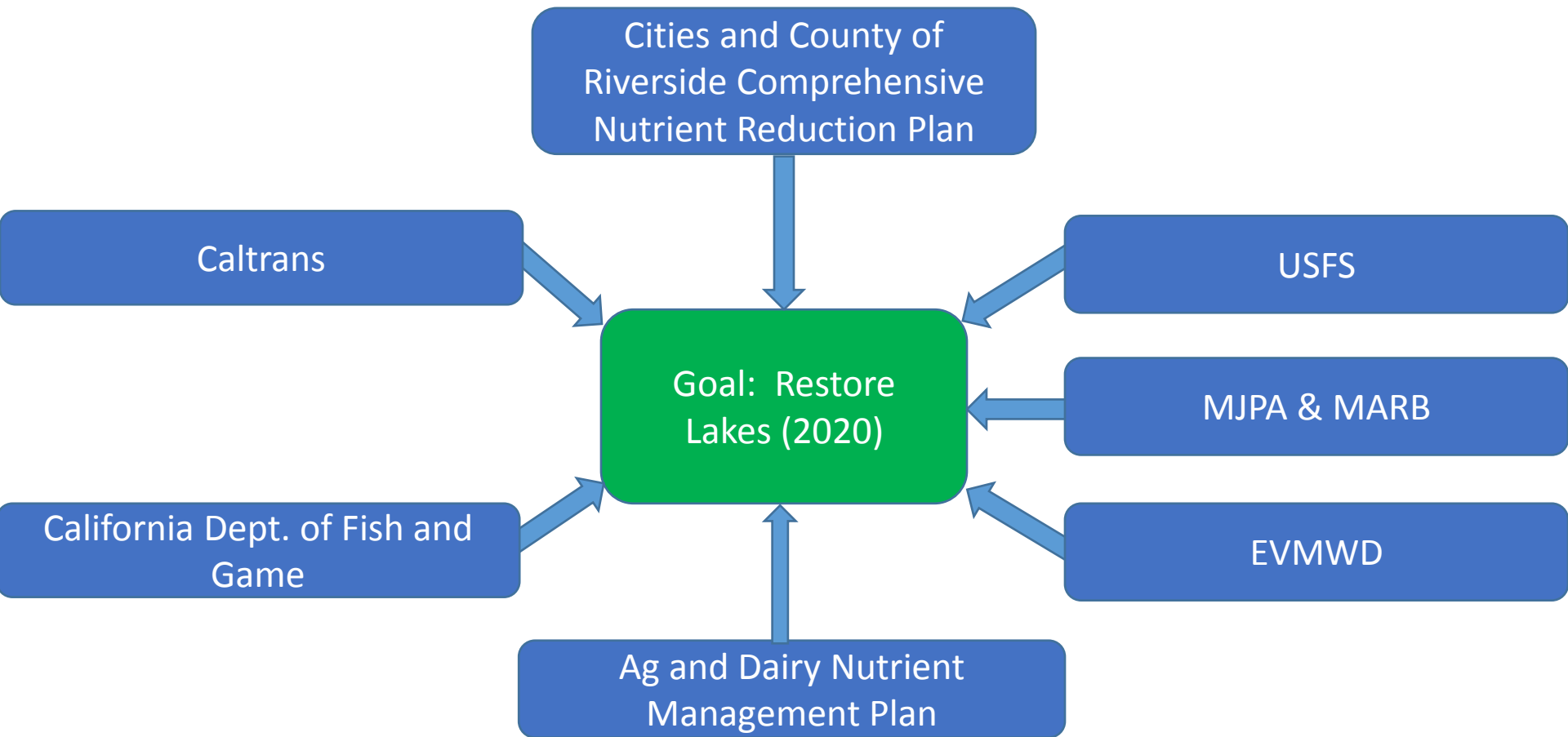
\$10,000 per day for violations

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 (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

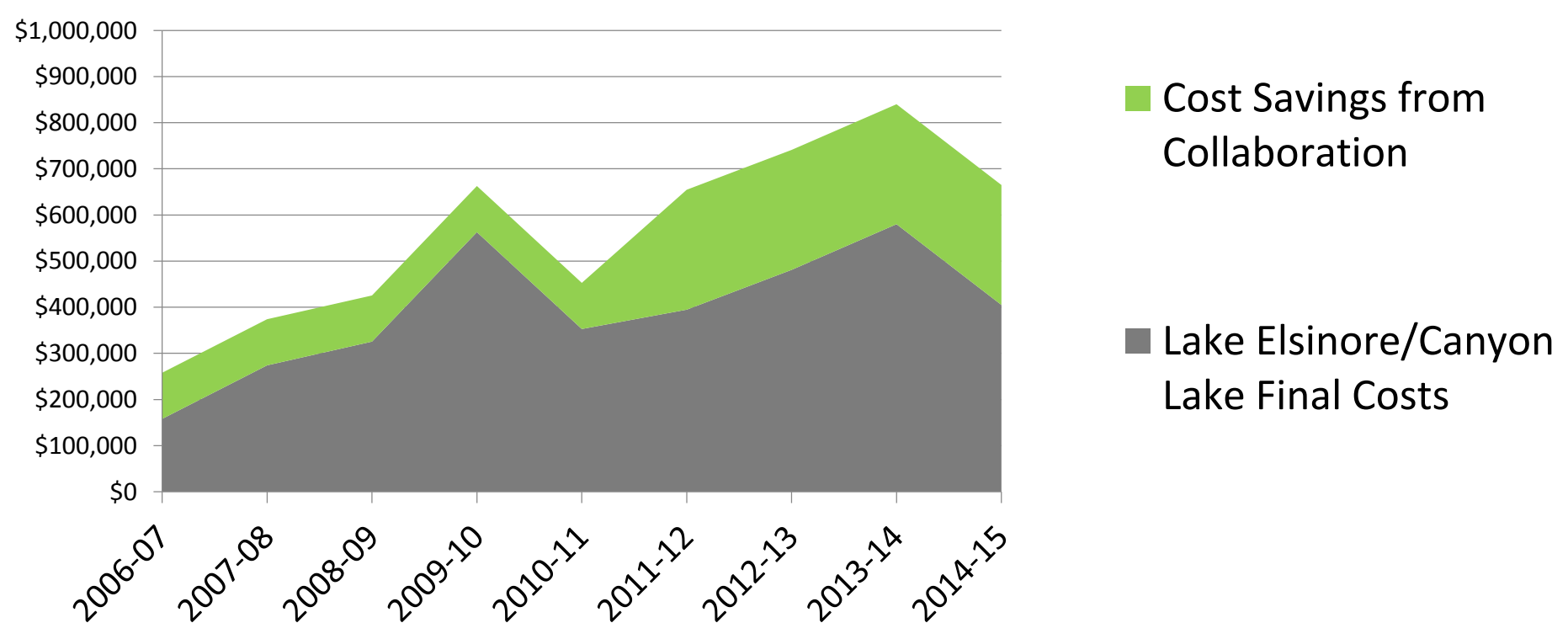
- Phase 1 - Collect data, improve modeling
- Phase 2 - Identify and implement initial lake projects
- Phase 3 –Revise TMDL
- Phase 4 – Identify and implement final lake projects

Compliance Deadline: 2020

CNRP TMDL Compliance Strategy



Phase 1 - Collect data, improve modeling and understanding

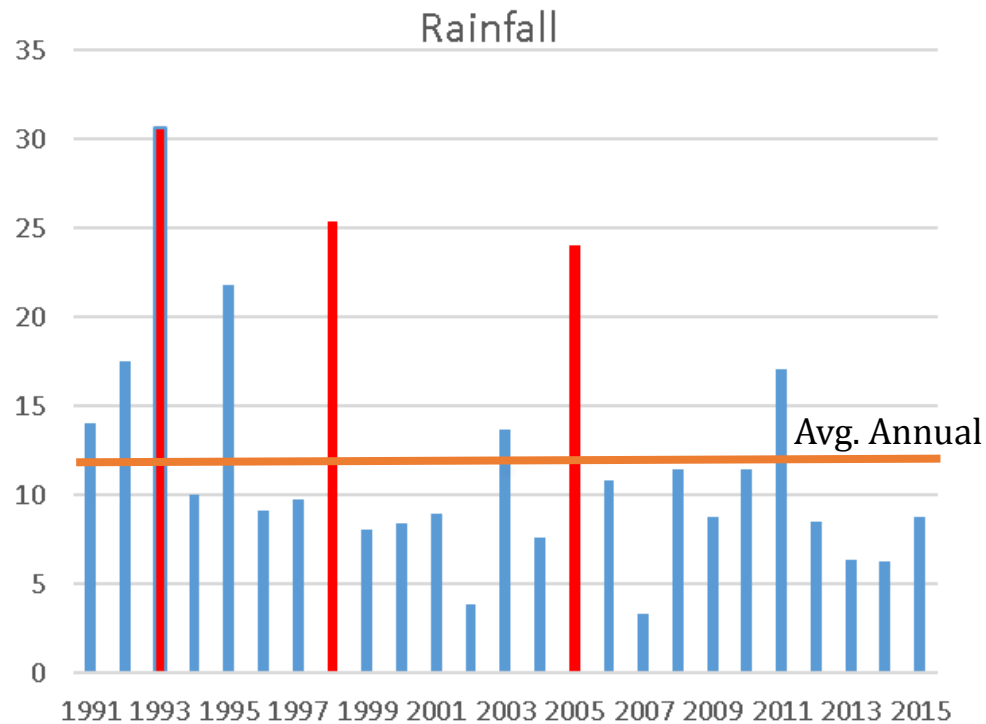
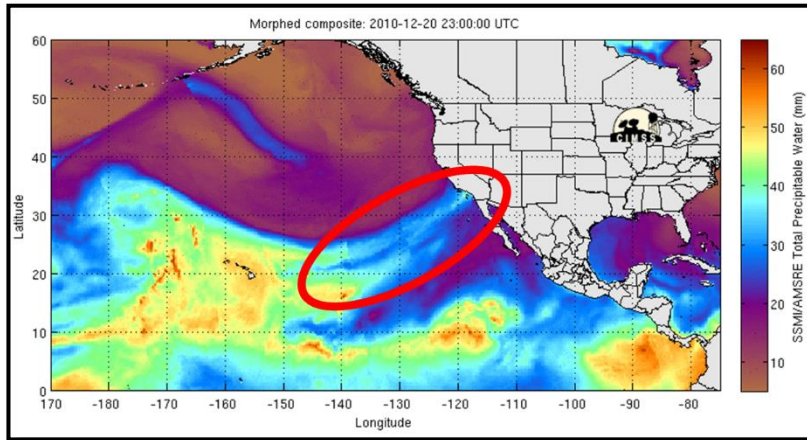


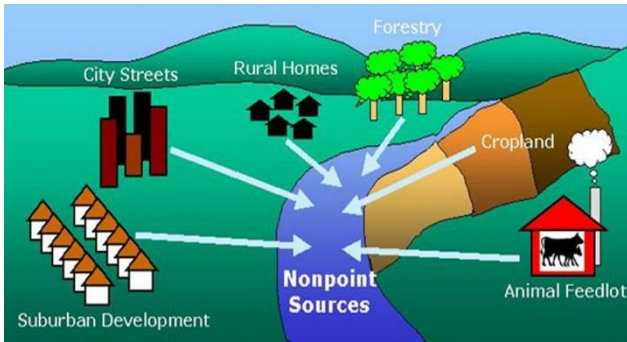
Over \$1.5 million saved by Task Force Coordination

CNRP TMDL Compliance Strategy

Phase 2 – Identify and Implement Initial Projects

Challenge: Not possible to remove nutrients entrained in extreme storm flows





Watershed Controls

- Where Feasible
- Multiple benefits

In-Lake Controls

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

Compliance Strategy

LESJWA and Task Force 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

Estimated City/County Costs for Regional Projects

Initial Projects	Estimated Annual Cost
Canyon Lake Alum Treatment	\$260,000
Lake Elsinore Aeration System	\$139,500
Lake Elsinore Fishery Management	\$12,000
Total MS4 Costs	\$411,500

Cost sharing framework approved FY15-16

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

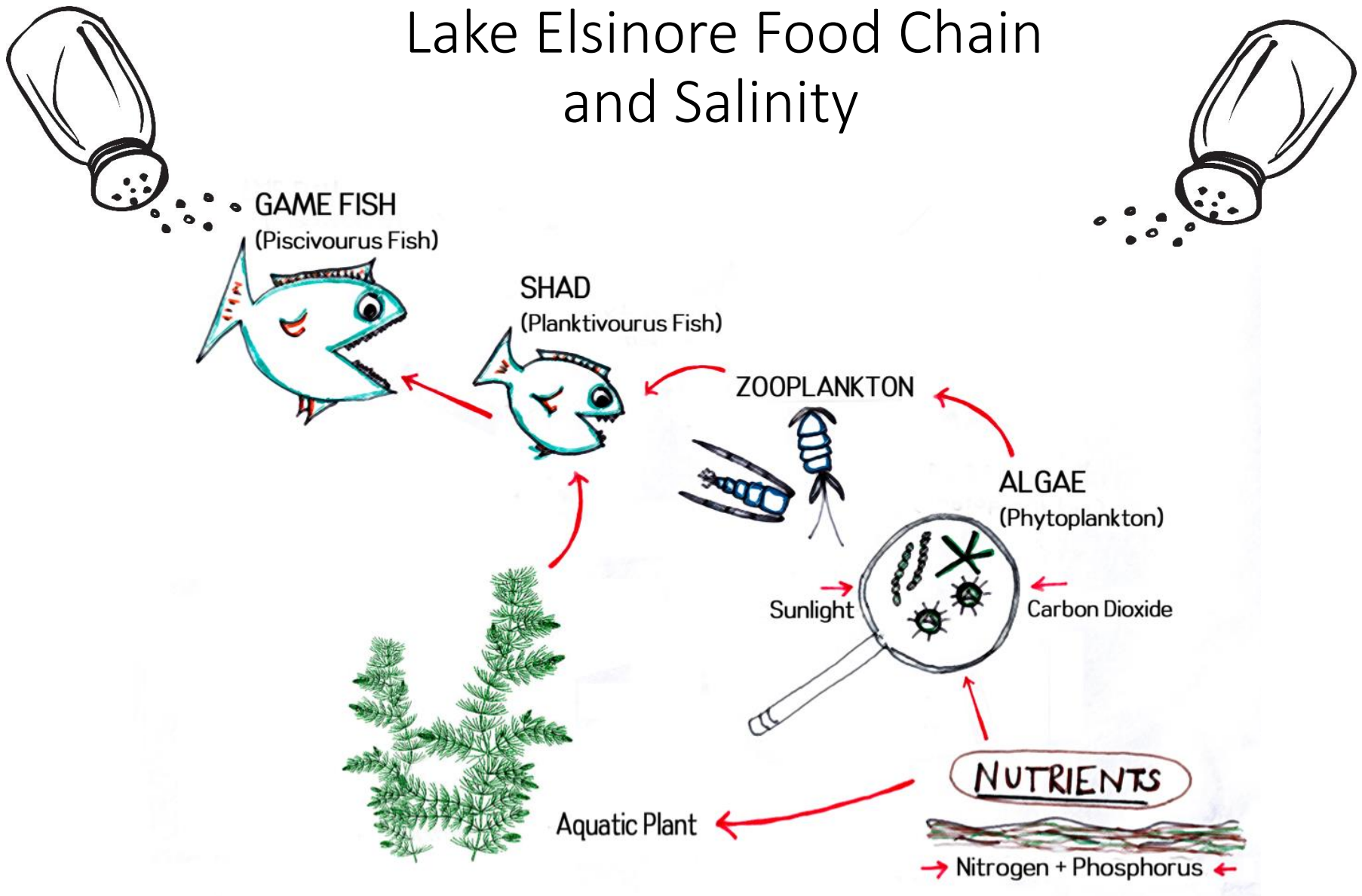


Lake Elsinore and Canyon Lake

TMDL achievable under pre-development conditions?



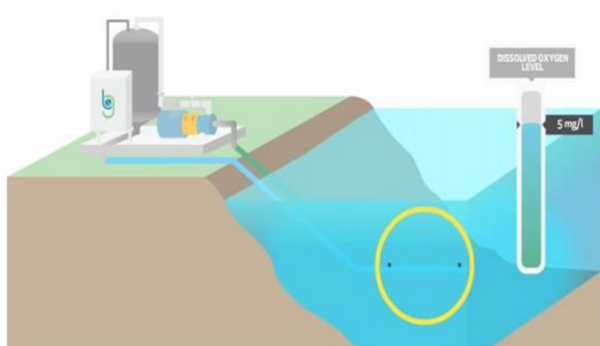
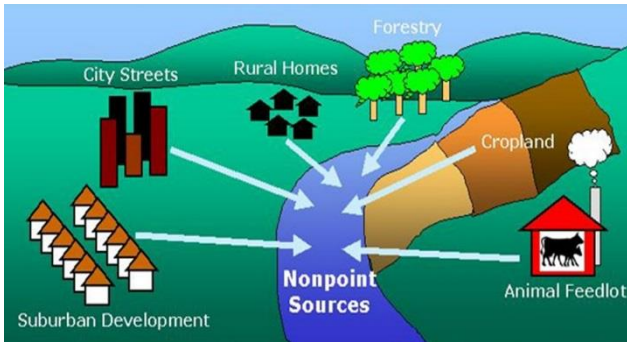
Lake Elsinore Food Chain and Salinity



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 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

\$290,000,000 Parcel Tax proposed in Los Angeles

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, indeed, all hang together or, most assuredly, we shall all hang separately.

(Benjamin Franklin)

izquotes.com

End of Show