

Sustainable Management in the Lower American River

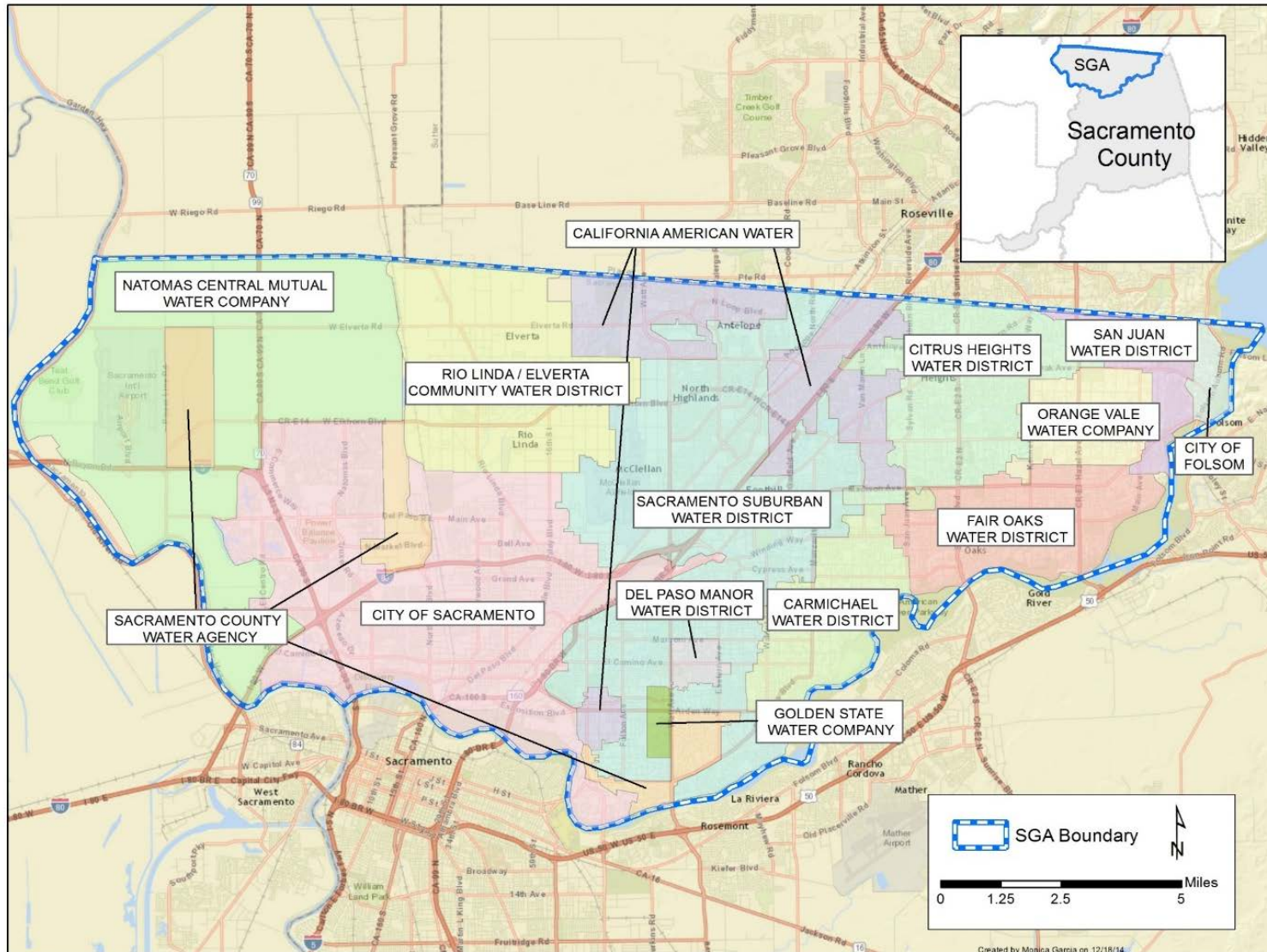


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Sacramento Groundwater Authority
August 29, 2017

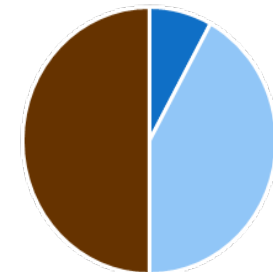
Overview

- Background
 - Sacramento Groundwater Authority (SGA)
 - Why Did SGA Form?
 - Sacramento Area Water Forum
- Considering Stream Depletion under SGMA
 - Modeling Tool
 - Monitoring Network
 - Threshold Values
- Going Forward under SGMA

SGA Background

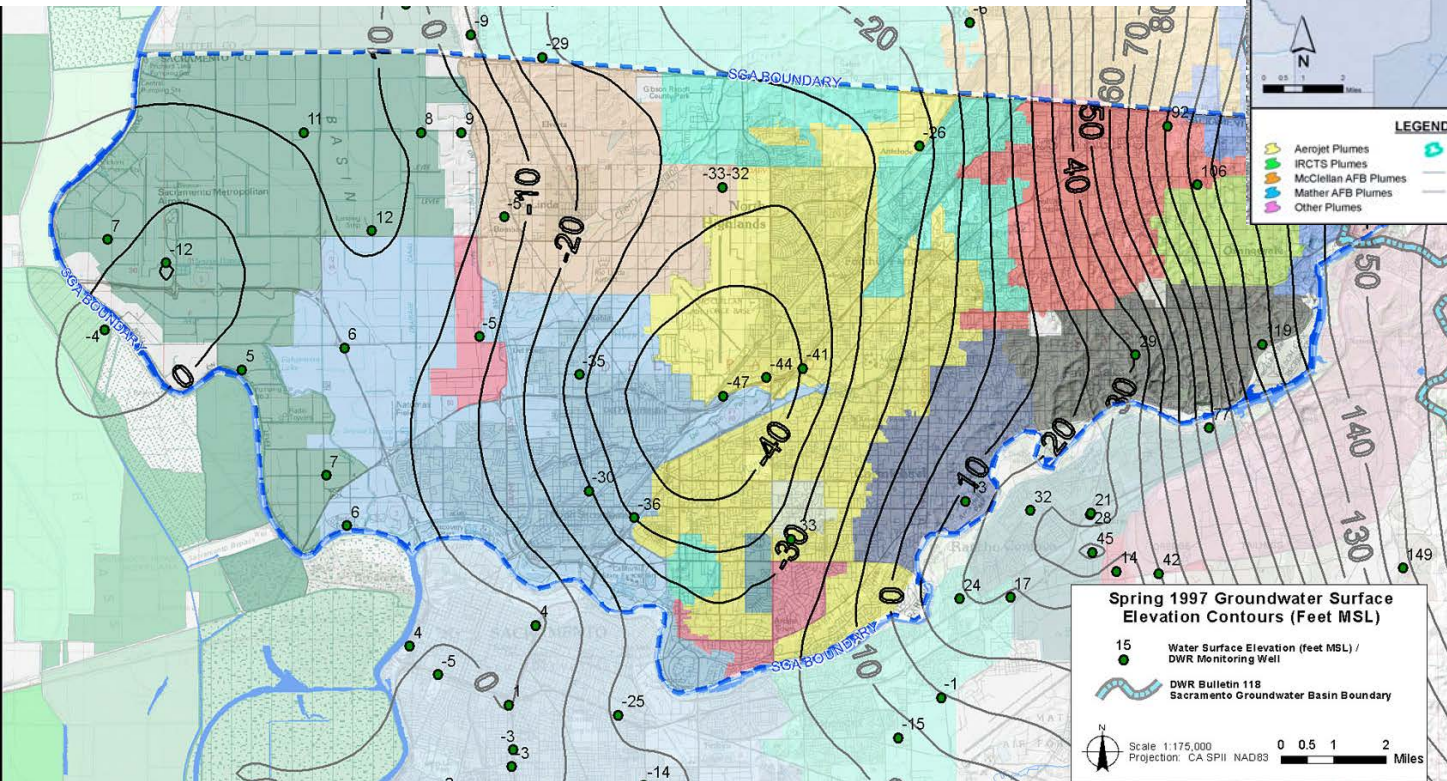
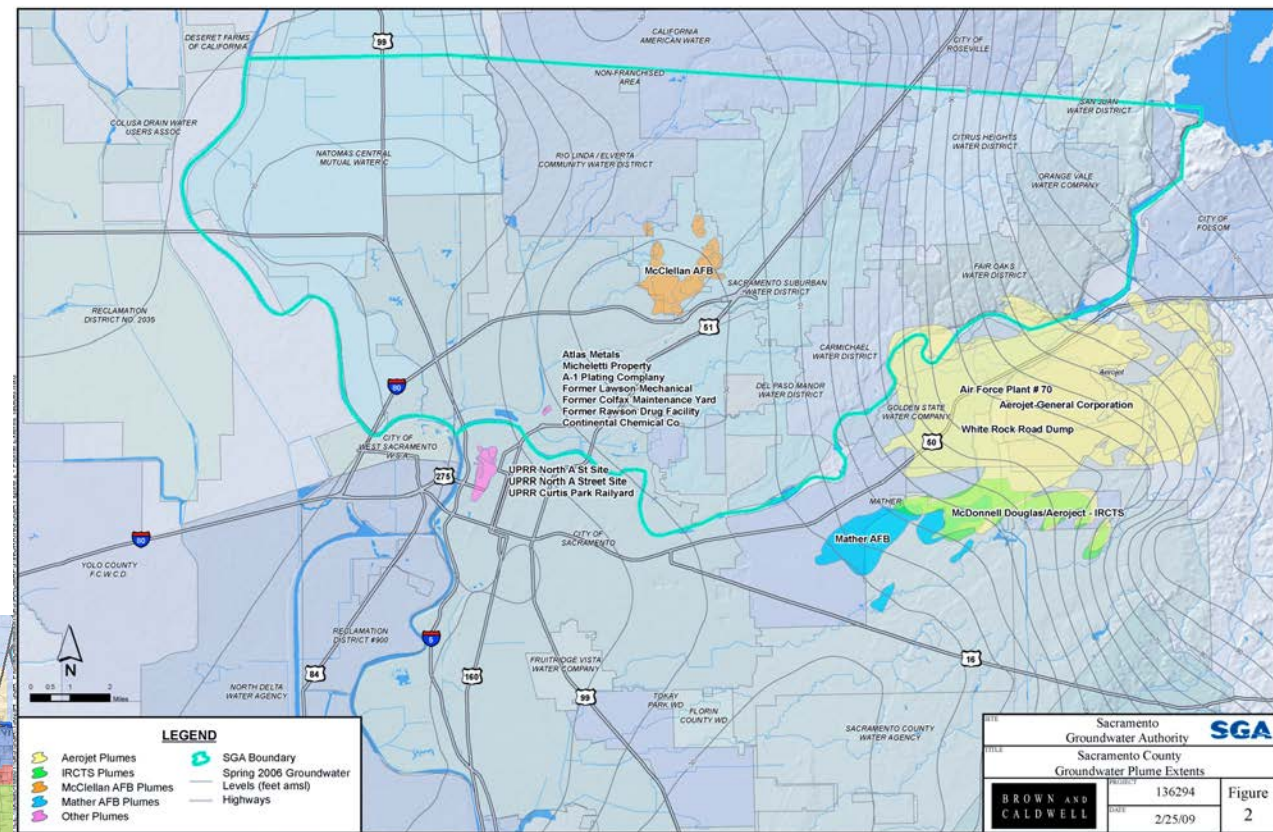


- Joint powers authority formed in 1998
- Use police powers of 3 cities and county
- 14 water suppliers and 2 independent pumping groups comprise Board
- Population of about 500,000
- 195 square mile area under north Sac County
- 2.2 full-time staff

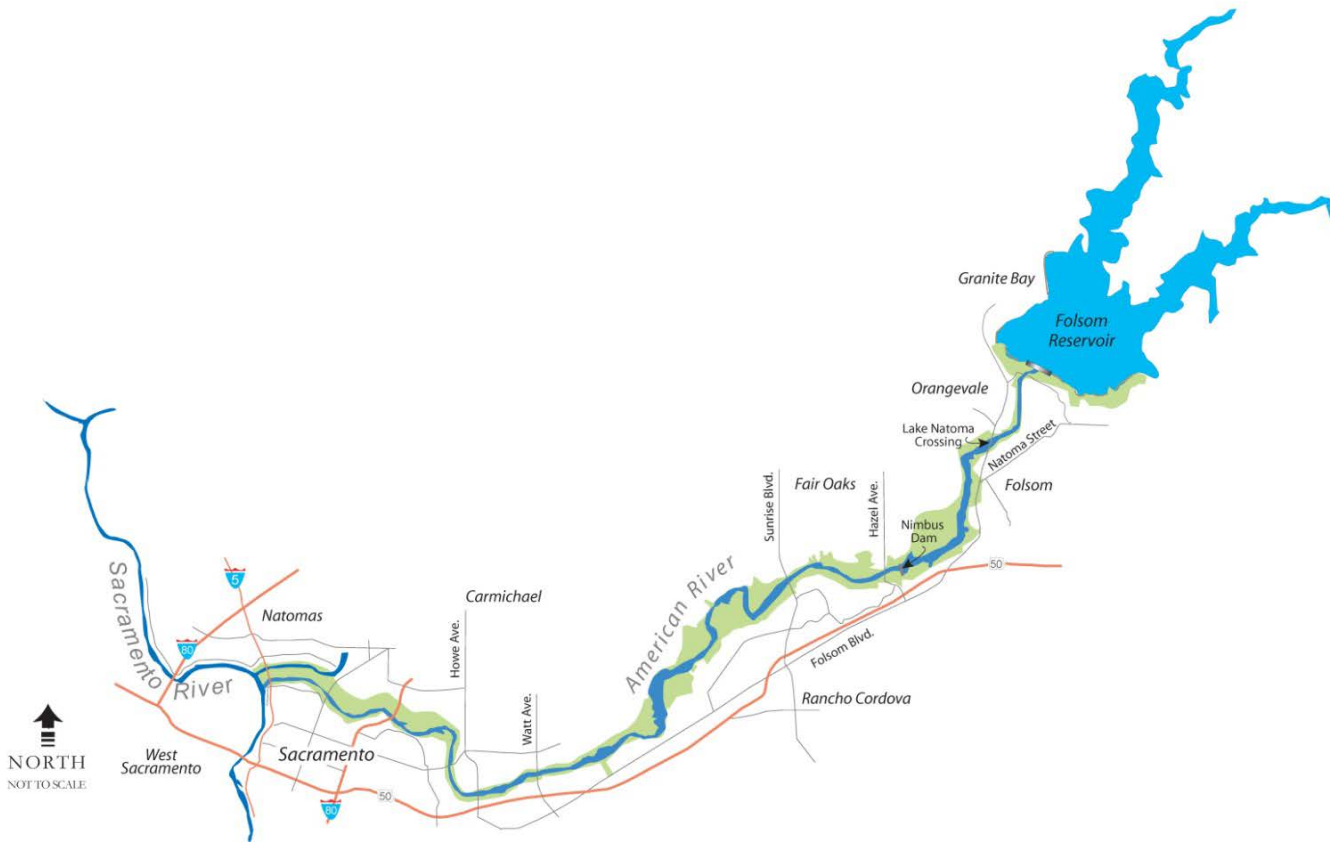


■ Sacramento River ■ American River ■ Groundwater

Why Did SGA Form?



Why Did SGA Form?

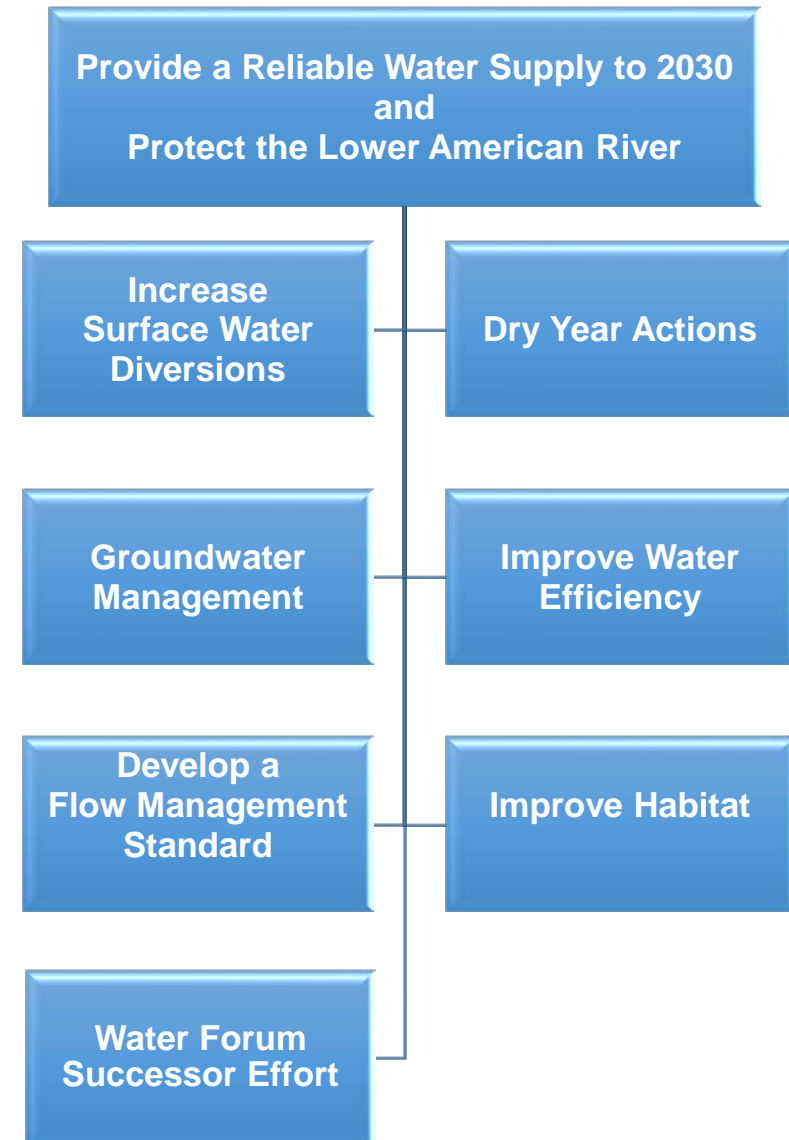


Lower American River

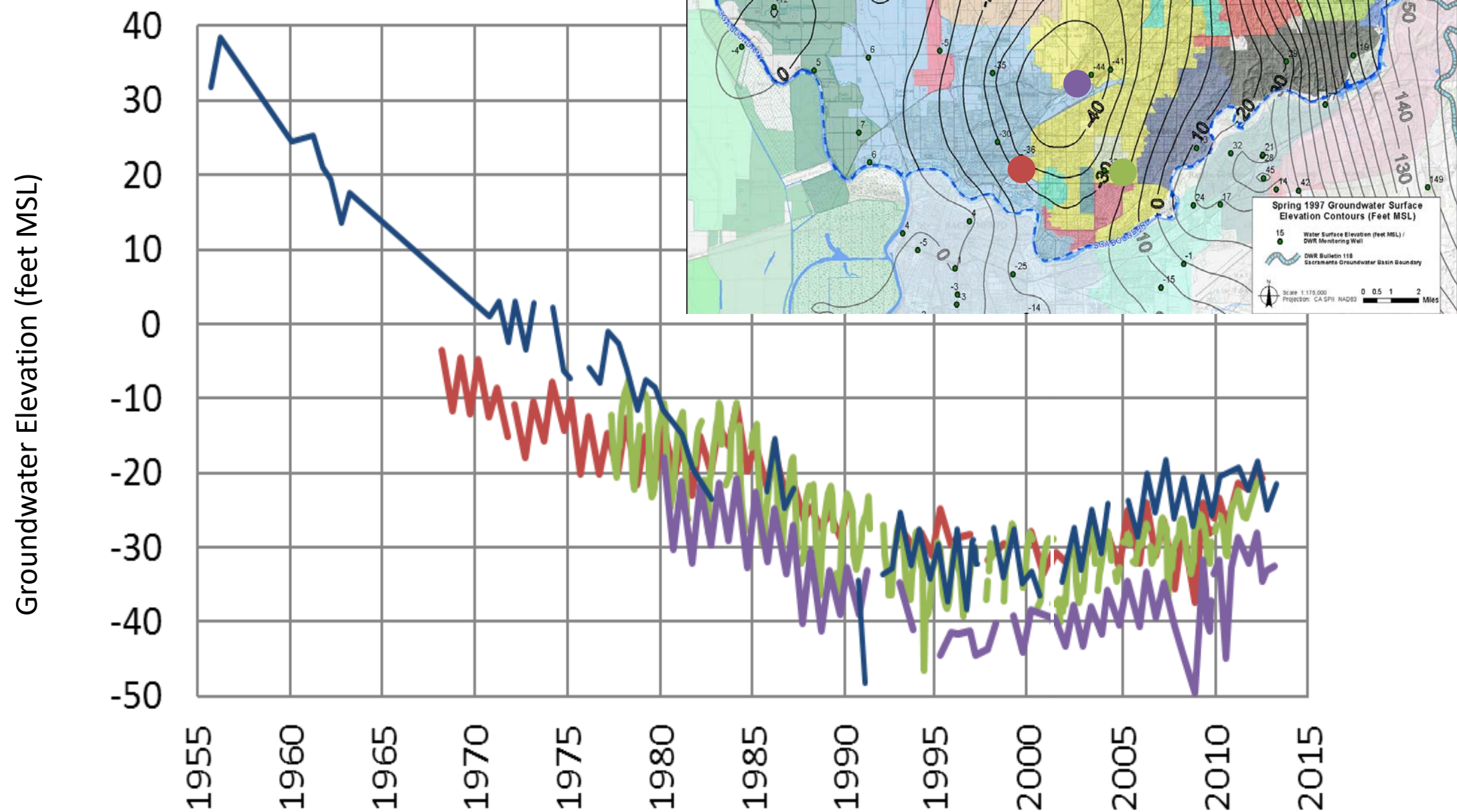
- 23 mile stretch of Wild & Scenic Designated River
- Home to over 40 fish species including Central Valley Steelhead and Fall-run Chinook Salmon
- Runs through the American River Parkway
- Point of diversion for much of region's surface water supply
- Increased diversions for growth in 1970s-80s were met with increasing resistance from environmental community

Sacramento Area Water Forum

- Started in 1993
- Engaged in nearly 7-year professionally facilitated process of technical studies and negotiations
- Developed an integrated set of solutions with co-equal objectives
- Resulted in Water Forum Agreement in April 2000
- Signed by 40 stakeholder groups representing business, municipalities, environment, and water suppliers



From Challenge to Success



Considering Stream Depletion under SGMA

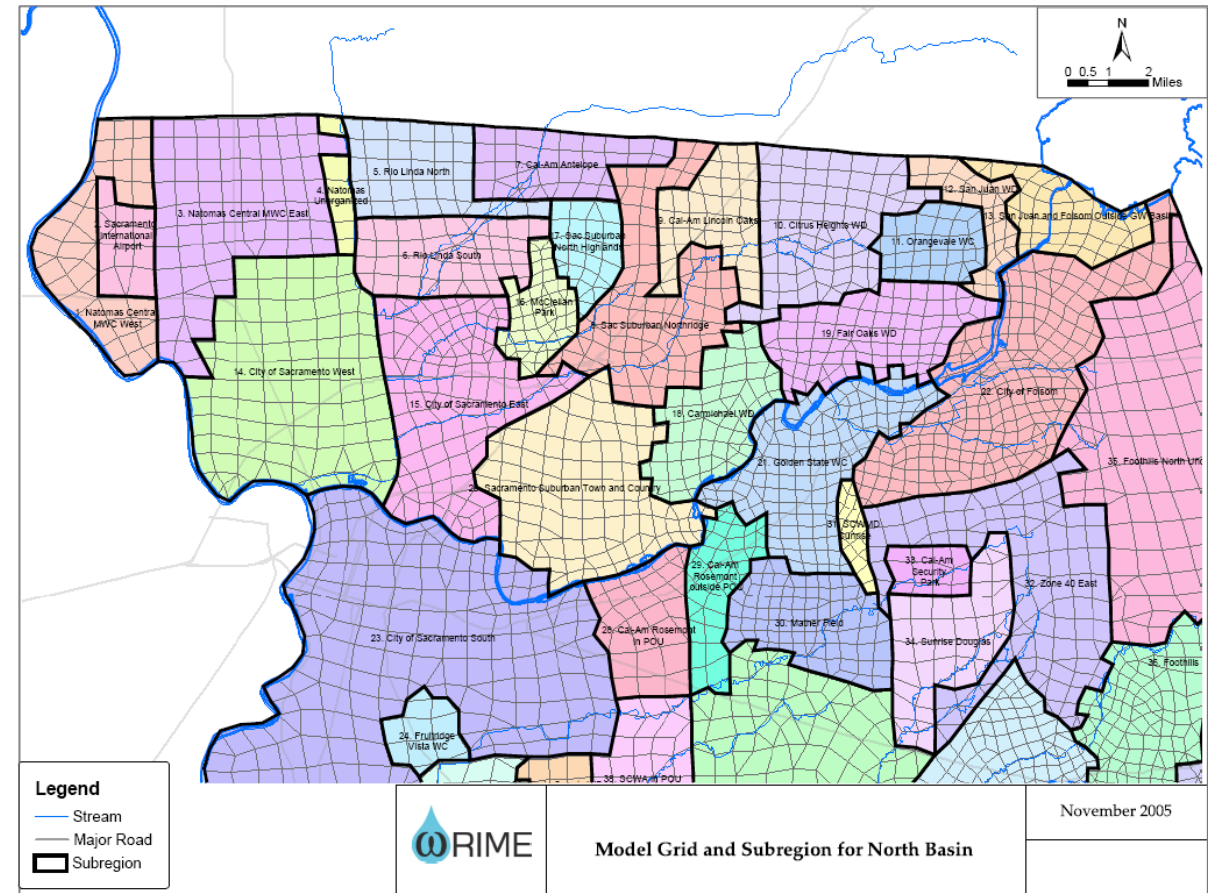
1. Modeling Tool
2. Monitoring Network
3. Monitoring Thresholds

Caveats:

- Much of what we have done was well in advance of SGMA
- Some of what we have done needs to be revisited under SGMA

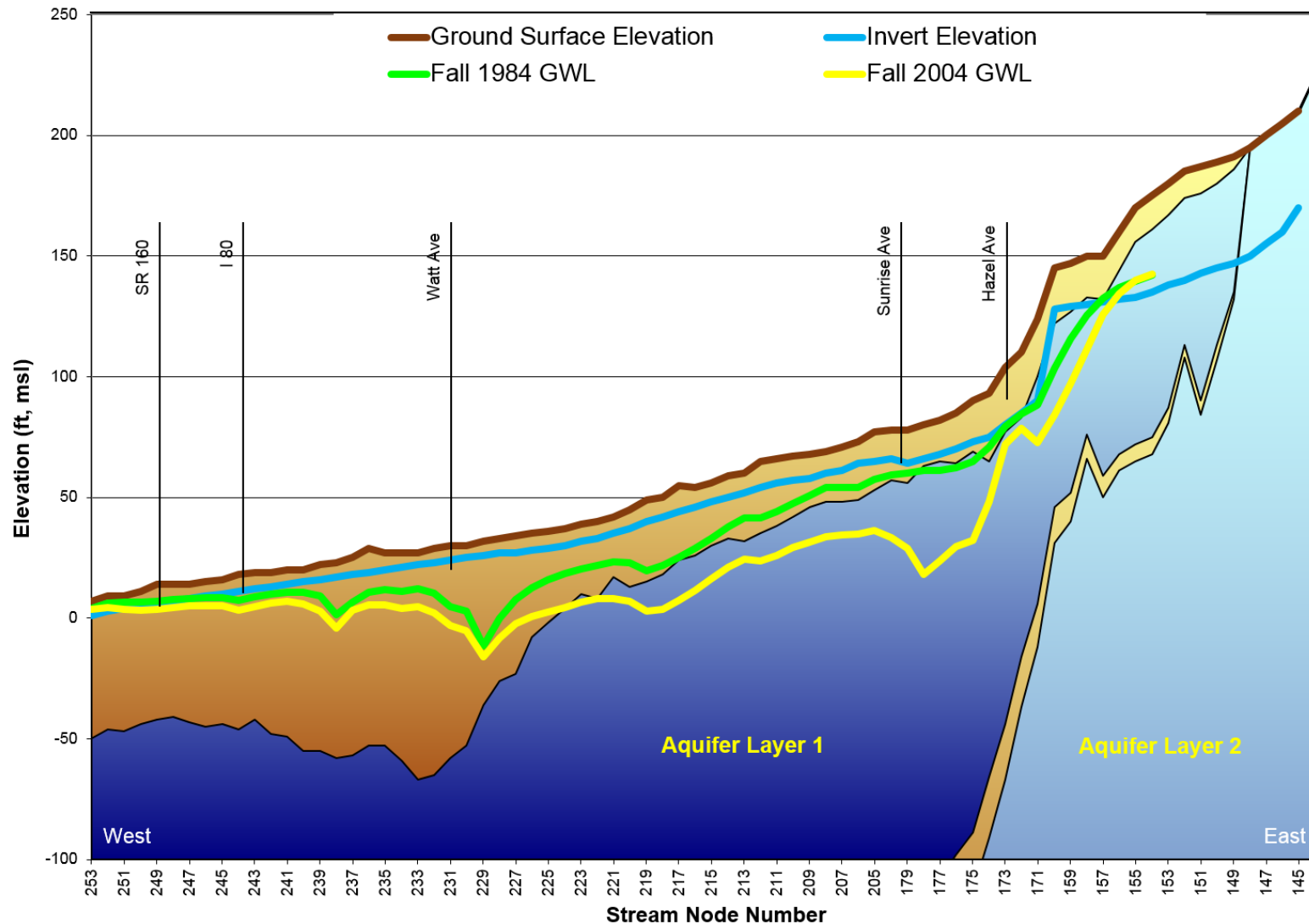
Modeling Tool

- First county-wide model completed in 1993
- Used Integrated Groundwater Surface Water Model (IGSM)
- Major update completed in 2007 (partial DWR grant funding)
- Used to estimate:
 - Comprehensive water budget
 - Sustainable yield
 - Sources of recharge



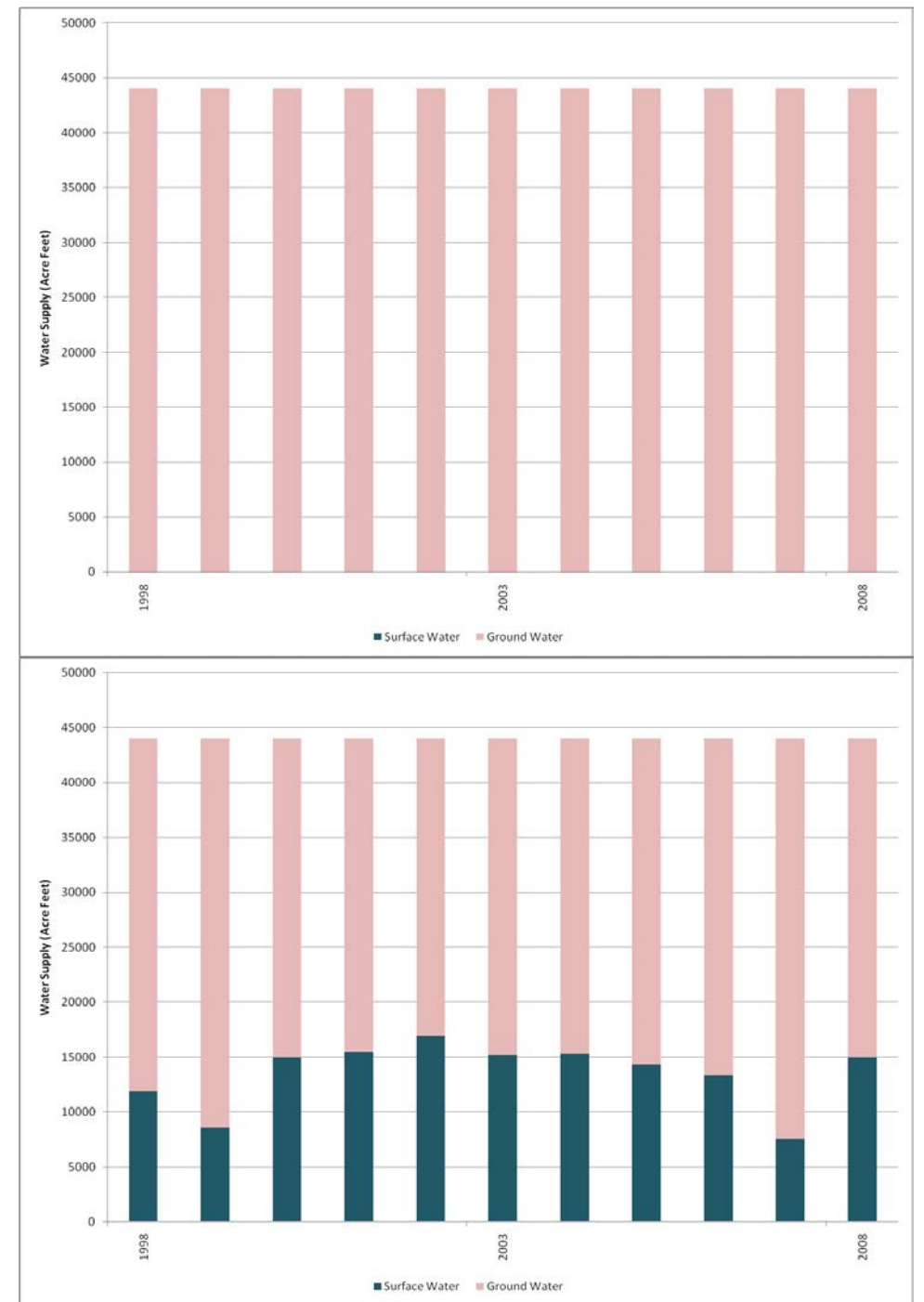
Surface Water/Groundwater Relationship

Groundwater System Profile along the American River



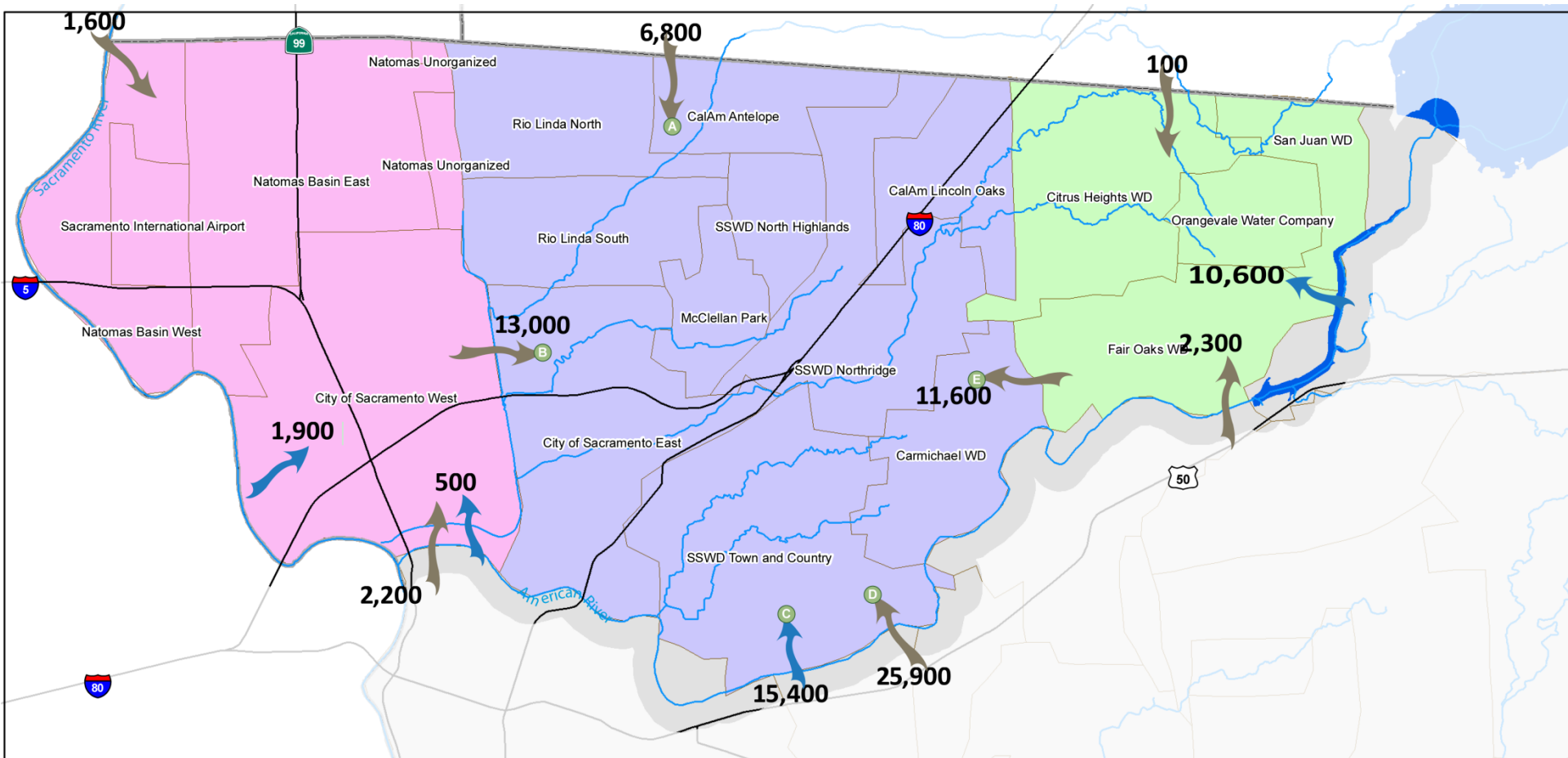
Model Scenario – Benefit of Conjunctive Use

- Develop two model scenarios:
 - Scenario 1- Full Groundwater Supply
 - Sacramento Suburban Water District meets water demands from 1998 – 2008 with 100% groundwater
 - Scenario 2- Conjunctive Use Supply
 - Meet demands from 1998 – 2008 with groundwater & surface water
- Compare the results of the two scenarios to determine benefit



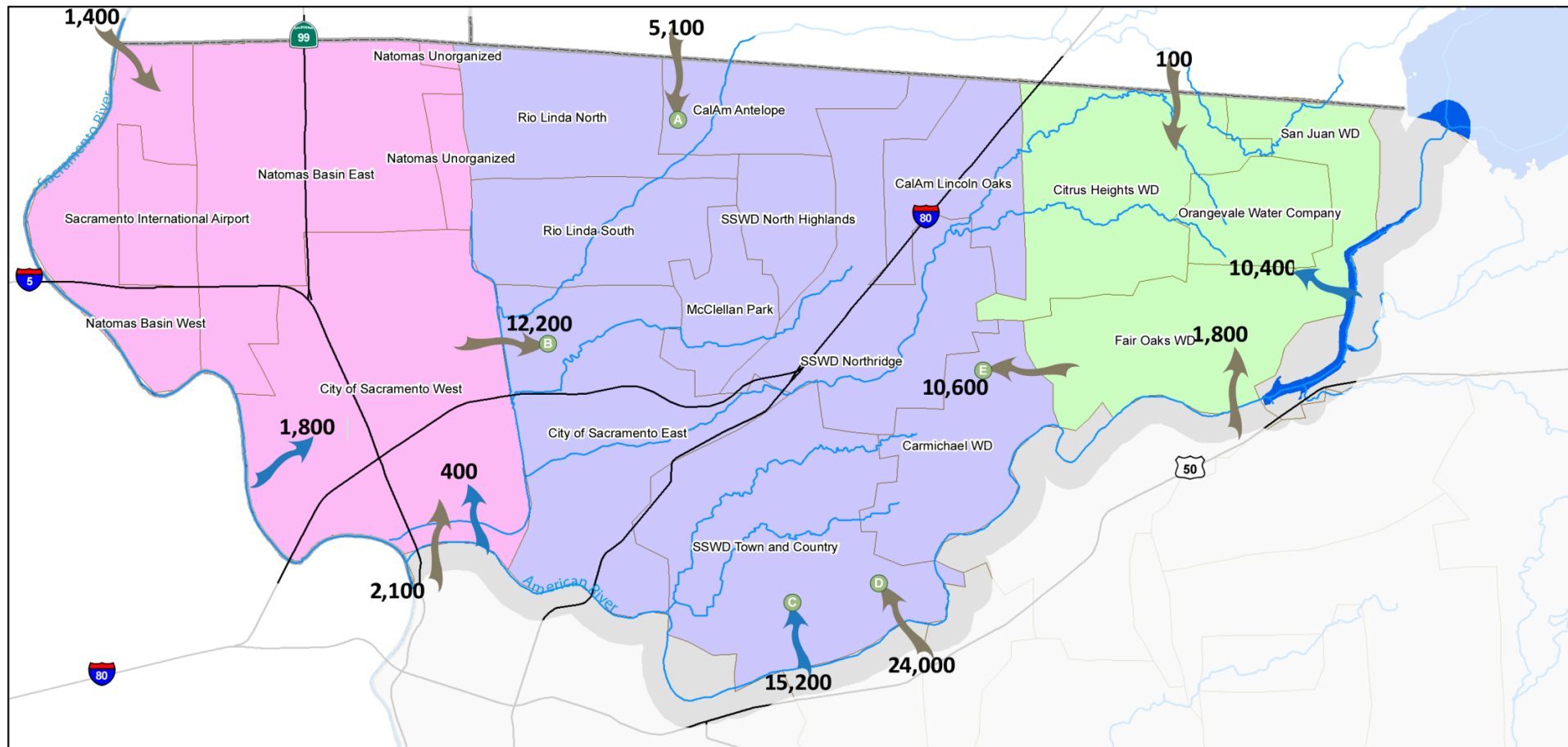
Resulting Surface Water and Groundwater Inflows

Scenario 1: Full GW (Values in acre-feet per year)

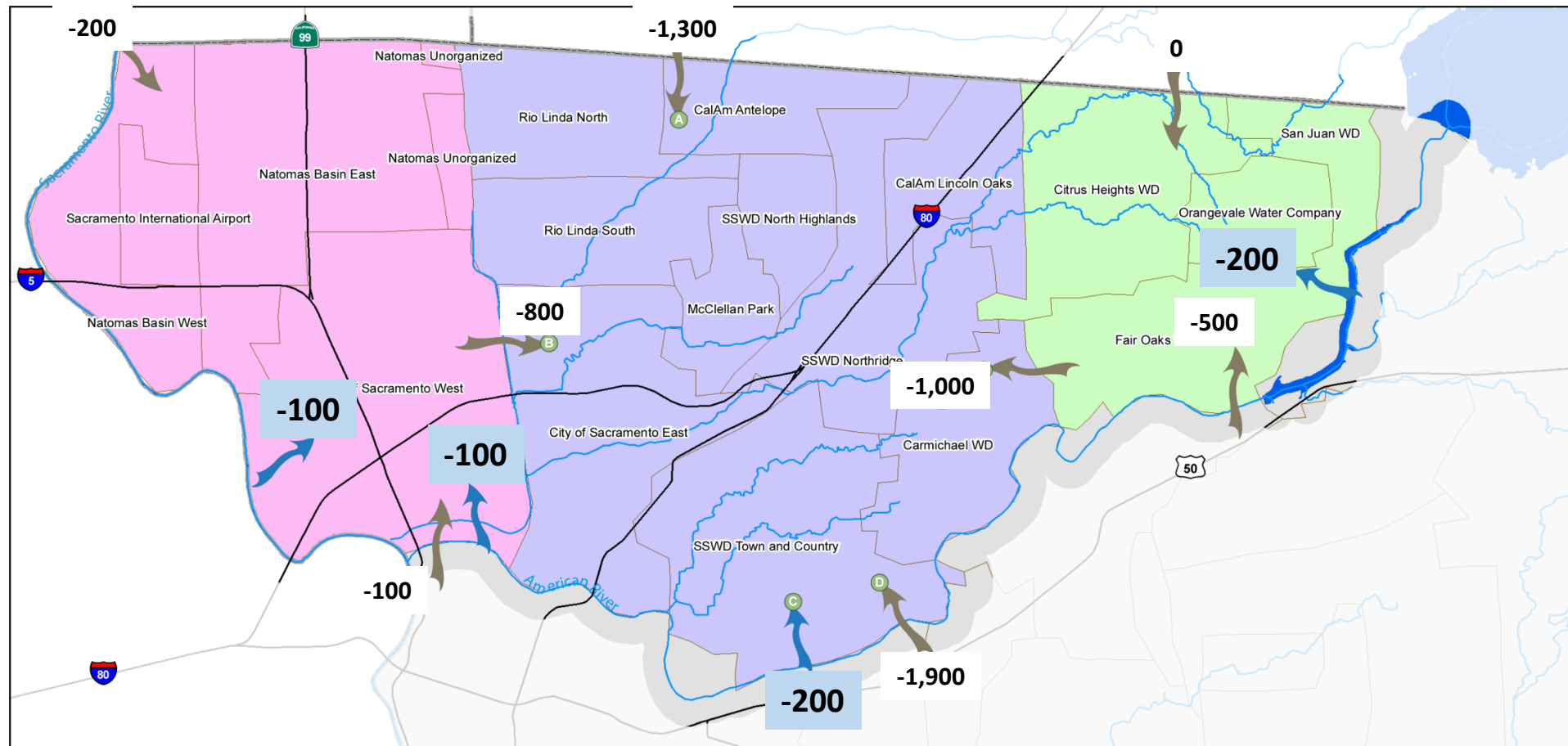


Resulting Surface Water and Groundwater Inflows

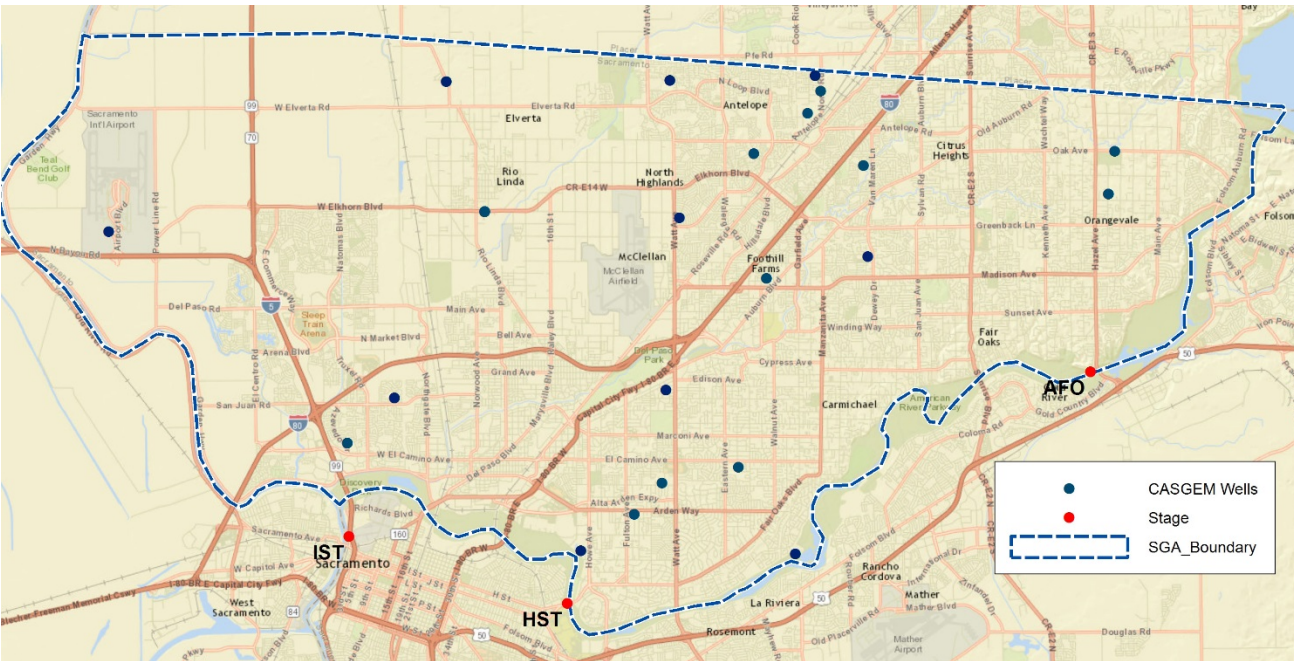
Scenario 2: Conjunctive Use



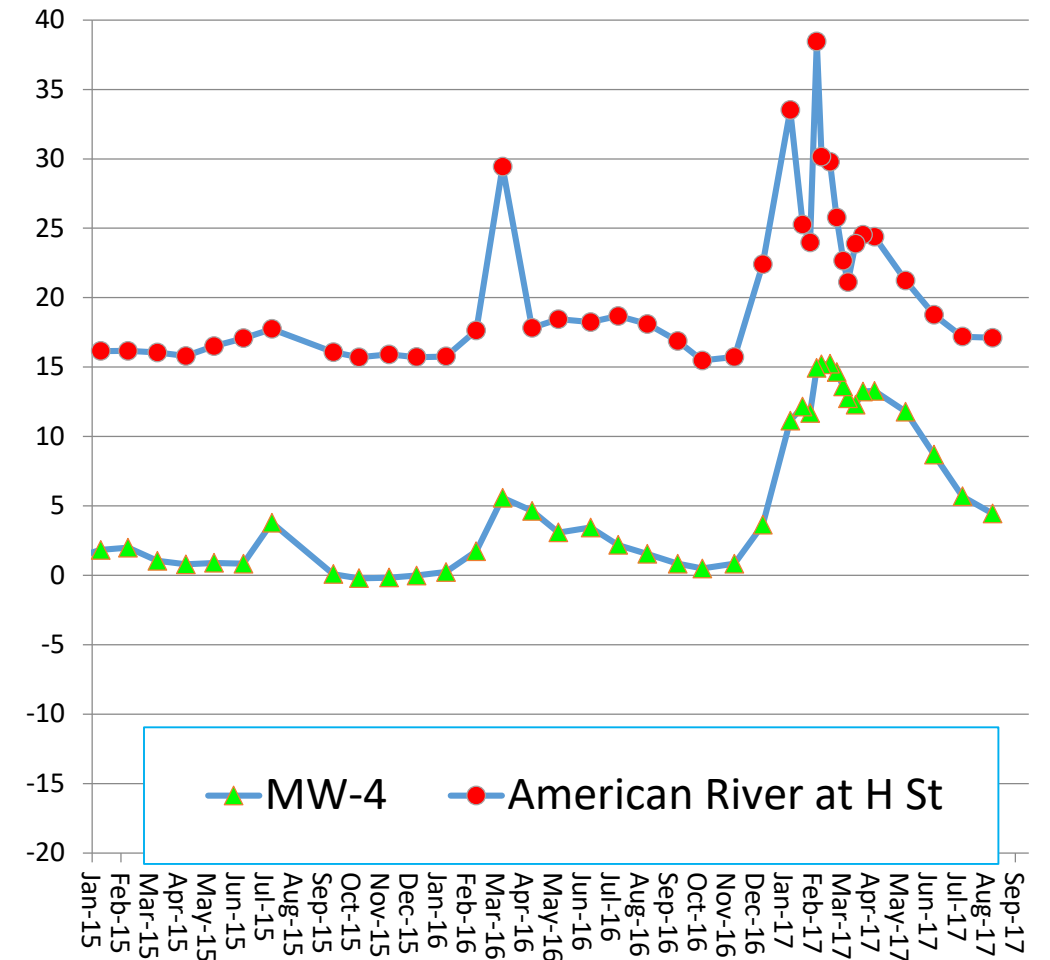
Resulting Surface Water and Groundwater Inflows Scenario 2 minus Scenario 1



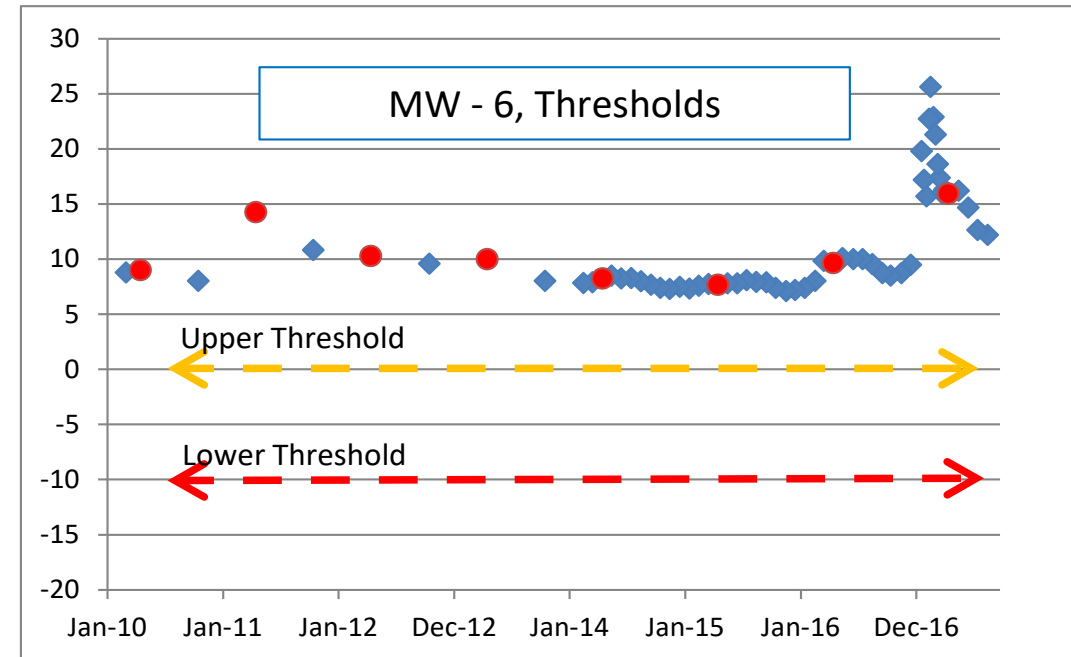
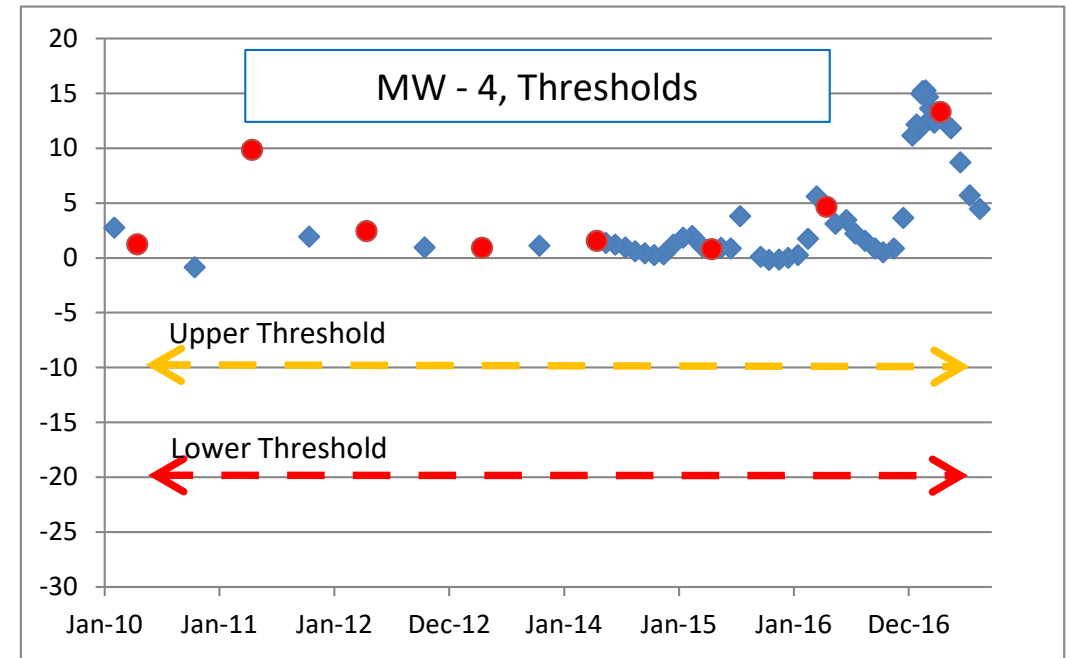
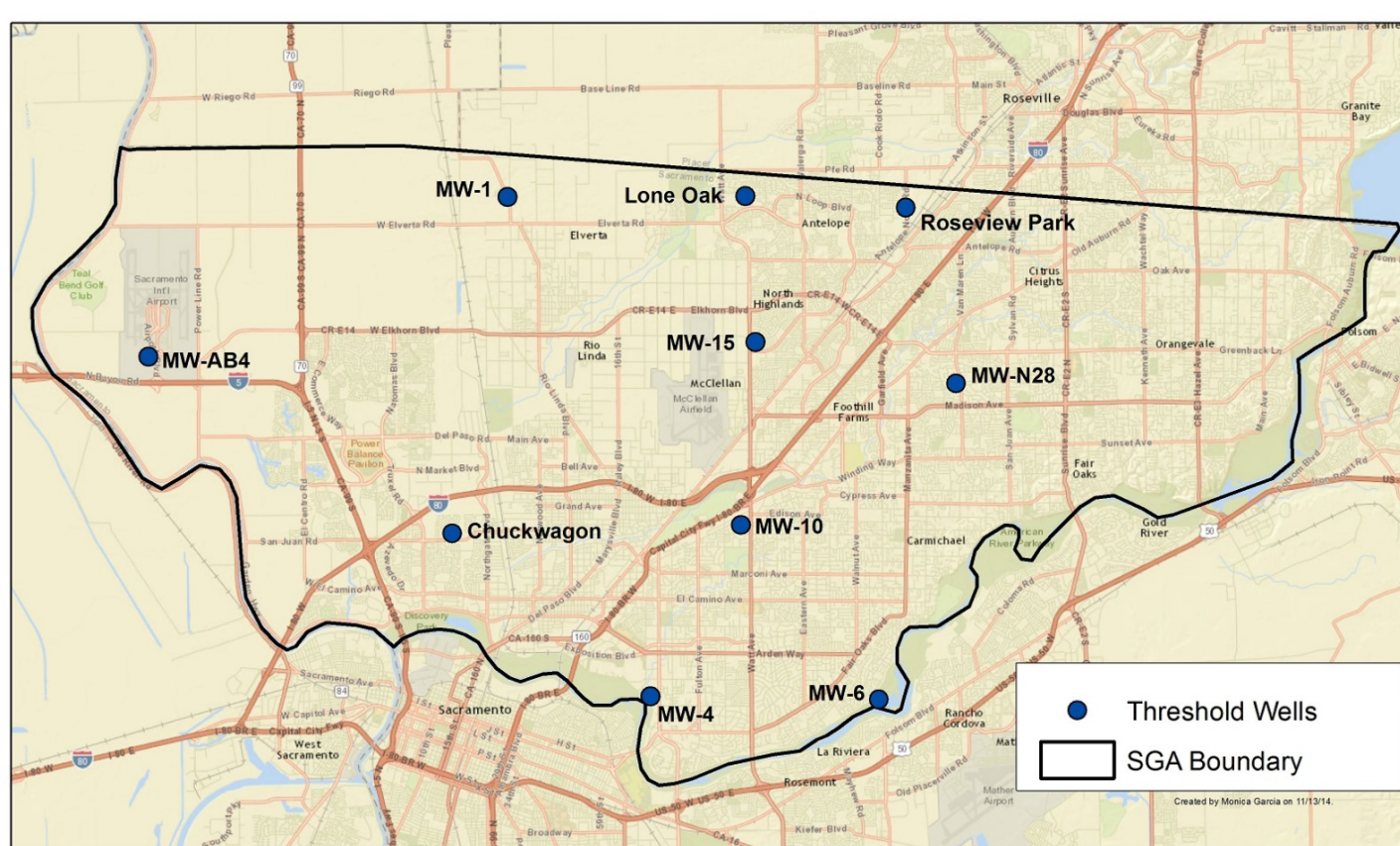
Monitoring Network



- Partial DWR grant funding



Establish Thresholds



GSA Areas

- Proposed West Placer GSA
- Proposed SSWD GSA
- Sacramento Groundwater Authority GSA
- RD 1001 GSA
- Sutter County GSA
- North American Subbasin
- County Boundary

Bear

Weather

ento

American

South Sutter Water District GSA

West Placer GSA

RD 1001 GSA

Sutter County GSA

Sacramento Groundwater Authority GSA

YOLO SUBBASIN

AMERICAN SUBBASIN

Yuba County Airport

Hidden Falls Regional Park

Lincoln Regional Airport

Rocklin

Granite Bay

Folsom

Sacramento

Capital City

Miles

- Intend to prepare a single GSP with the four other GSAs in the North American Subbasin
- This adds reaches of the Bear, Feather, and Sacramento rivers
- Planning for major expansion and update of model
- Identifying potential monitoring data gaps along the rivers
- Expect to reassess thresholds in light of SGMA

Summary

- Model is very helpful in demonstrating surface water/groundwater relationship and evaluating potential current or future depletion
- Monitoring, especially of groundwater elevations and stream stages, is very helpful for addressing surface water/groundwater relationship
- Establishing thresholds and a response process help address issues of significant and unreasonable undesirable results