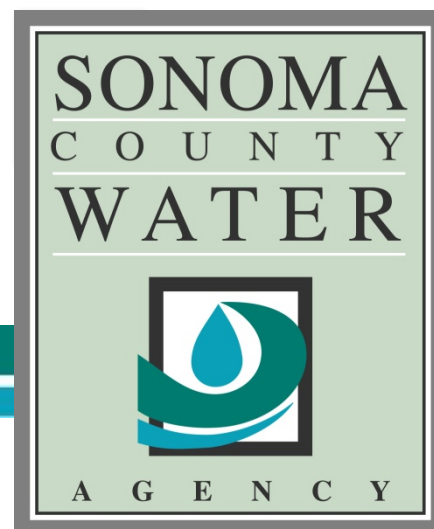


Groundwater Resource Management and SGMA in Sonoma County

Marcus Trotta, PG, CHg
Principal Hydrogeologist
Sonoma County Water Agency

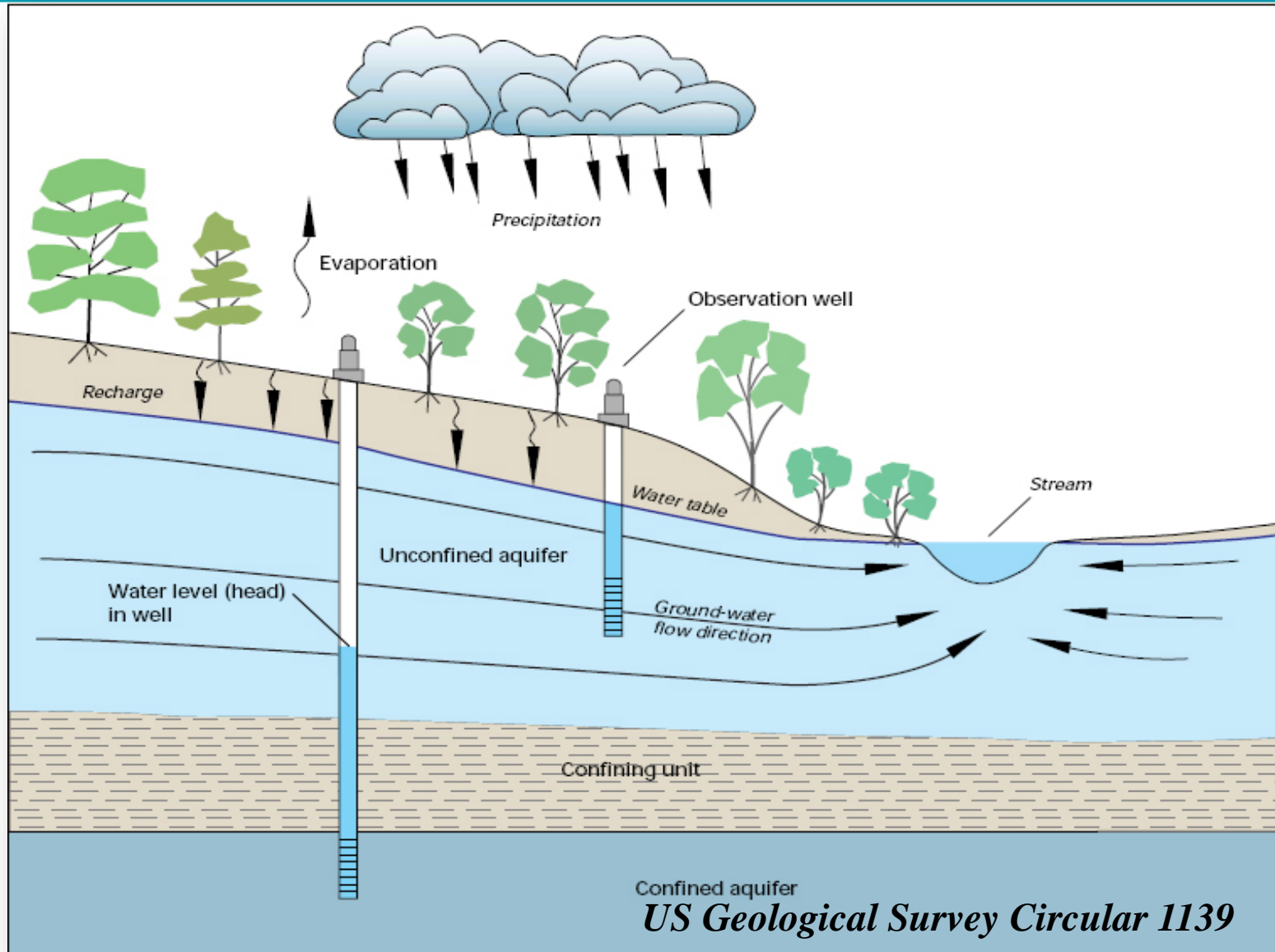
North Bay Watershed Association
February 3, 2017



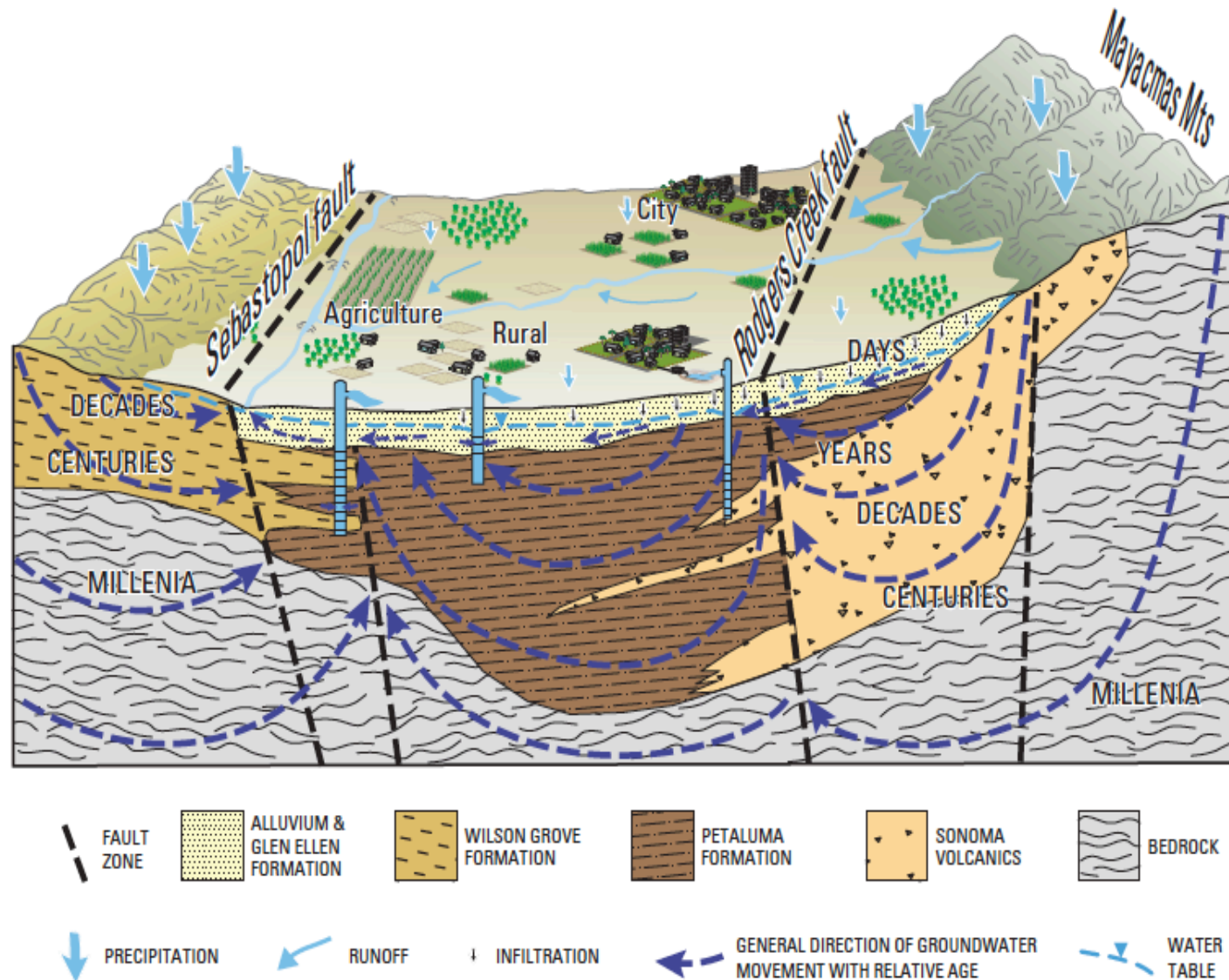
Presentation Overview

- Background on Groundwater
- Technical Studies and Voluntary Plans
 - Monitoring Results/Issues Identified
 - Recommended Voluntary Strategies
- Model Update and Alternatives Analysis
- Sustainable Groundwater Management Act Implementation
- Future Steps

Hydrologic Cycle



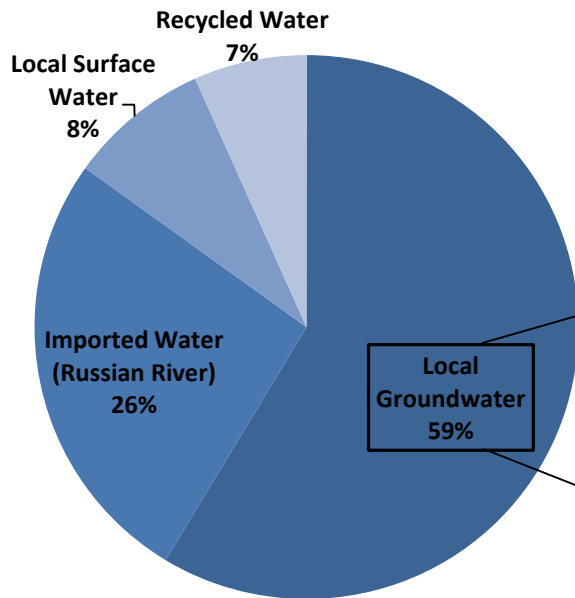
Conceptual Model - Santa Rosa Plain



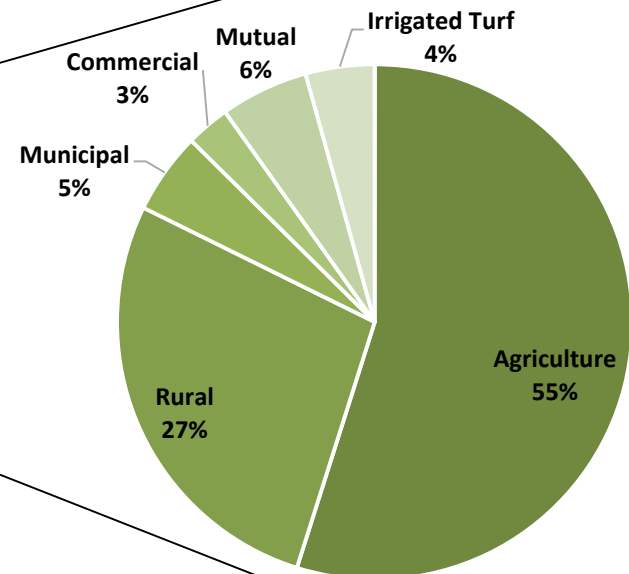
Important Role of Groundwater

Sonoma Valley Water Use

**Estimated Total Water Use:
17,900 Acre-Feet (2012)**



**Estimated Groundwater Use:
10,500 Acre-Feet (2012)**



- Urban demand primarily met through imported Russian River water
- Agricultural and Rural Residential demand primarily met through local groundwater
- At least 2,200 groundwater wells

USGS Basin Studies and Development of Tools



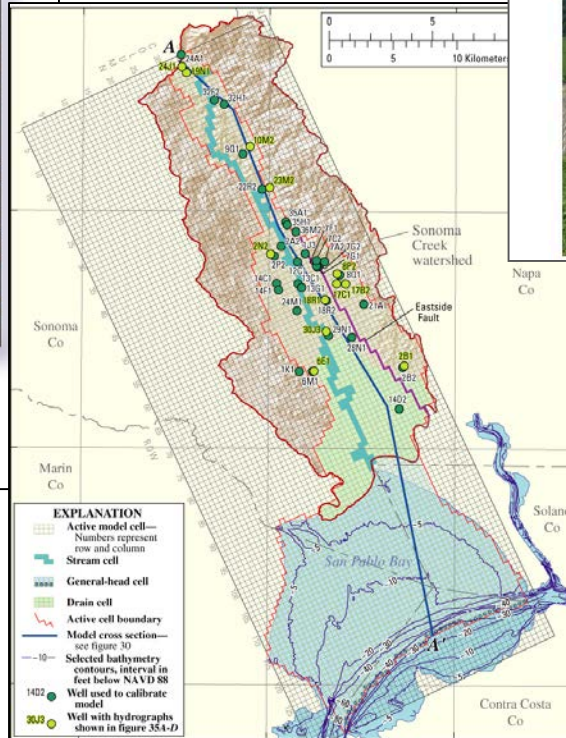
In cooperation with the
SONOMA COUNTY WATER AGENCY

**Geohydrological Characterization, Water-Chemistry,
and Ground-Water Flow Simulation Model of the
Sonoma Valley Area, Sonoma County, California**



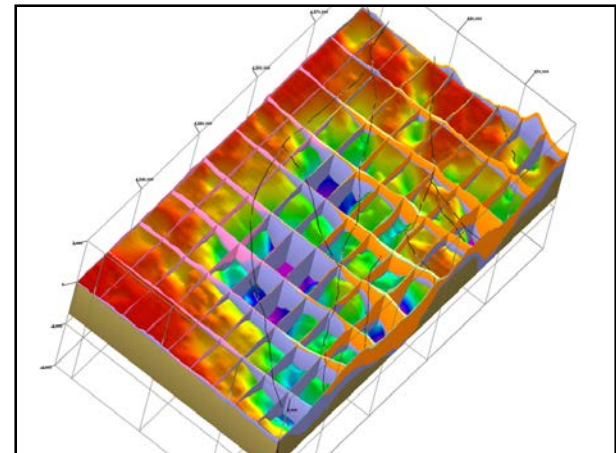
Scientific Investigations Report 2006-5092

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



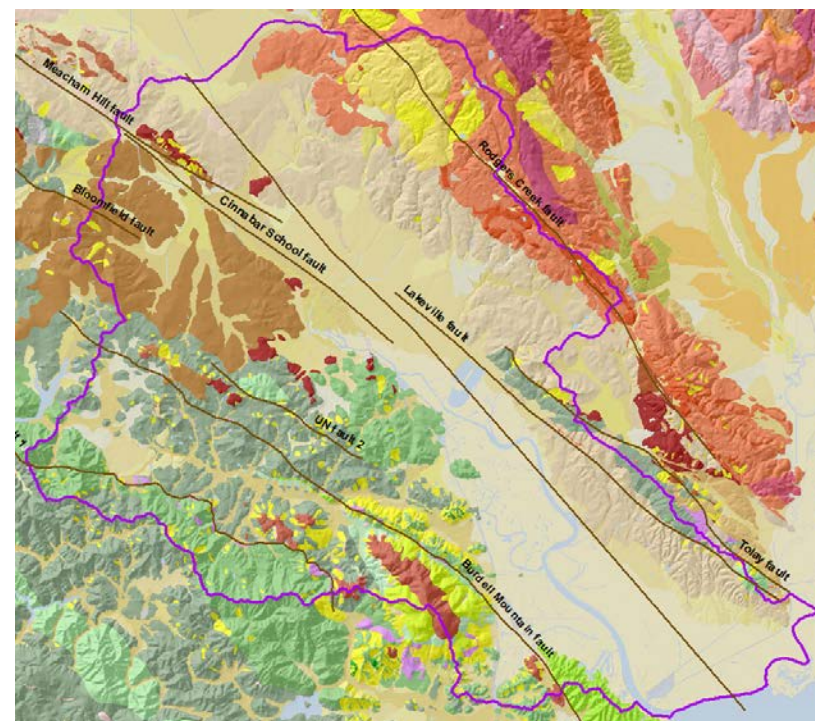
Prepared in cooperation with the Sonoma County Water Agency

**Hydrologic and Geochemical Characterization
of the Santa Rosa Plain Watershed,
Sonoma County, California**



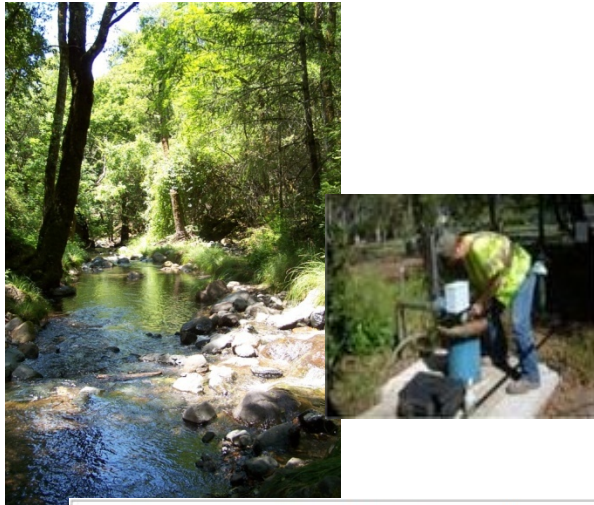
Petaluma Valley USGS Groundwater Study

- 3-Year Study scheduled for completion Fall 2017
 - Compiling & evaluating existing data
 - Collecting new data (geologic data, groundwater levels, groundwater quality and streamflows)
 - Developing groundwater flow model
- \$1.2M Study funded by Sonoma County Water Agency, City of Petaluma and USGS



Existing Voluntary Groundwater Management Program Activities – Sonoma Valley

Groundwater-Level and Streamflow Monitoring



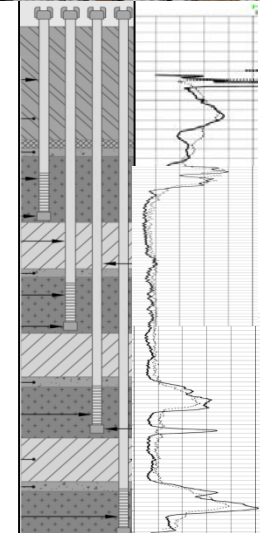
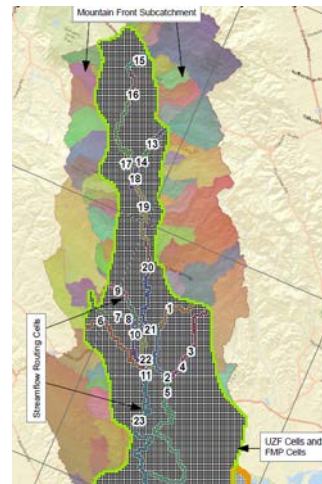
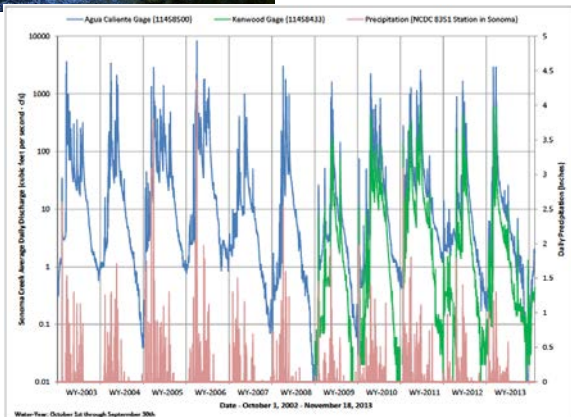
Involvement of Community Stakeholders



Monitoring Well Construction & Data Collection

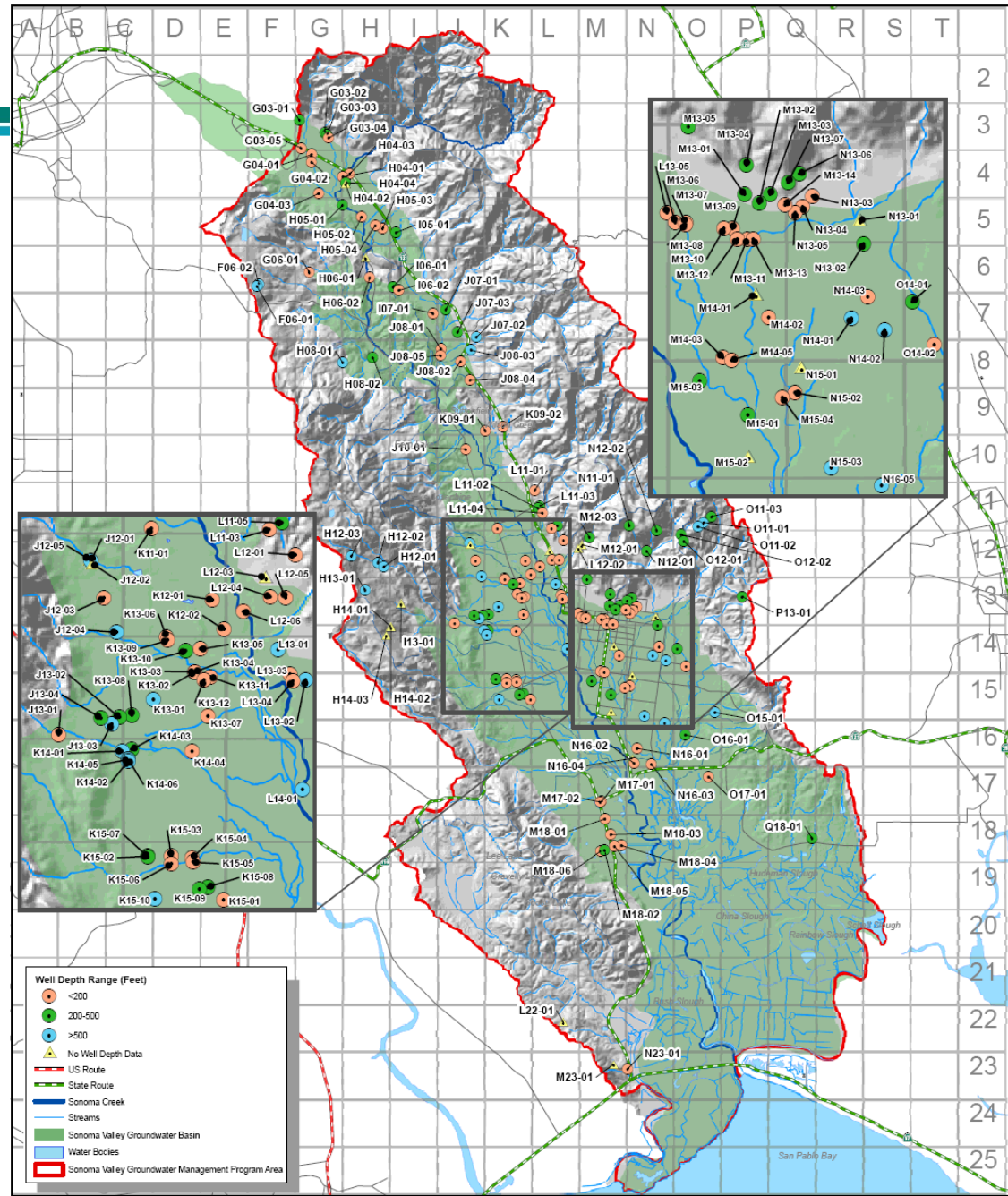


Groundwater Model Development



Voluntary Groundwater-Level Monitoring

- **90** - New Wells since 2007
- **152** - Wells with Synchronized Monitoring
- **Groundwater Levels Only**
- **Track and Assess Seasonal and Long-term Trends**



Groundwater Important Provider of Flow to Streams

Discharge Segments

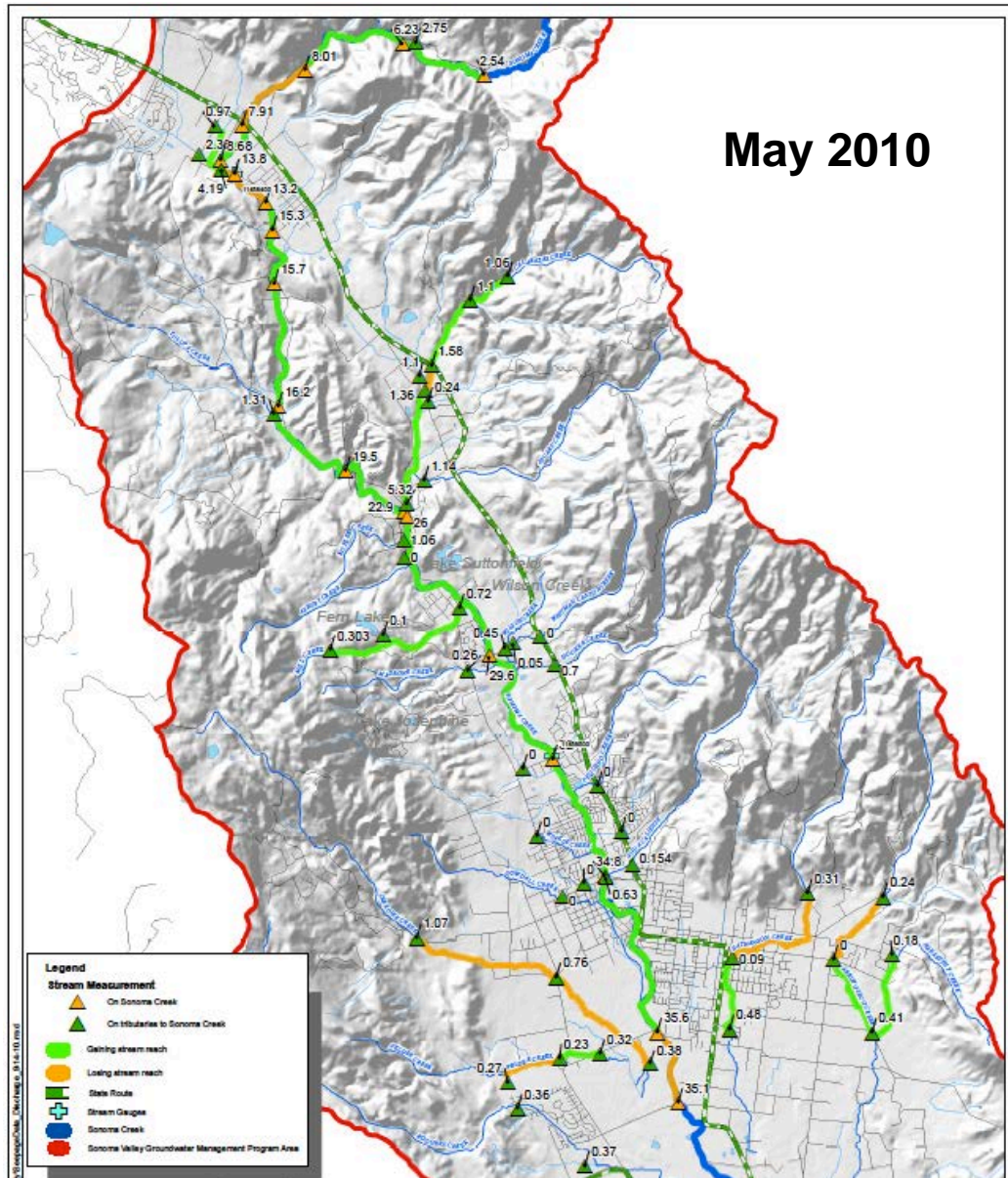
(Groundwater flows into Stream)

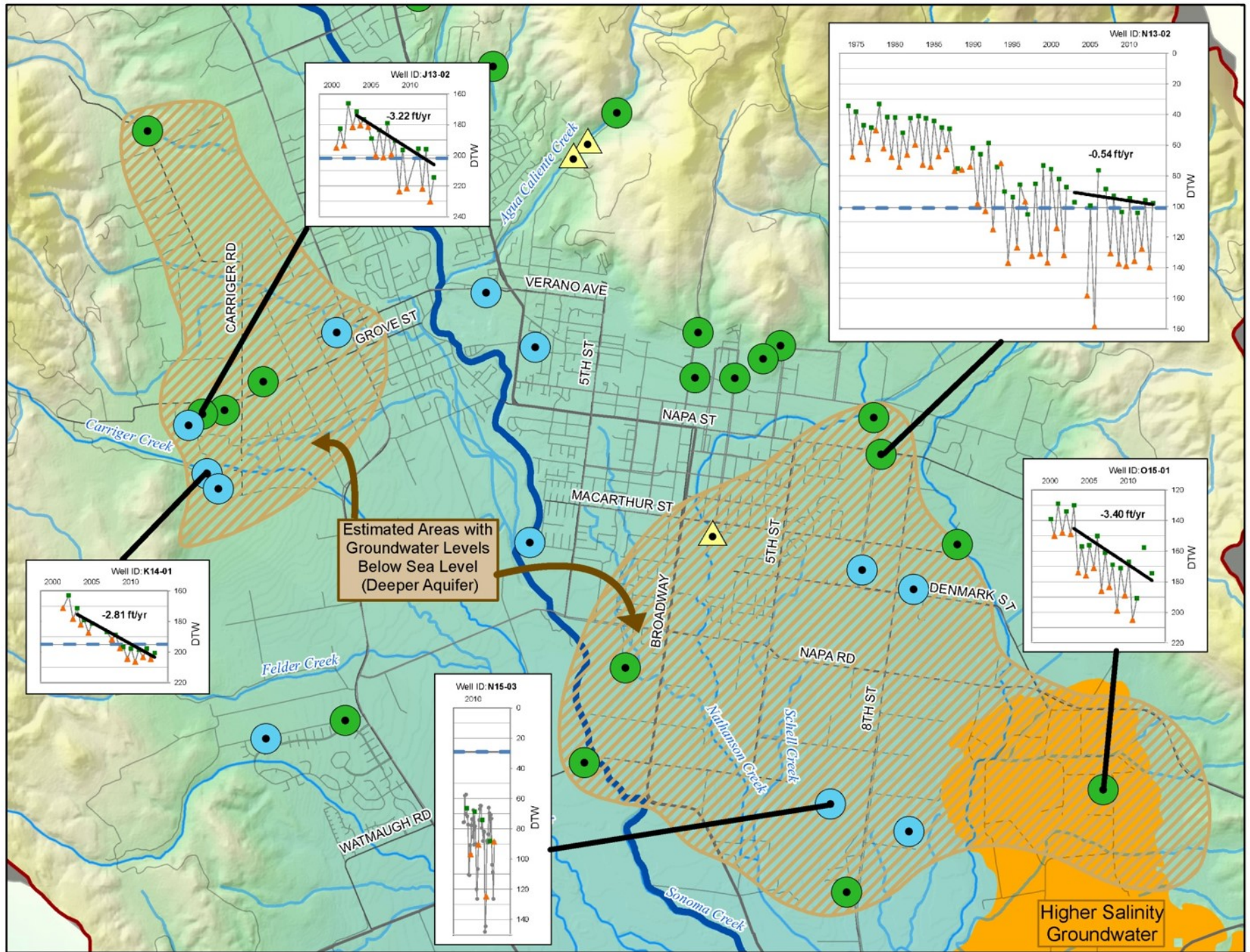
- Most of Sonoma Creek
- Most of Calabazas
- Lower reaches of Fryer and Nathanson

Recharge Segments

(Stream recharges Groundwater)

- Sonoma Creek near Kenwood
- Carriger
- Upper reaches of Fryer and Nathanson
- Portion of Felder Creek

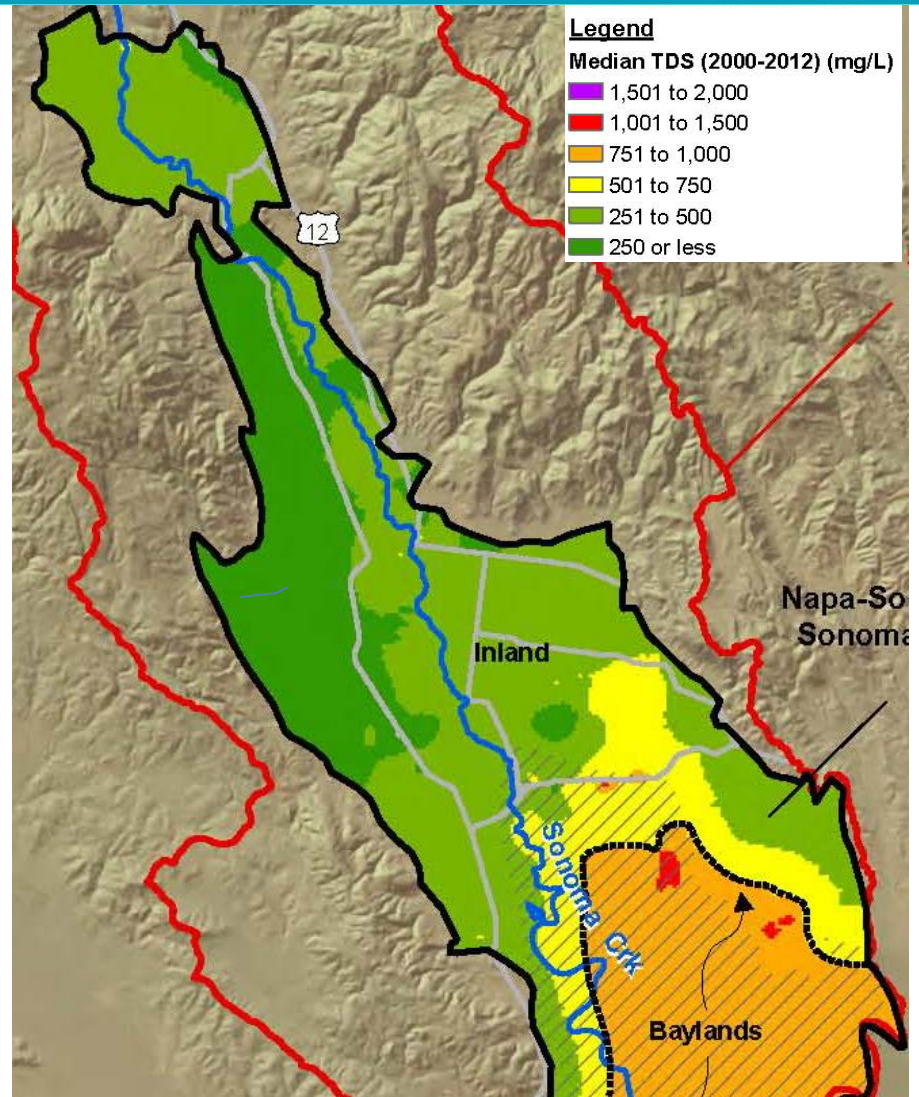




Salinity In Groundwater is a Concern

Salinity Sources:

- **Historical Brackish Water Beneath Tidal Marshlands**
- **Thermal Water**
- **Deep Groundwater from Older Formations**



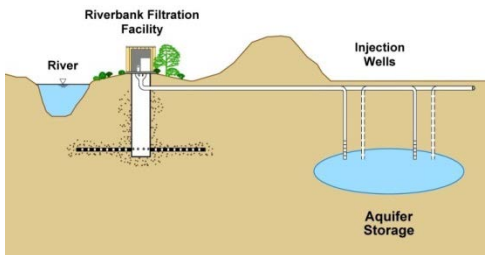
Basin Advisory Panel Recommended Management Strategies



CONSERVATION
of Urban, Non-
Urban, &
Agriculture



WATER REUSE
use to offset
groundwater
pumping

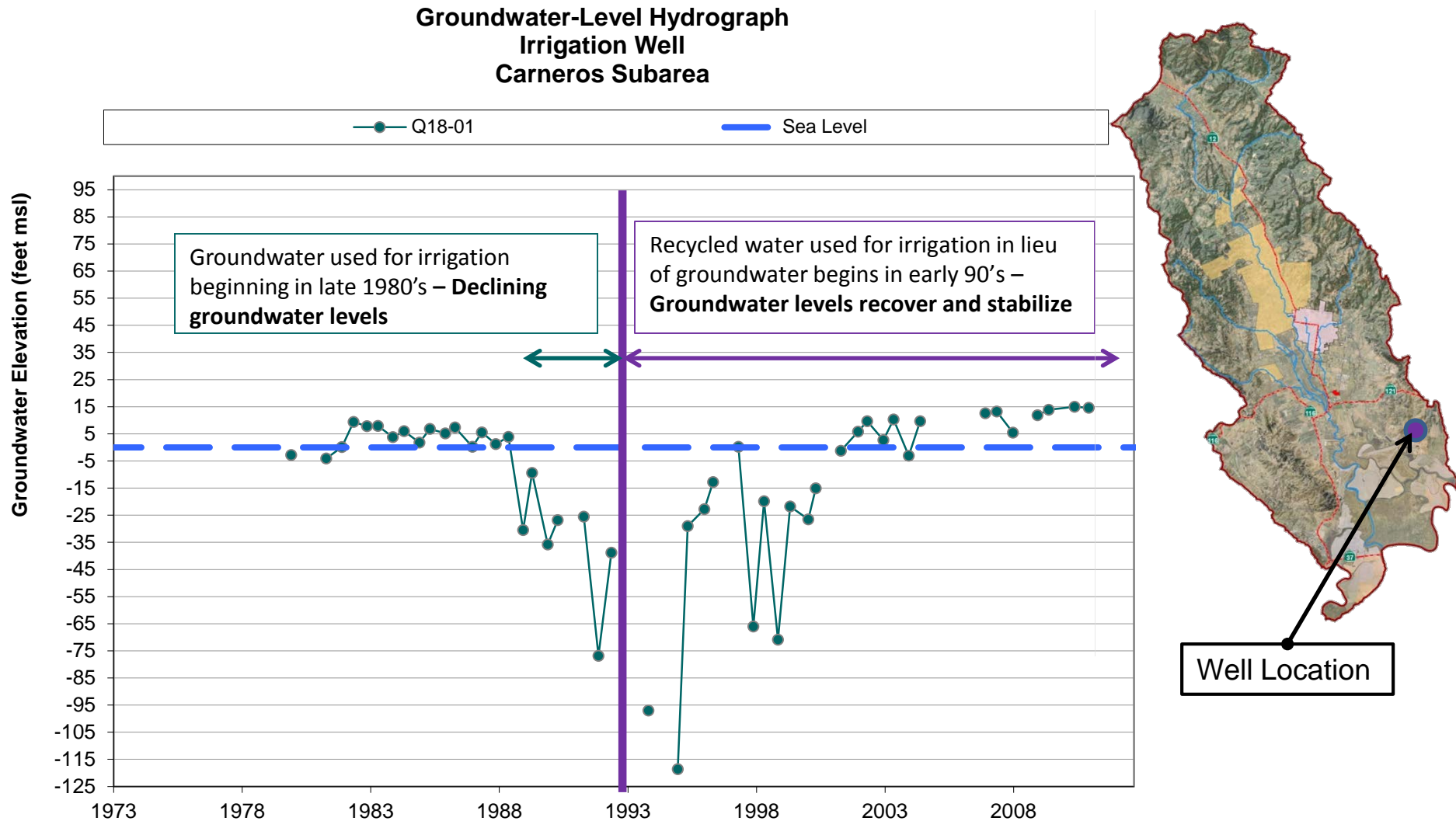


GROUNDWATER BANKING
Russian River
winter-time water
to recharge
groundwater basin

STORMWATER
to recharge
groundwater



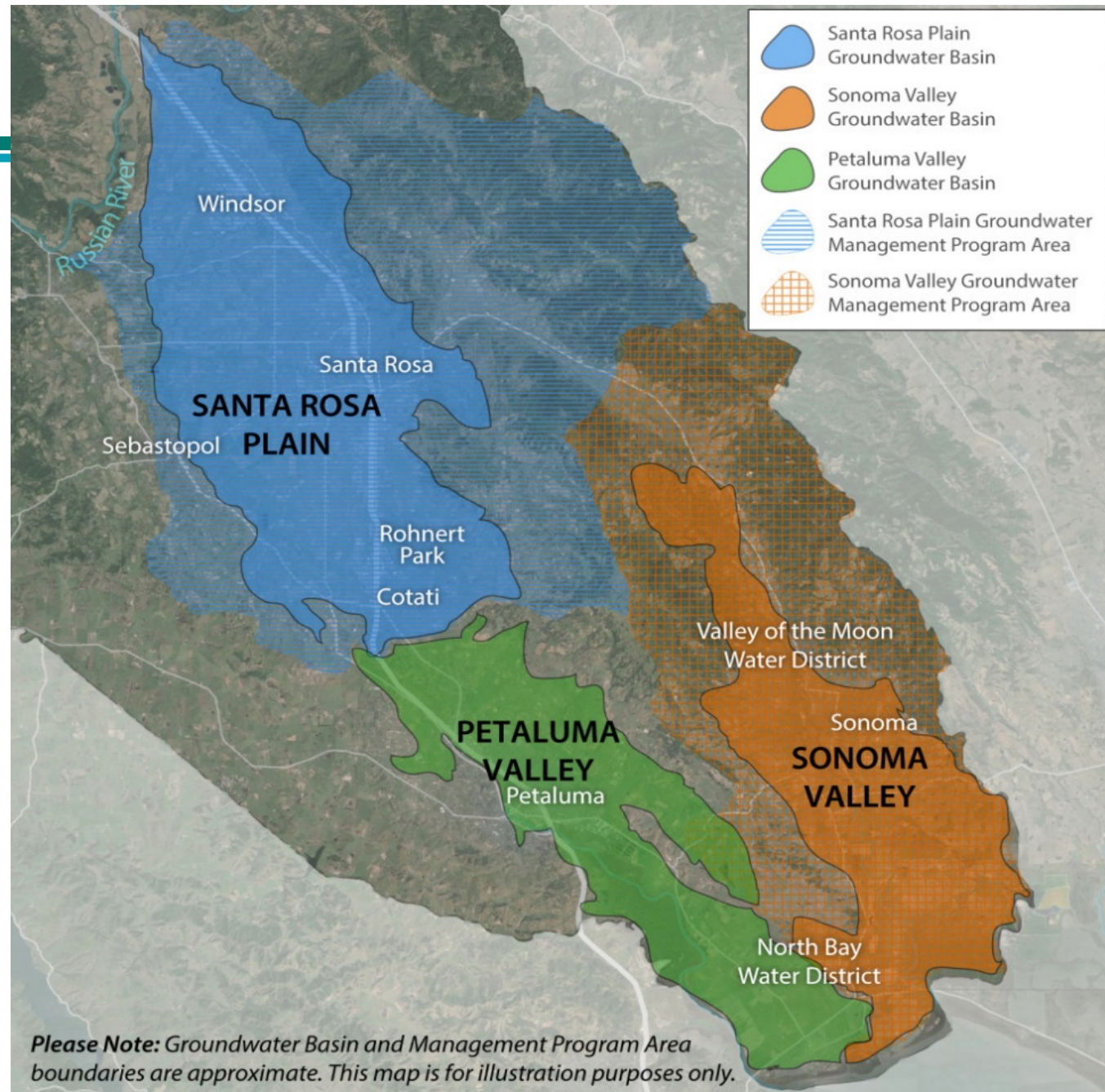
Irrigation with Recycled Water to Offset Groundwater Pumping



SGMA Brief Summary

Three medium priority basins in Sonoma County must comply with SGMA

- Sonoma Valley
- Petaluma Valley
- Santa Rosa Plain



SGMA Steps to Groundwater Sustainability

Step one

Form
Groundwater
Sustainability
Agency

June 30, 2017

Step two

Develop
Groundwater
Sustainability
Plan

January 31, 2022

Step three

Achieve
Sustainability
20 years after
adoption of
plan*

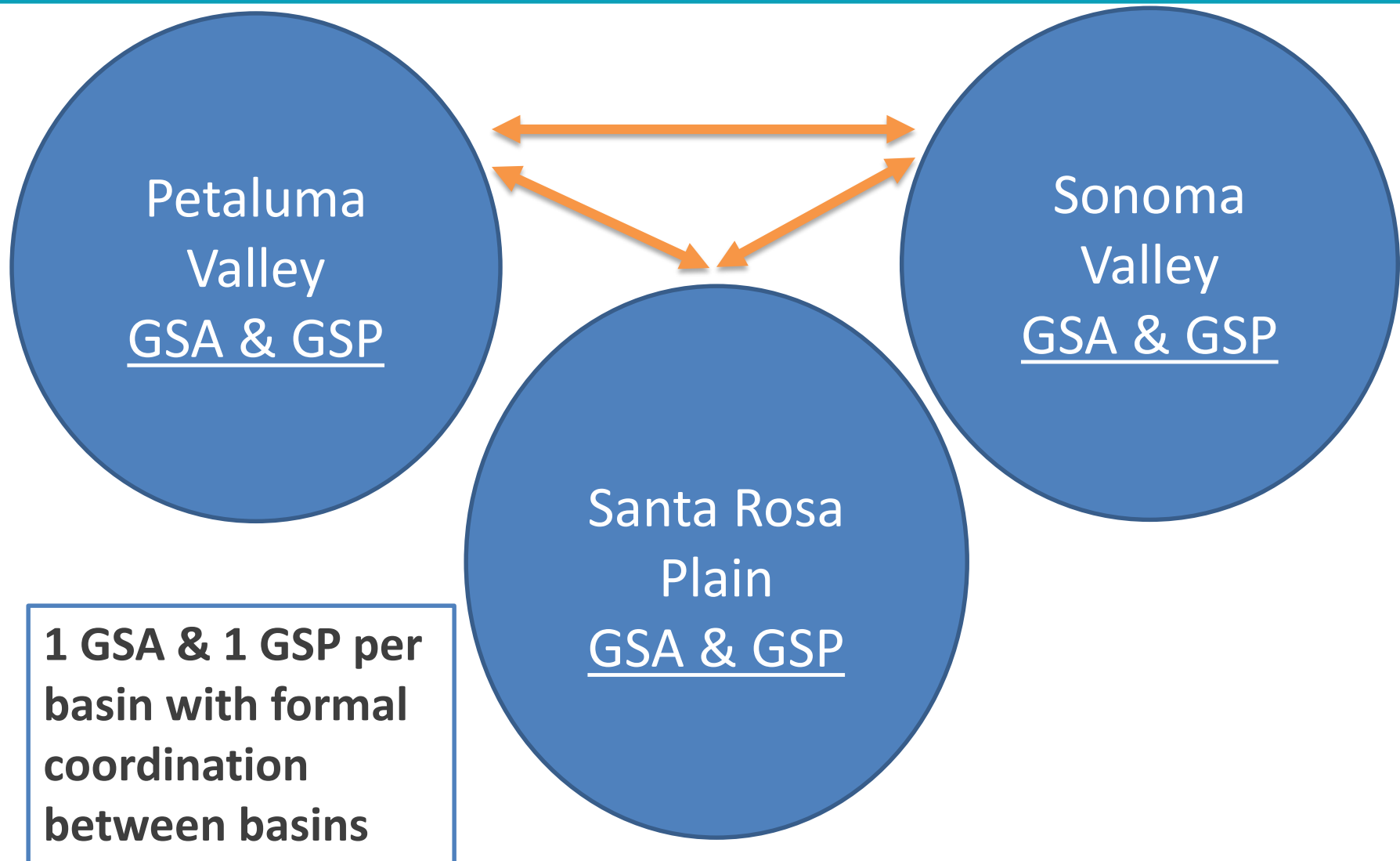
* DWR may grant up to two, five-year extensions on implementation upon showing of good cause and progress

Local Implementation: GSA-Eligible Agencies

SANTA ROSA PLAIN BASIN	PETALUMA VALLEY BASIN	SONOMA VALLEY BASIN
City of Cotati	City of Petaluma	City of Sonoma
City of Rohnert Park	North Bay Water District	North Bay Water District
City of Santa Rosa	Sonoma County	Valley of the Moon Water District
City of Sebastopol	Sonoma County Water Agency	Sonoma County
Town of Windsor	Sonoma Resource Conservation District	Sonoma County Water Agency
Sonoma County		Sonoma Resource Conservation District
Sonoma County Water Agency		
Sonoma Resource Conservation District		

Groundwater Sustainability Agency (GSA)

Framework Structure



Management Authorities under SGMA

Groundwater Sustainability Agencies have *discretionary* authority to:

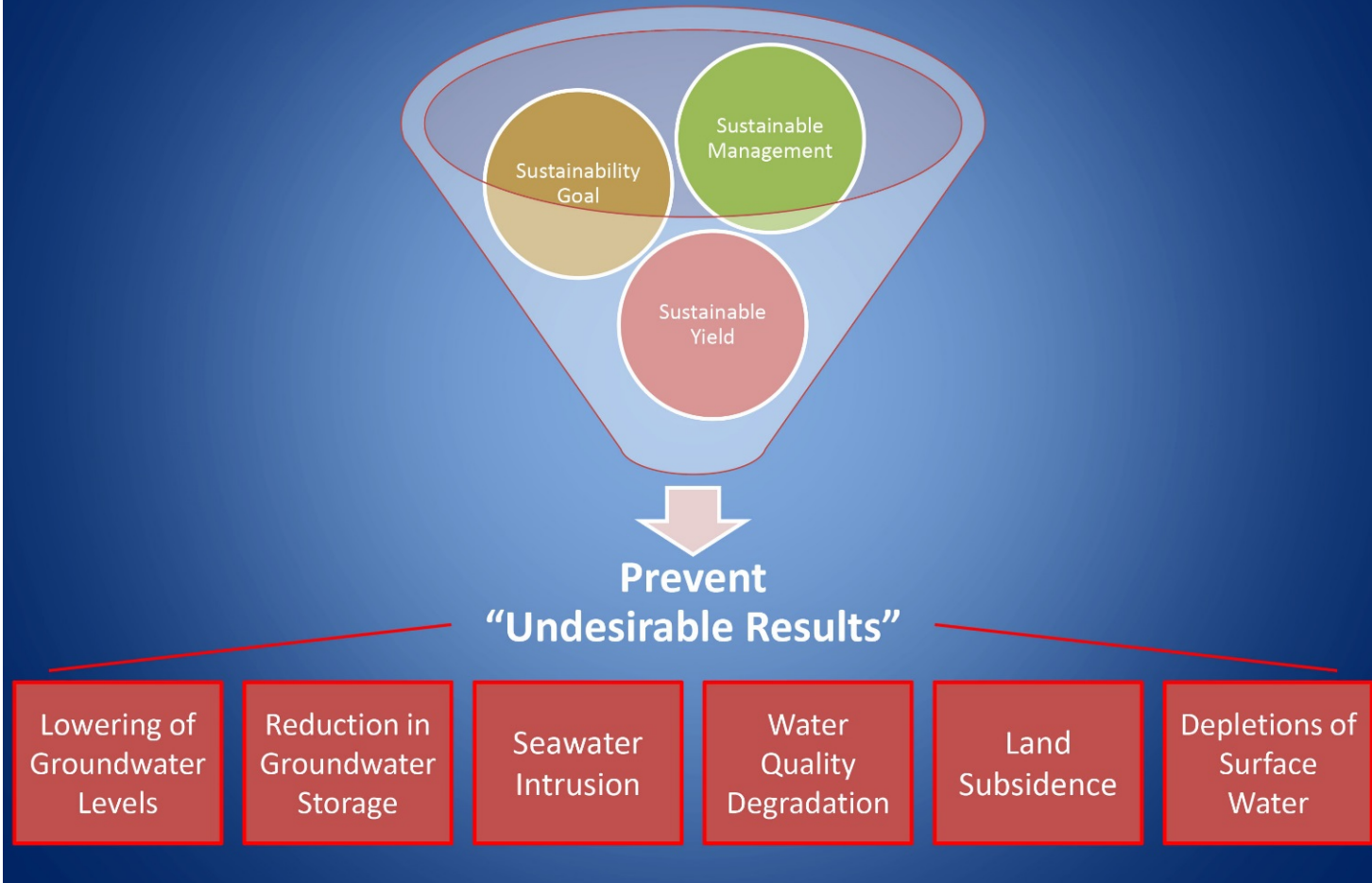
- Conduct studies
- Register & monitor wells
- Set well spacing requirements
- Require extraction reporting
- Regulate extractions
- Implement capital projects
- Assess fees to cover costs

Required to Develop Groundwater Sustainability Plan by 2022



GSP Must Describe Achievement of Sustainability in 20 Years

Sustainability:



Future Steps

- Form Groundwater Sustainability Agencies by June 2017
- Continue pursuing monitoring, studies and projects that help achieve sustainable groundwater conditions
- Integrate technical information into Groundwater Sustainability Plan due by January 2022
- Implement new Plan

Questions?



<http://www.scwa.ca.gov/groundwater>