

# Basin Conditions and the Future of Cooperative Groundwater Management



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# Ventura County Groundwater Basins Managed Under SGMA

Carpinteria

Cuyama Valley

Ojai Valley

Upper Ventura River Valley

Santa Clara River Valley East

Fillmore

Piru

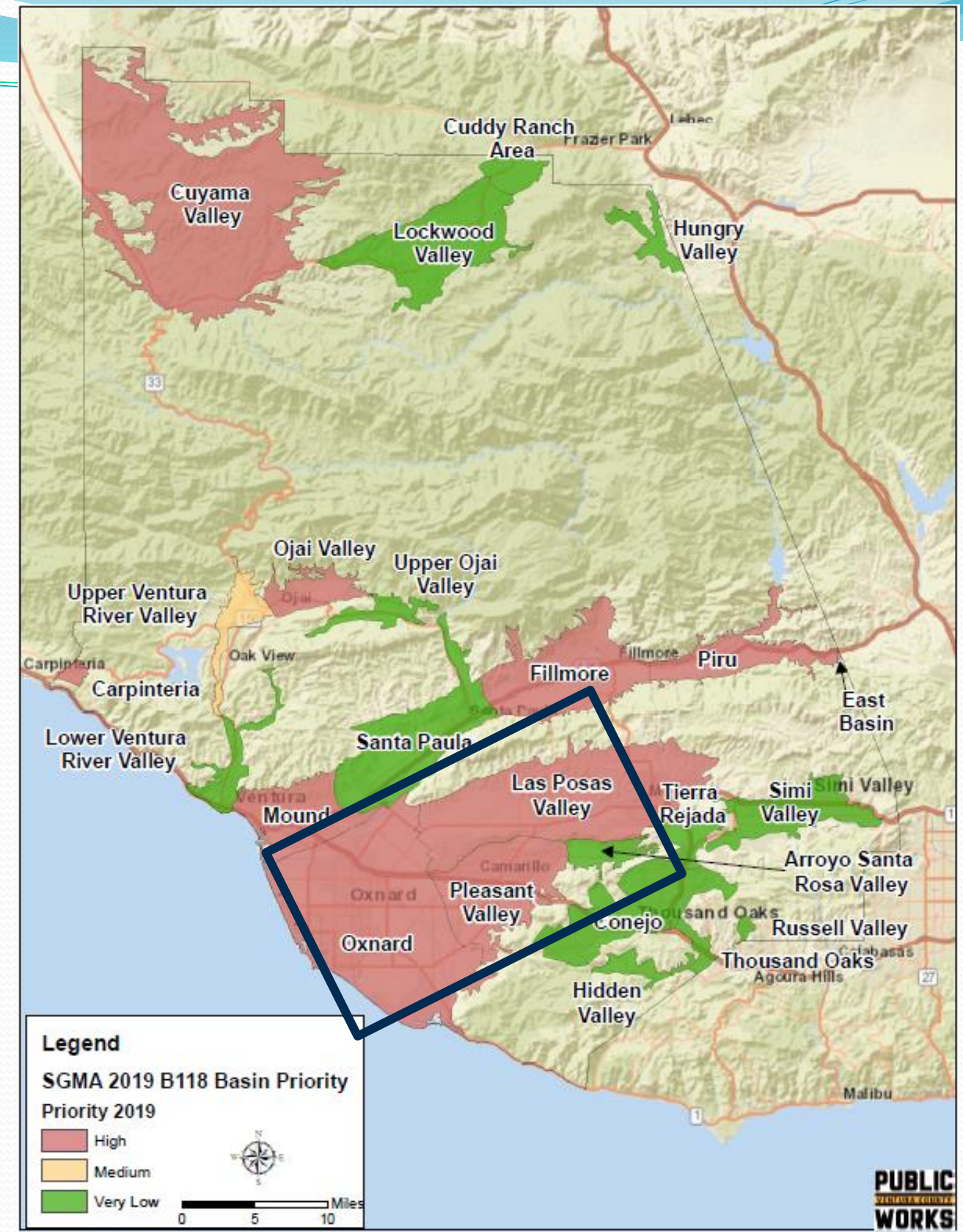
Mound

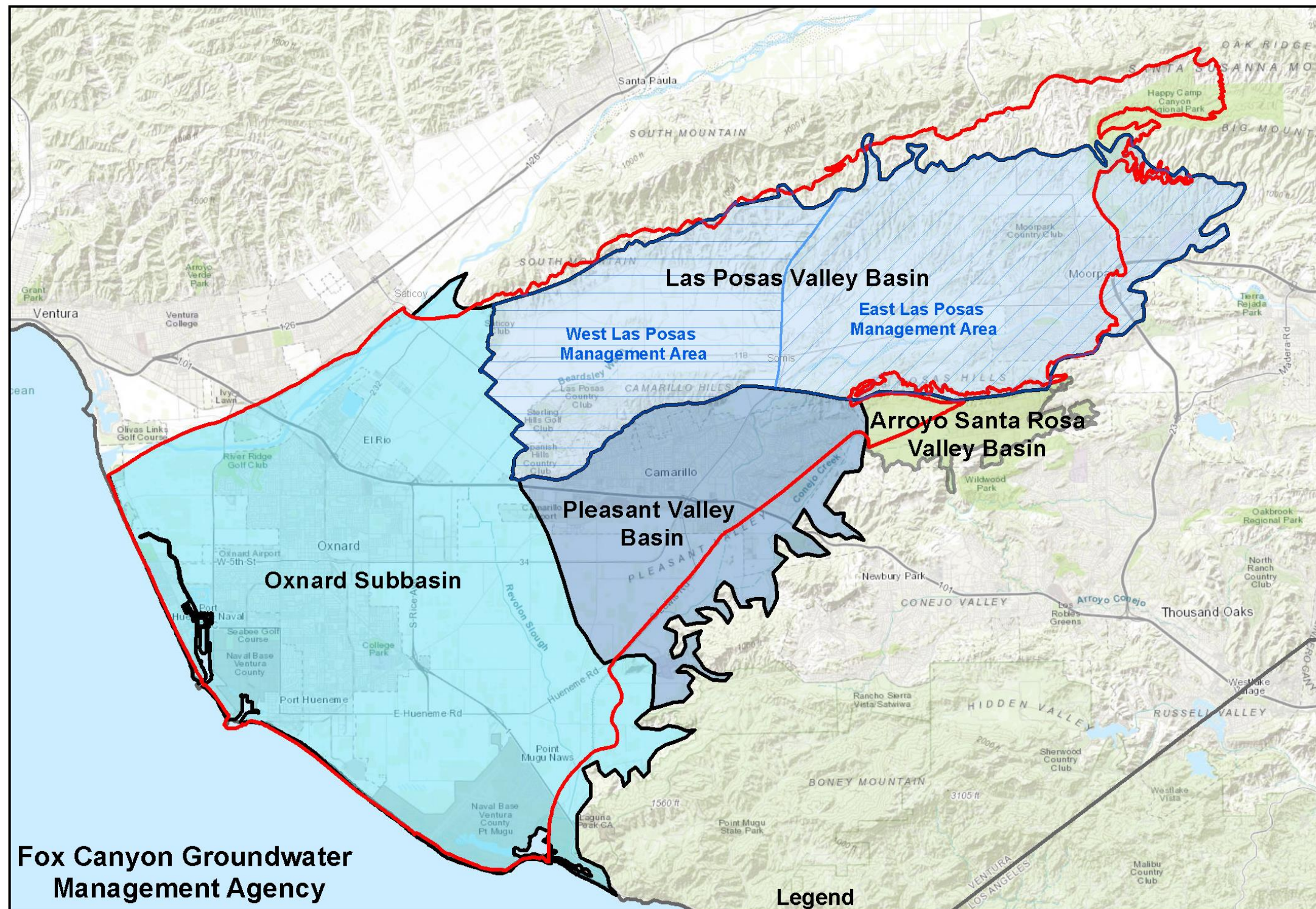
Arroyo Santa Rosa Valley

Las Posas Valley

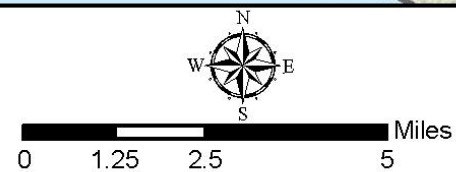
Pleasant Valley

Oxnard





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# Fox Canyon Groundwater Management Agency

- State Water Board investigation into seawater intrusion beneath the Oxnard Plain in Ventura County
- To address the seawater intrusion problem, Ventura County and the United Water Conservation District sought and obtained the Legislature's approval to establish the Agency
- FCGMA was created in 1982 to conserve groundwater resources for agricultural, municipal, and industrial uses, for the common benefit of all water users
- The board of directors has the responsibility for establishing and revising policy through the adoption of laws, ordinances and resolutions that support the FCGMA's mission statement, goals and objectives

# **Groundwater Sustainability Agency SGMA Requirements**

## **Annual Report**

Required every year

## **Periodic Evaluation**

Required a minimum of every five years

- Assessment of GSP implementation for evaluation cycle
- Includes:
  - Status of groundwater conditions
  - Progress meeting interim milestones and measurable objectives
  - Progress of projects and management actions and the quantified cumulative benefits
    - Any unforeseen challenges encountered with the development or implementation of certain projects and management actions

# Las Posas Watermaster

- On July 10, 2023, the Santa Barbara Superior Court issued a statement of decision adopting a judgment in Las Posas Valley Water Rights Coalition, et al. v. Fox Canyon Groundwater Management Agency, Santa Barbara Sup. Ct. Case No. VENC100509700 (LPV Judgment). The LPV Judgment adjudicates all groundwater rights in the Las Posas Valley Groundwater Basin (Basin) and provides for the Basin's sustainable management pursuant to the Sustainable Groundwater Management Act (SGMA).

# Sustainable Groundwater Management Act (SGMA)

- Formed local Groundwater Sustainability Agencies (GSAs)
- GSA's must develop Groundwater Sustainability Plans (GSP) for high and medium priority basins
- Plans outline how the basin will achieve sustainability by 2040, due in 2020
- 6 sustainability indicators



**Groundwater Elevation**



**Groundwater in Storage**



**Seawater Intrusion**



**Groundwater Quality**

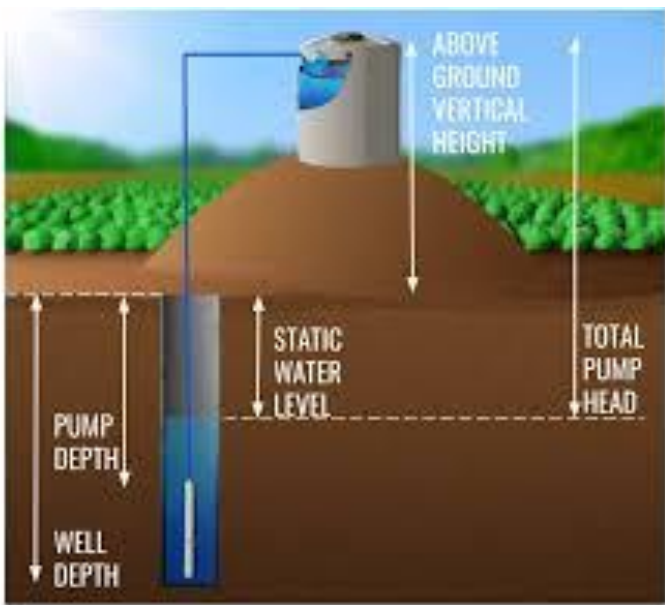
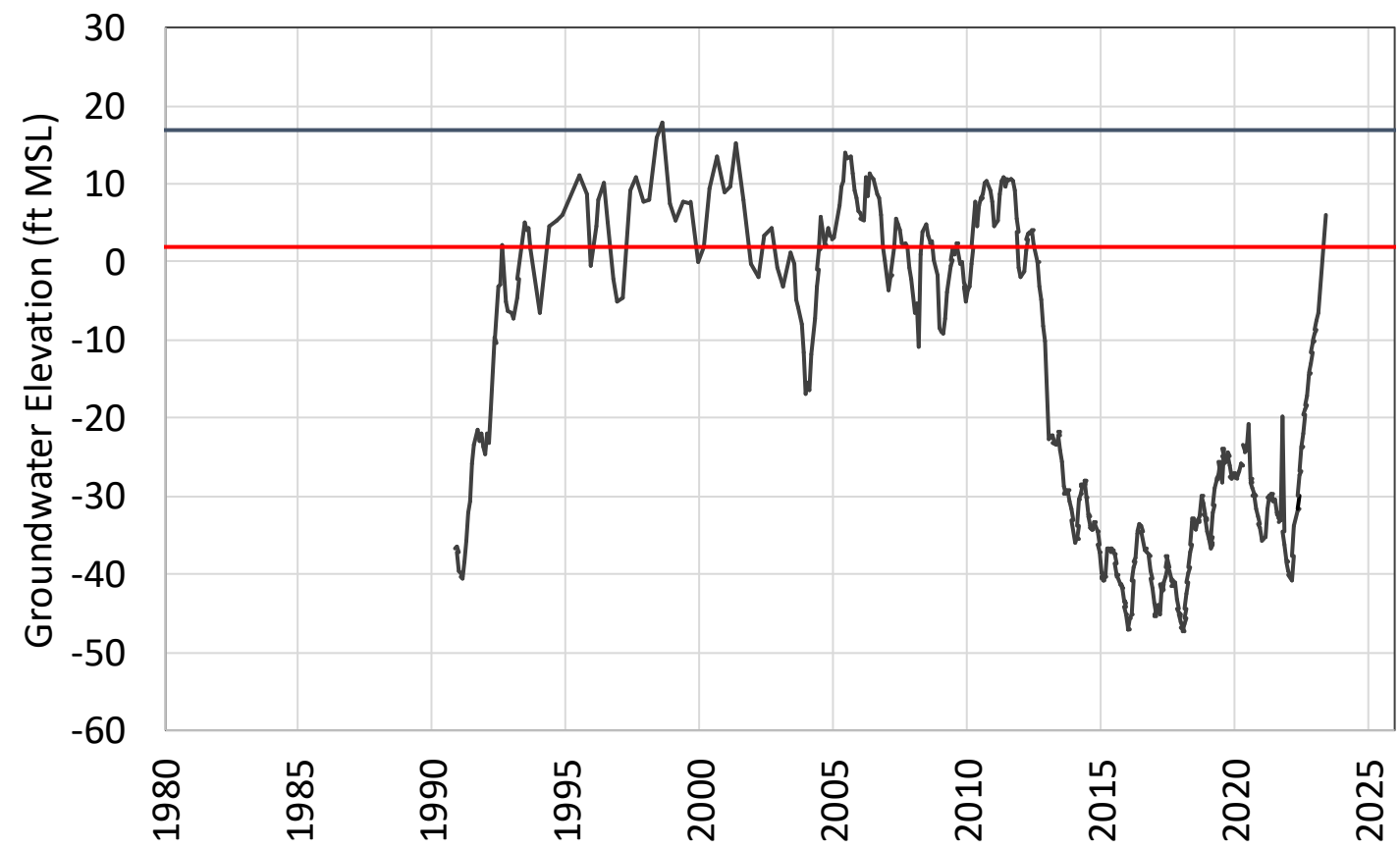


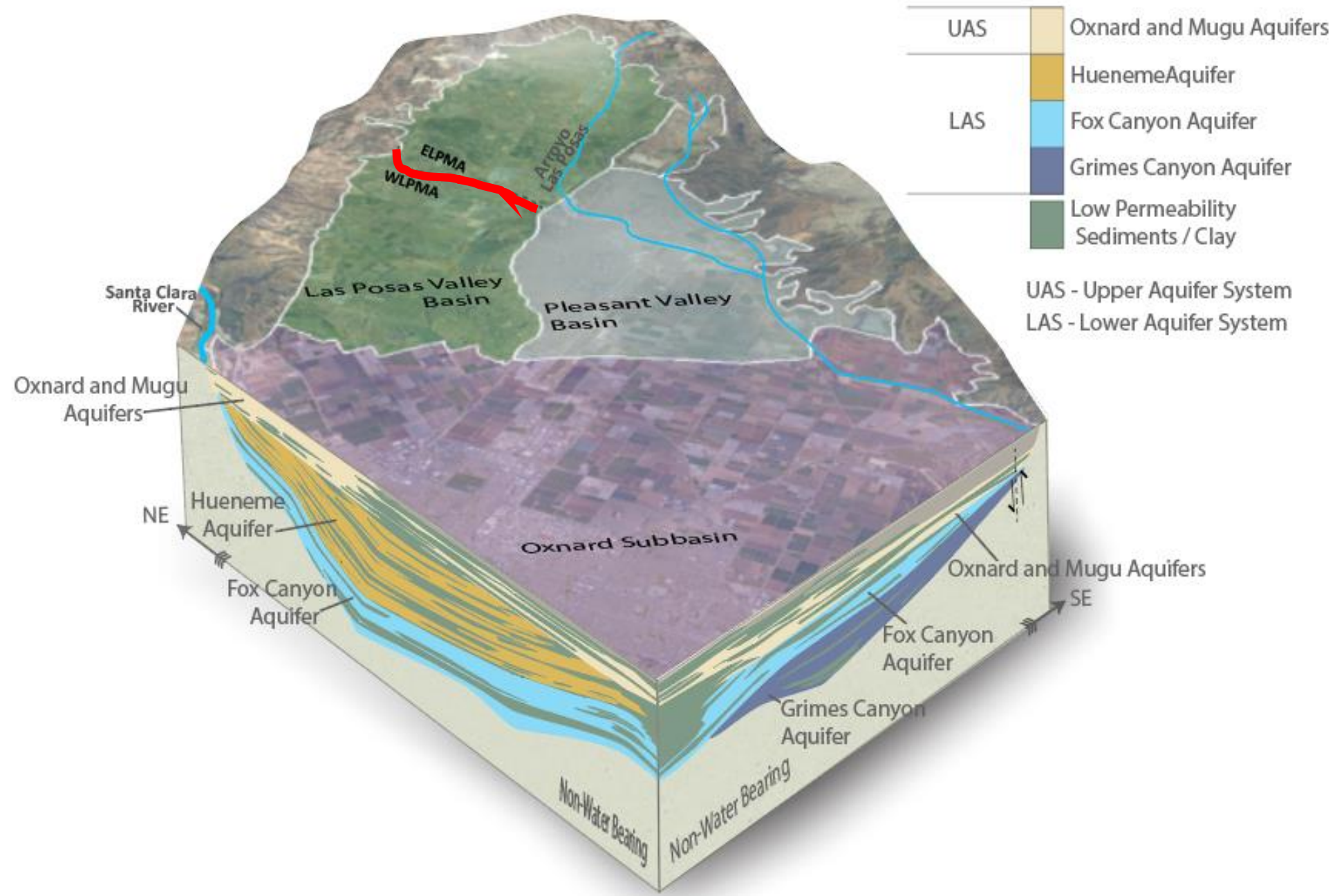
**Land Subsidence**



**Interconnected Surface  
Water and Groundwater**

# Set Water Level Thresholds





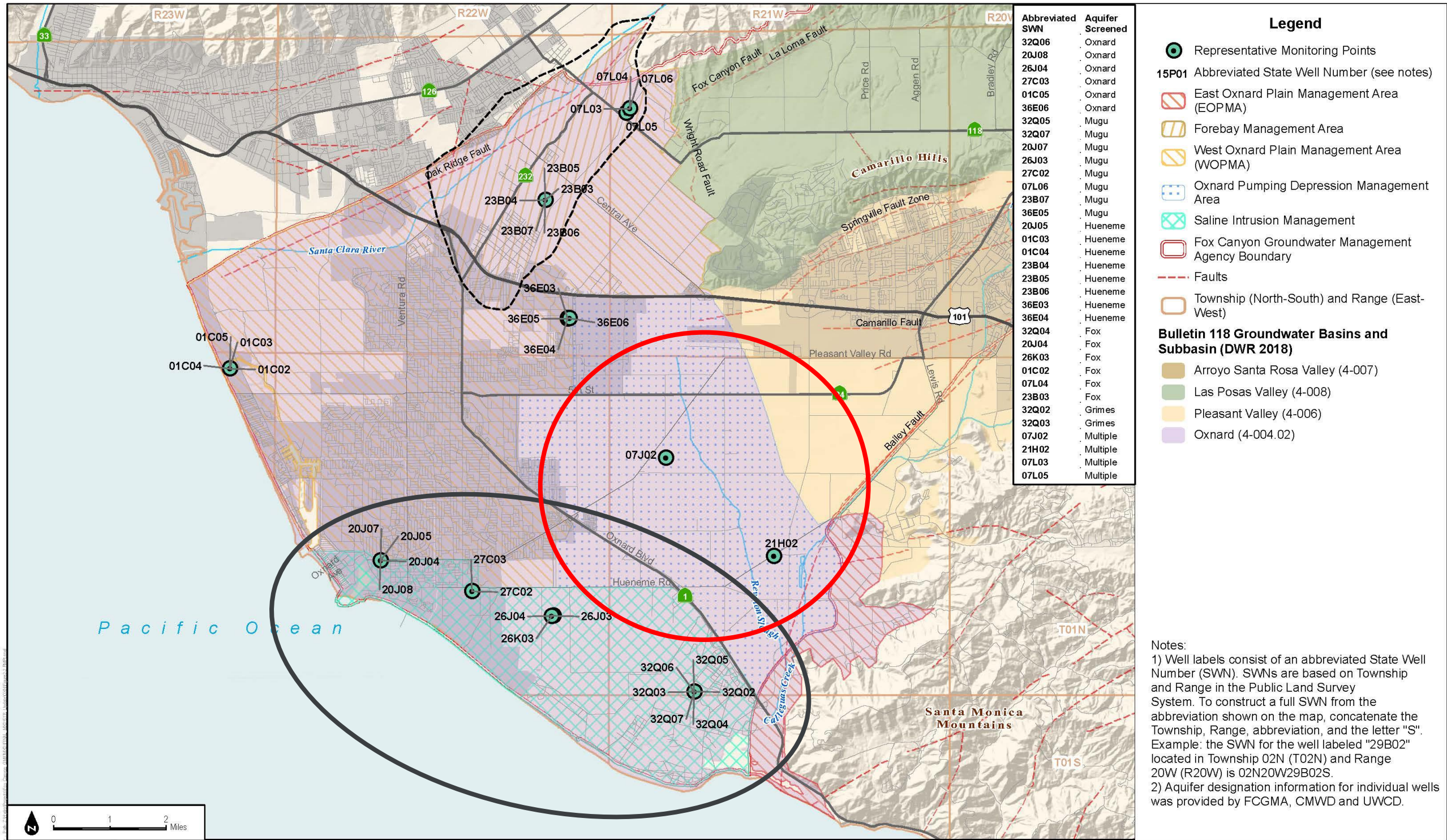
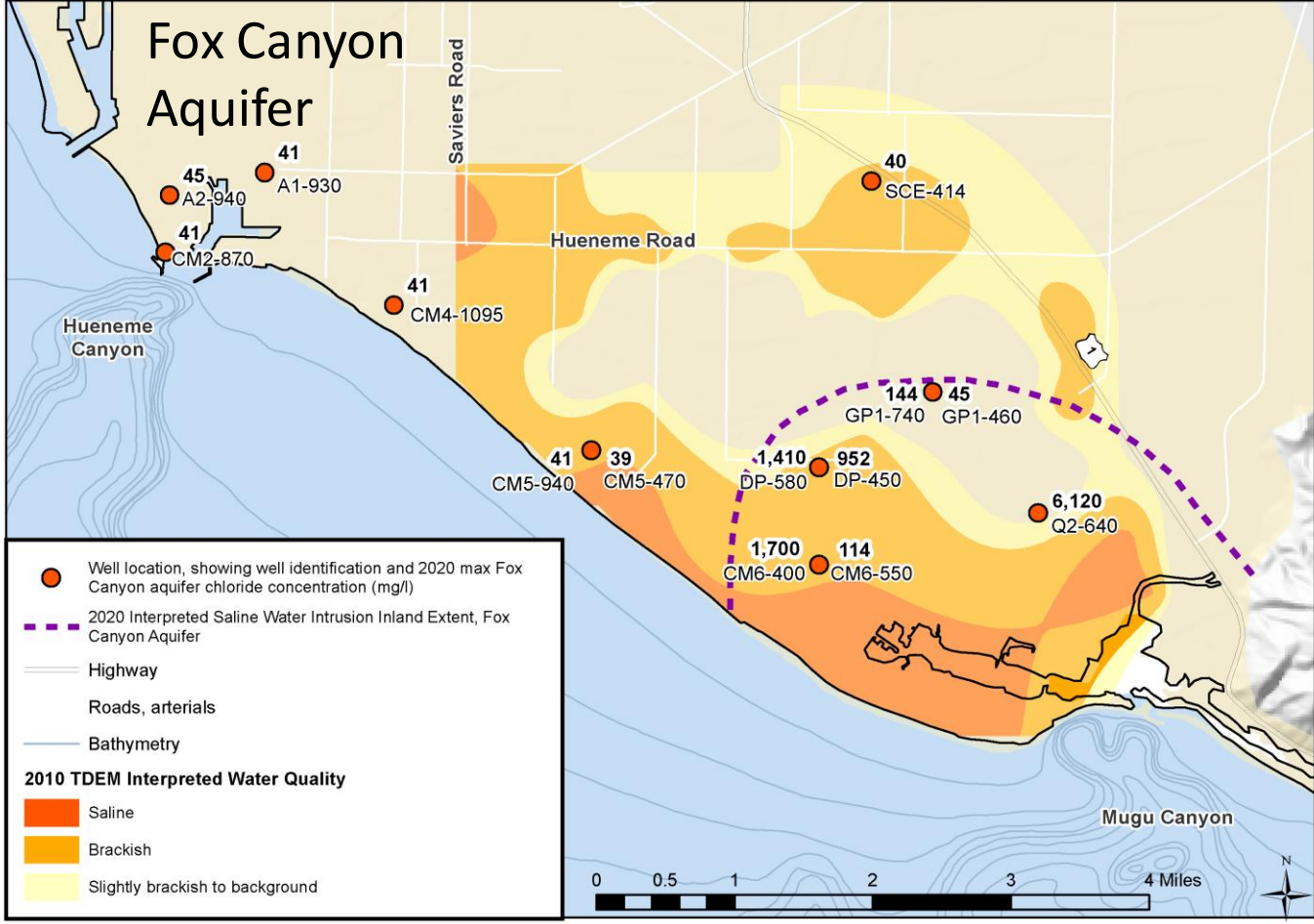
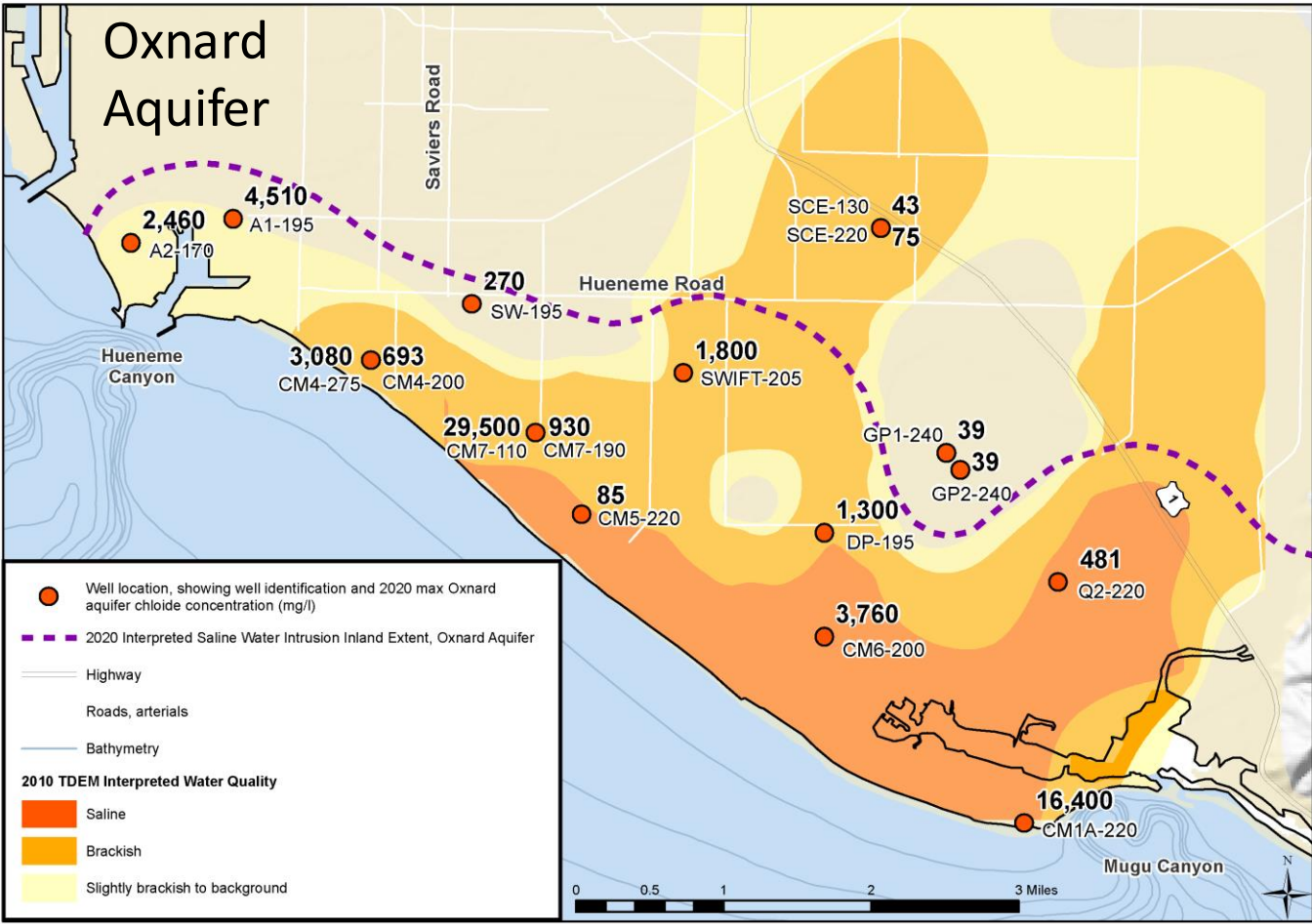


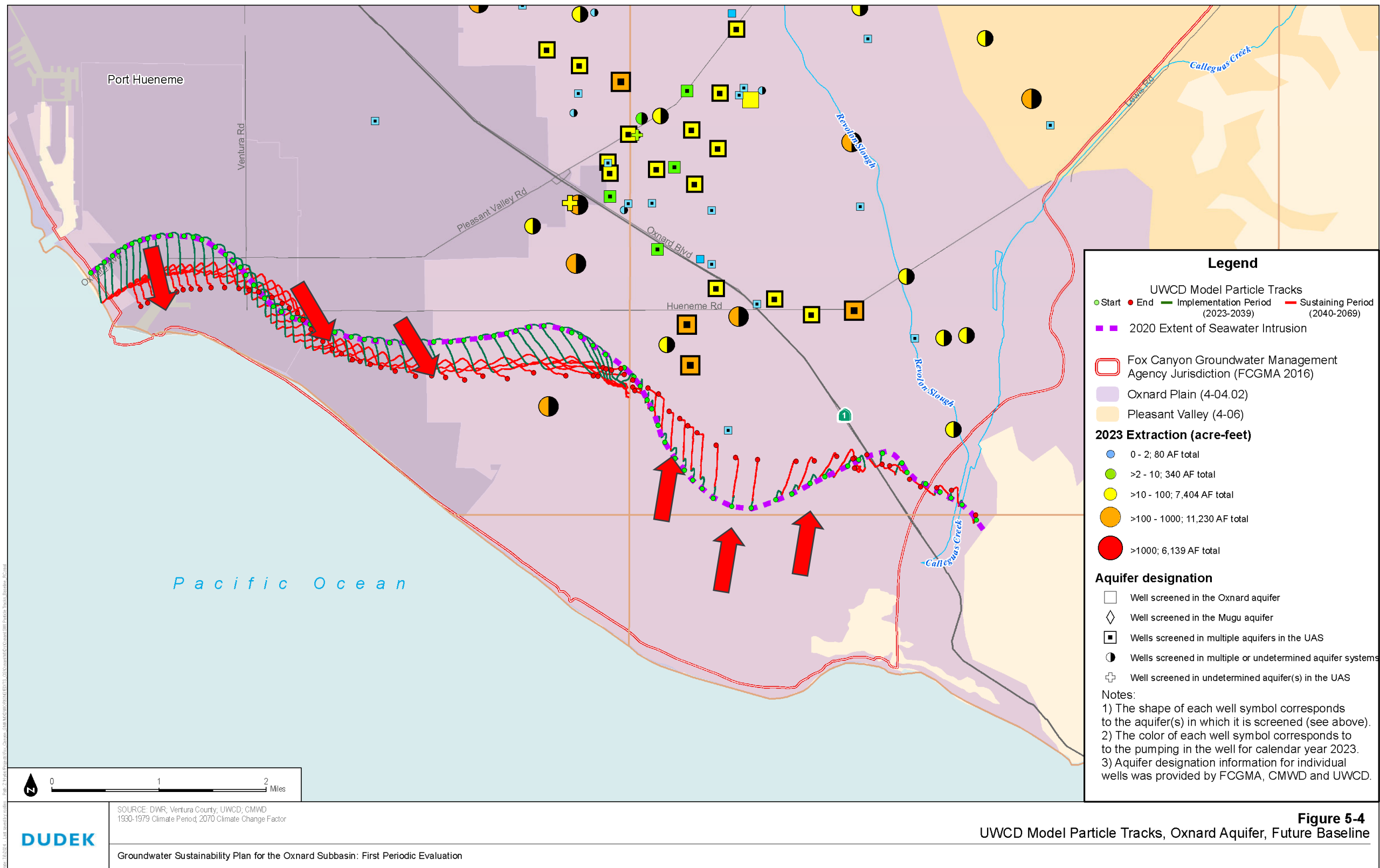
FIGURE 2-2

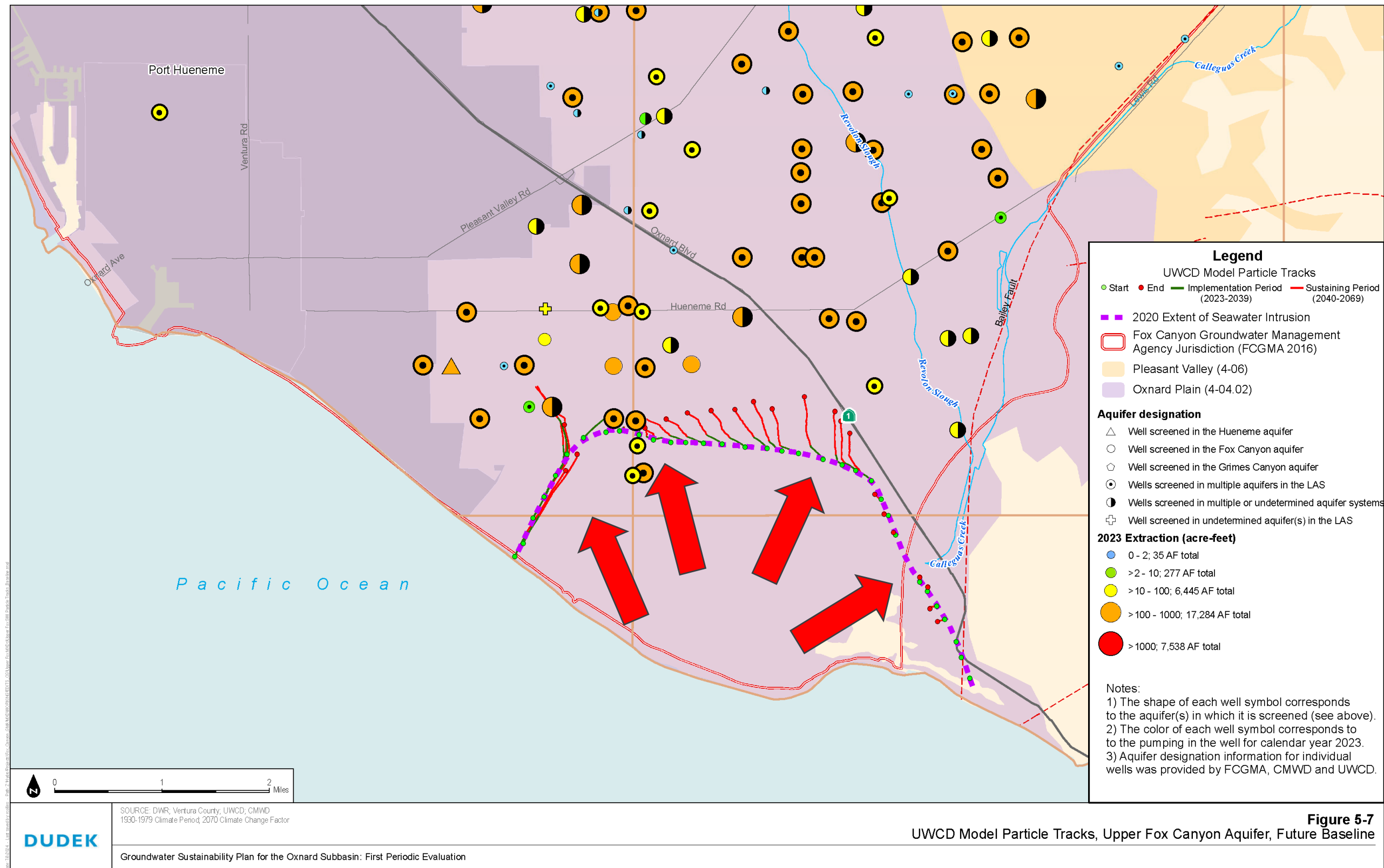
Representative Monitoring Points in the Oxnard Subbasin

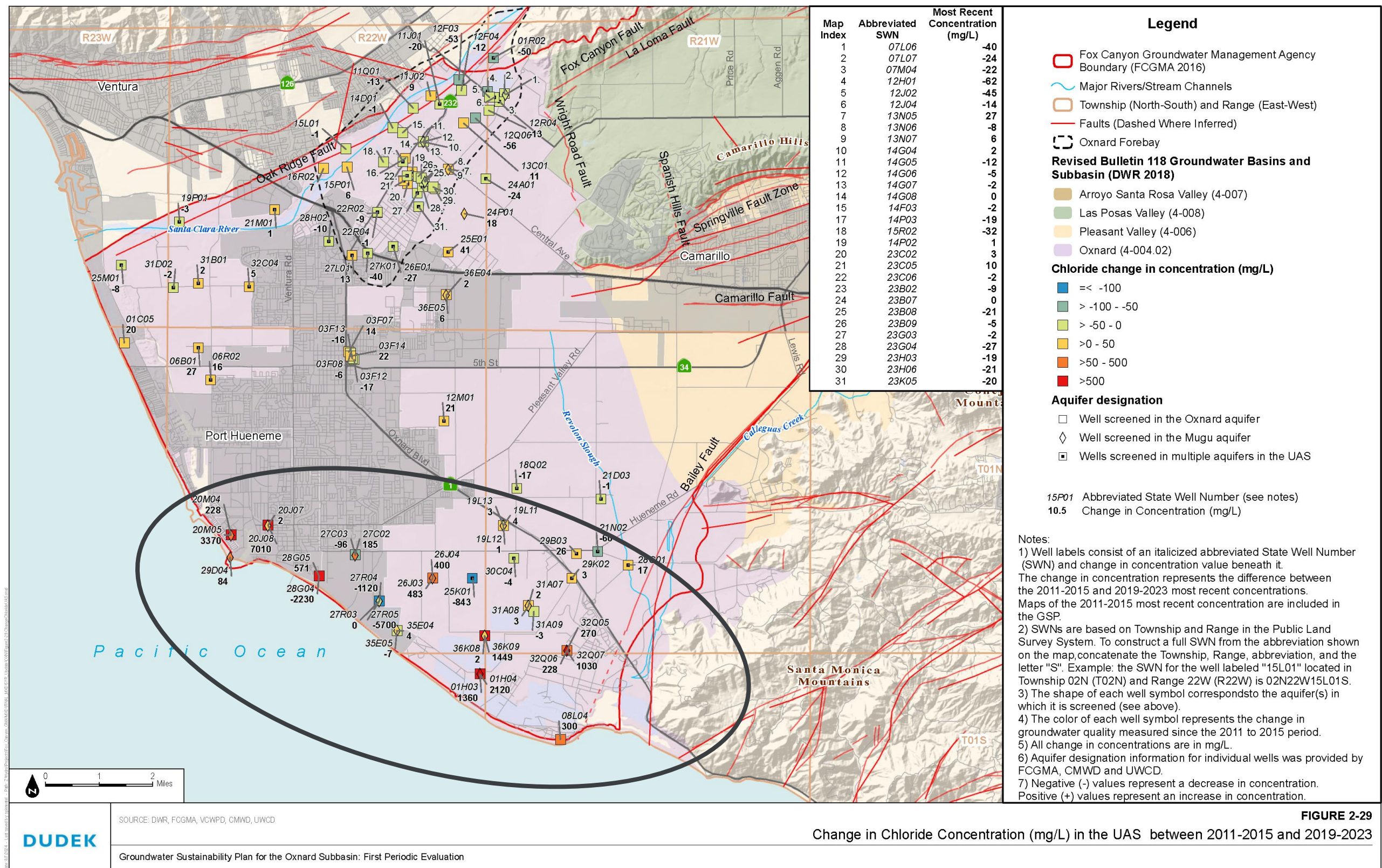
# Seawater Intrusion



Figures: UWCD OFR 2021-03, November 2021



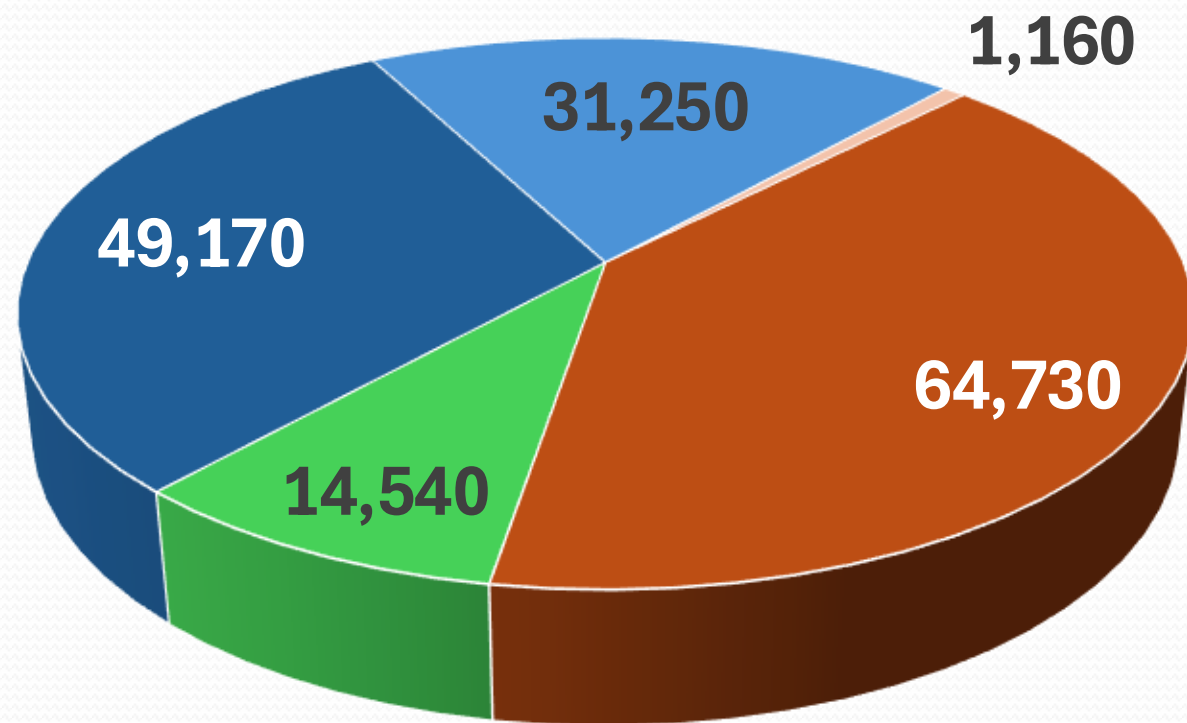




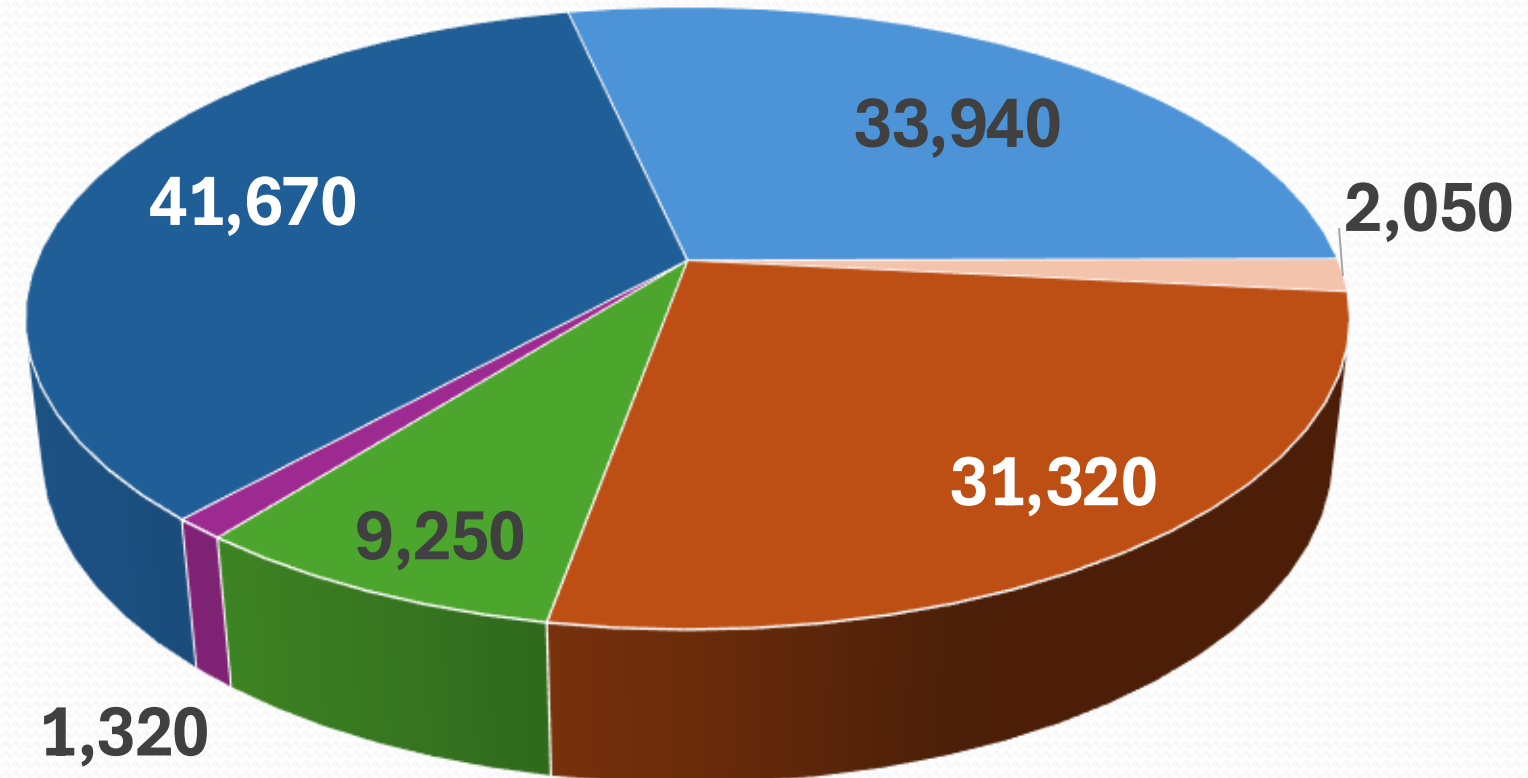
# Total Water Demand: Oxnard Subbasin

Historical (1985 - 2022) Demand  
2023-2025 surface water diversions ~ 85,000 and

Total: 160,850 AFY

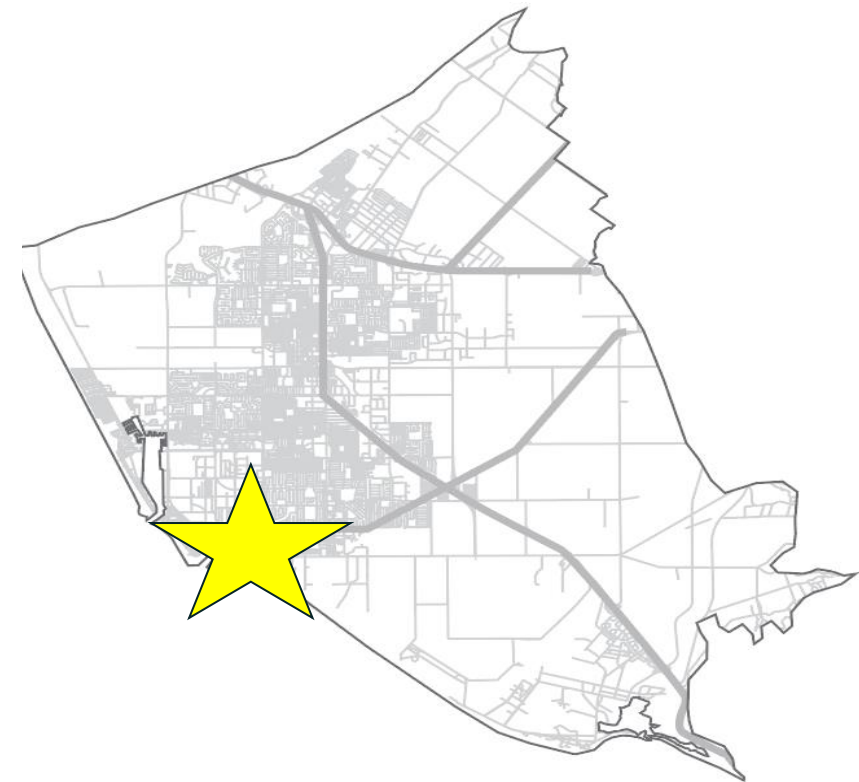
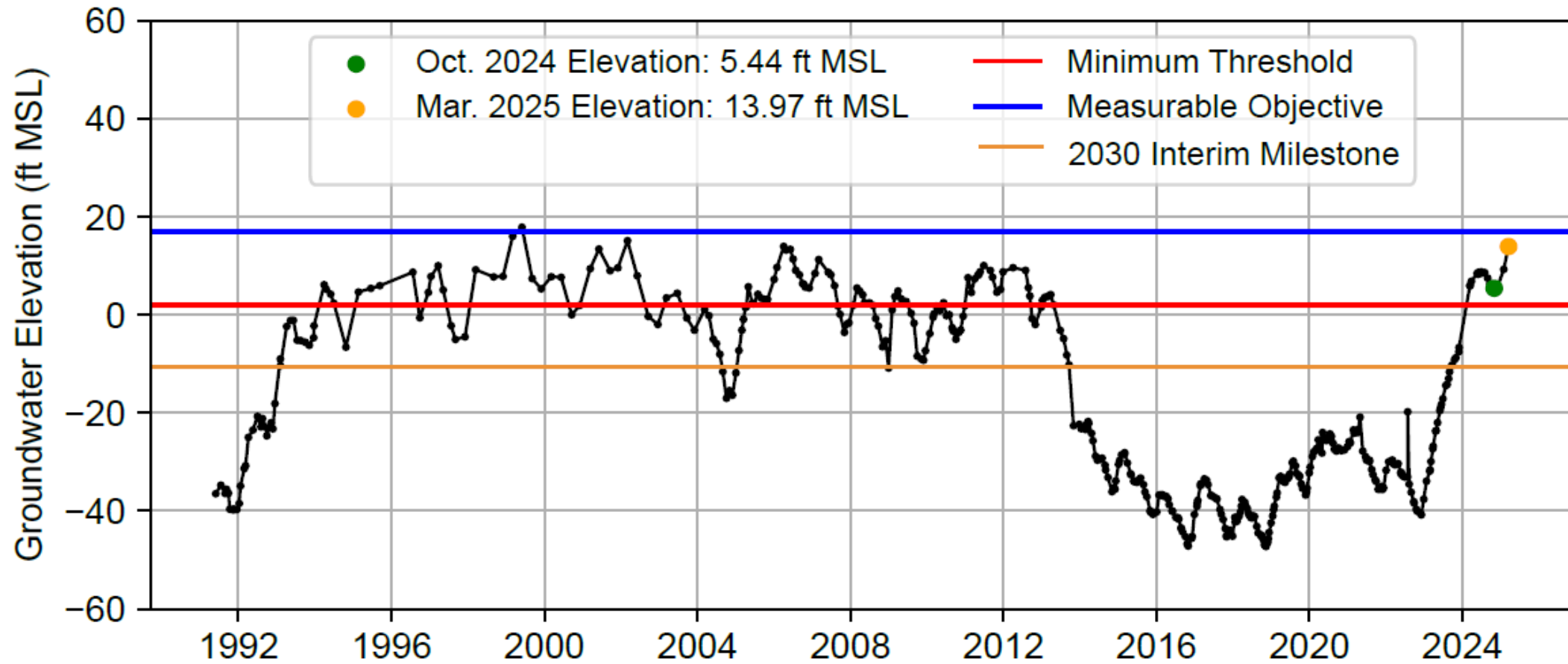


Total: 119,550 AFY



■ Groundwater: Upper Aquifer System ■ Groundwater: Lower Aquifer System  
■ Conejo Creek ■ Santa Clara River  
■ Imported Water ■ Recycled Water

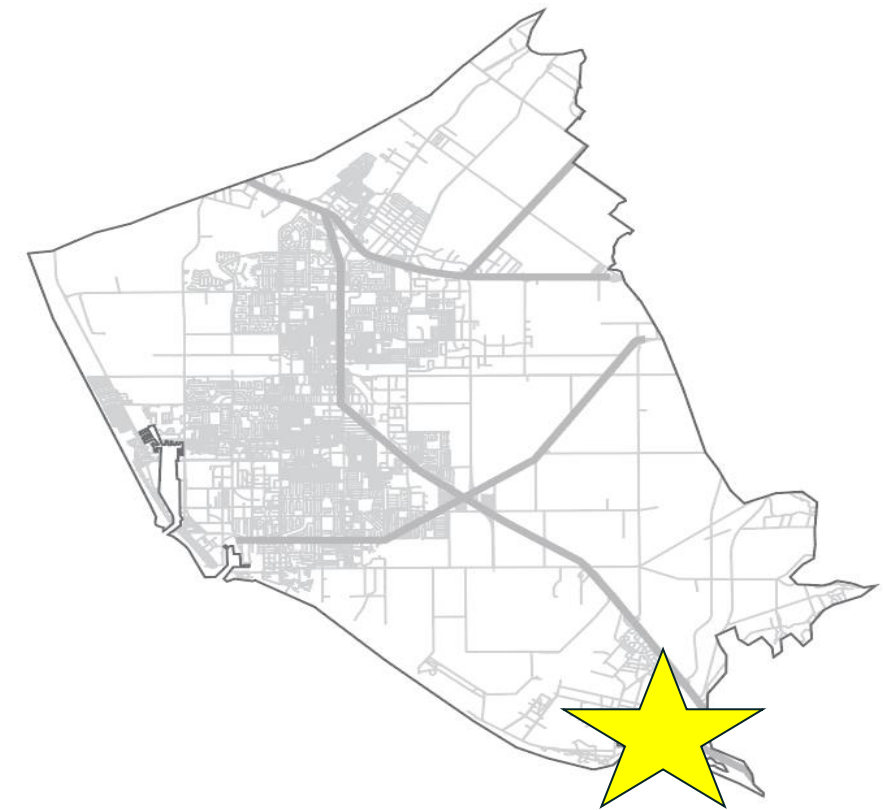
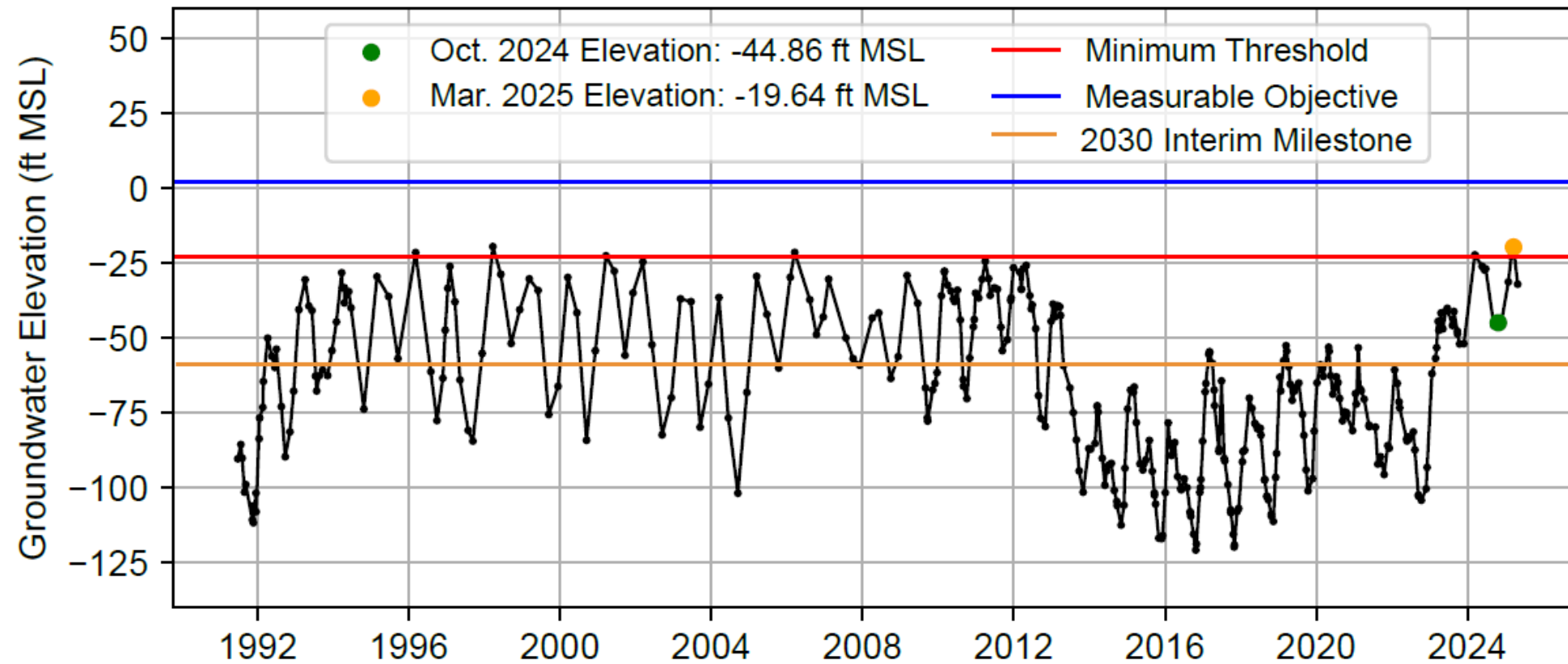
# Oxnard Aquifer Near Port of Hueneme







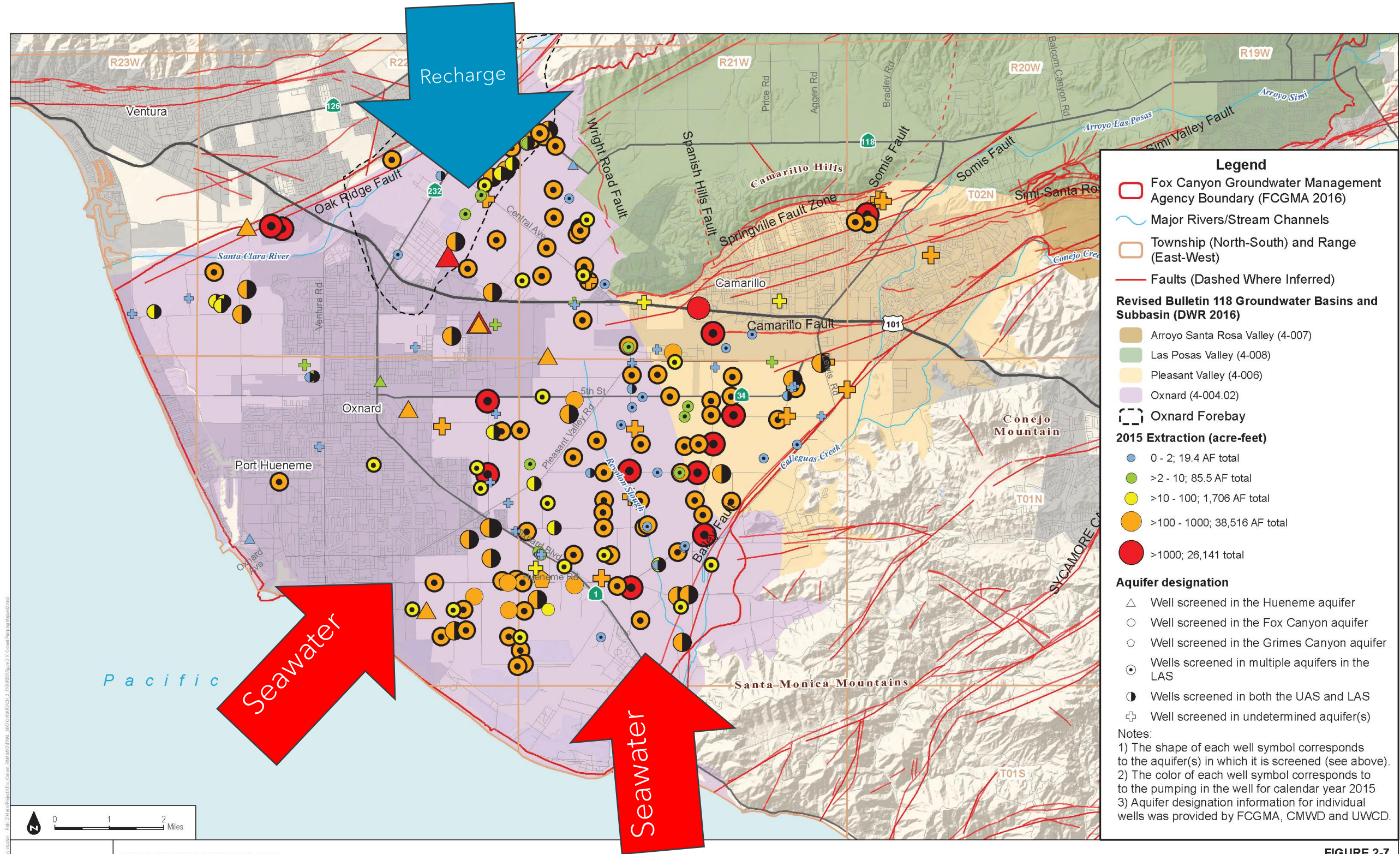
# Fox Canyon Aquifer – Lower System near Pt Mugu





# State of Basin - Seawater Intrusion

- 100,000+ Acre Feet of Seawater flux into Oxnard from 2015 – 2022 (modeled flux)
- Sustainable yield is estimated around ~50,000 acre feet per year
- Pumping averages ~70,000 acre feet per year



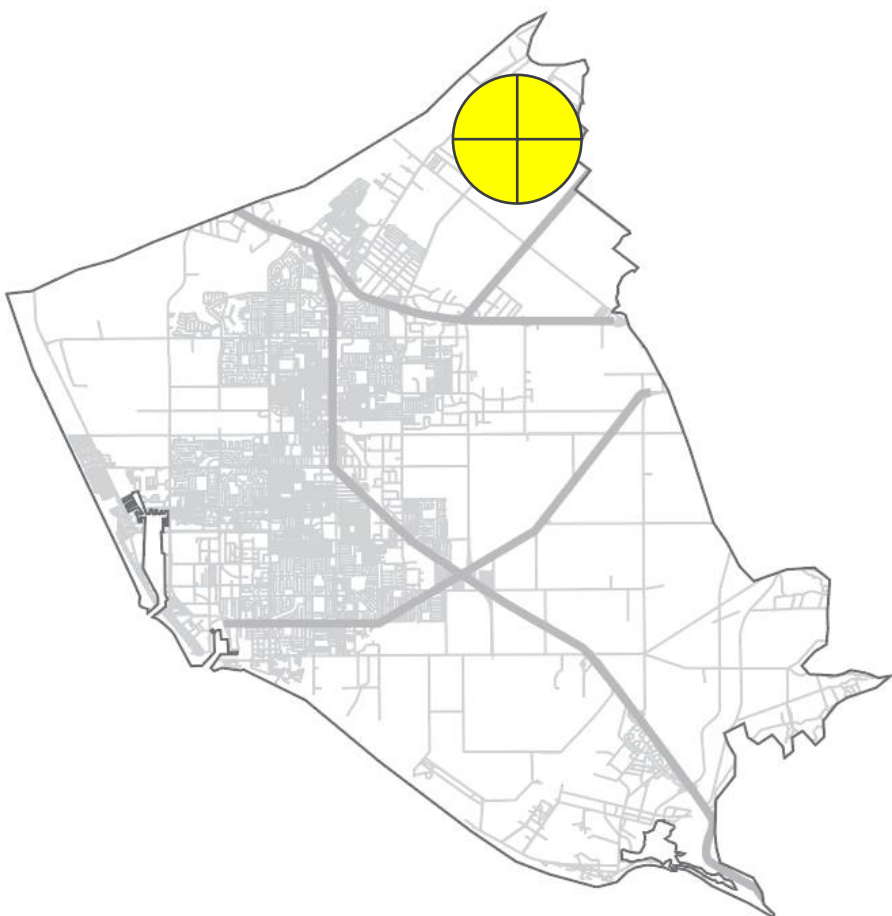
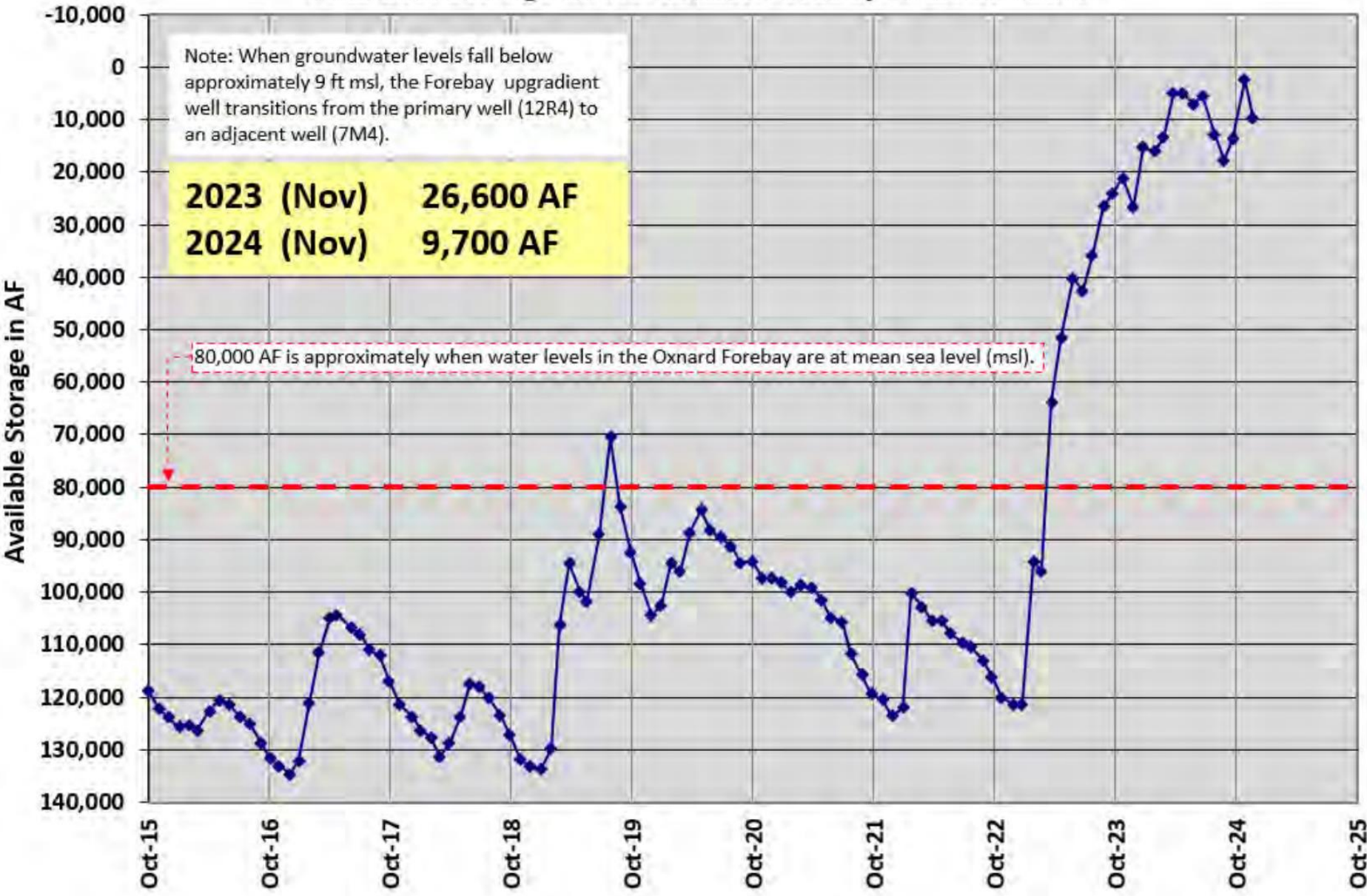
**FIGURE 2-7**  
Lower Aquifer System 2015 Extraction (acre-feet) in Oxnard and Pleasant Valley

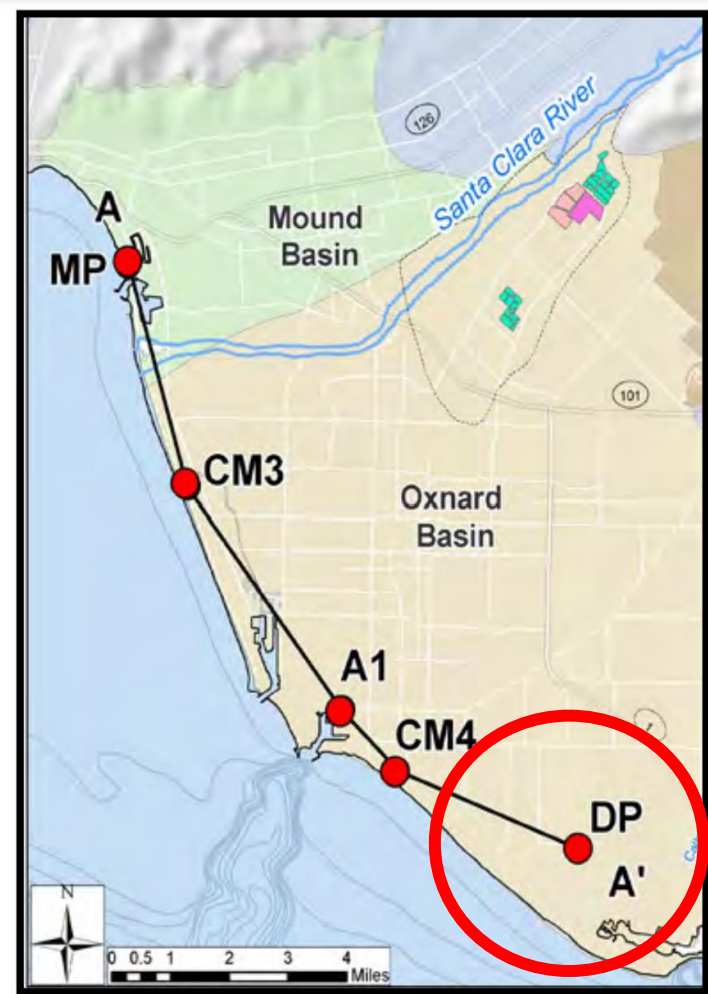
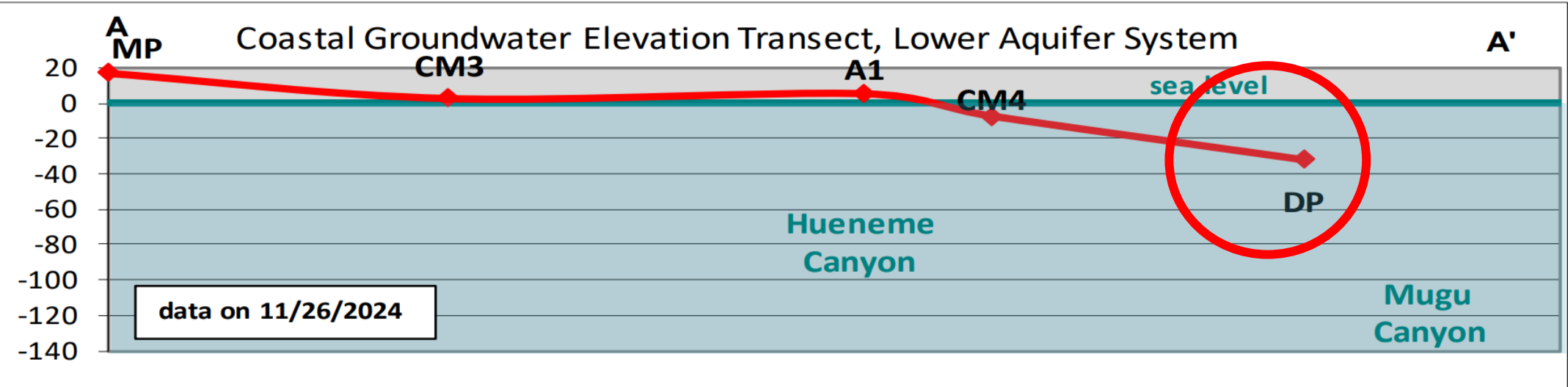
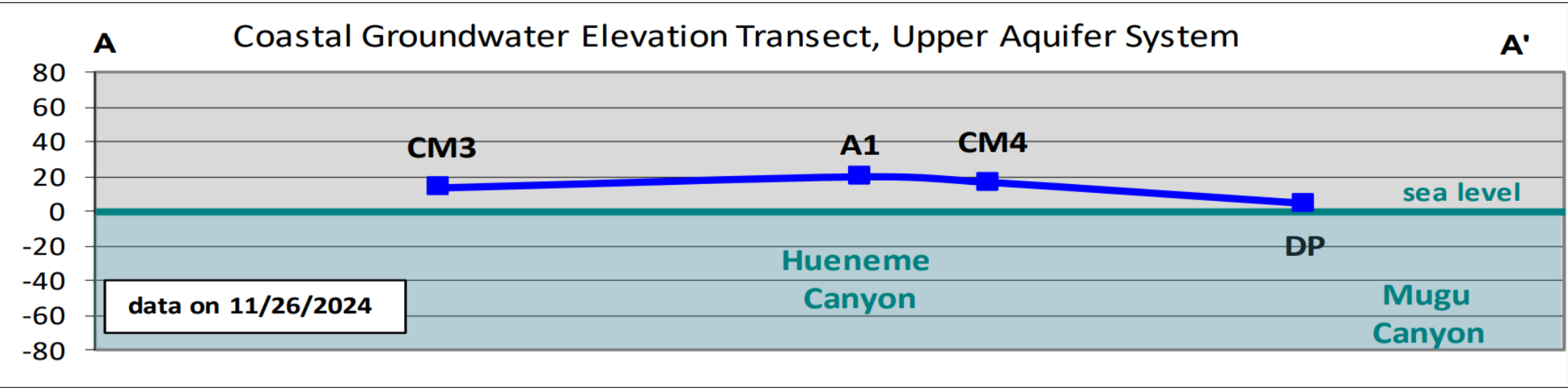
SOURCE: DWR, FCGMA, VCWPD, CMWD, UWCD

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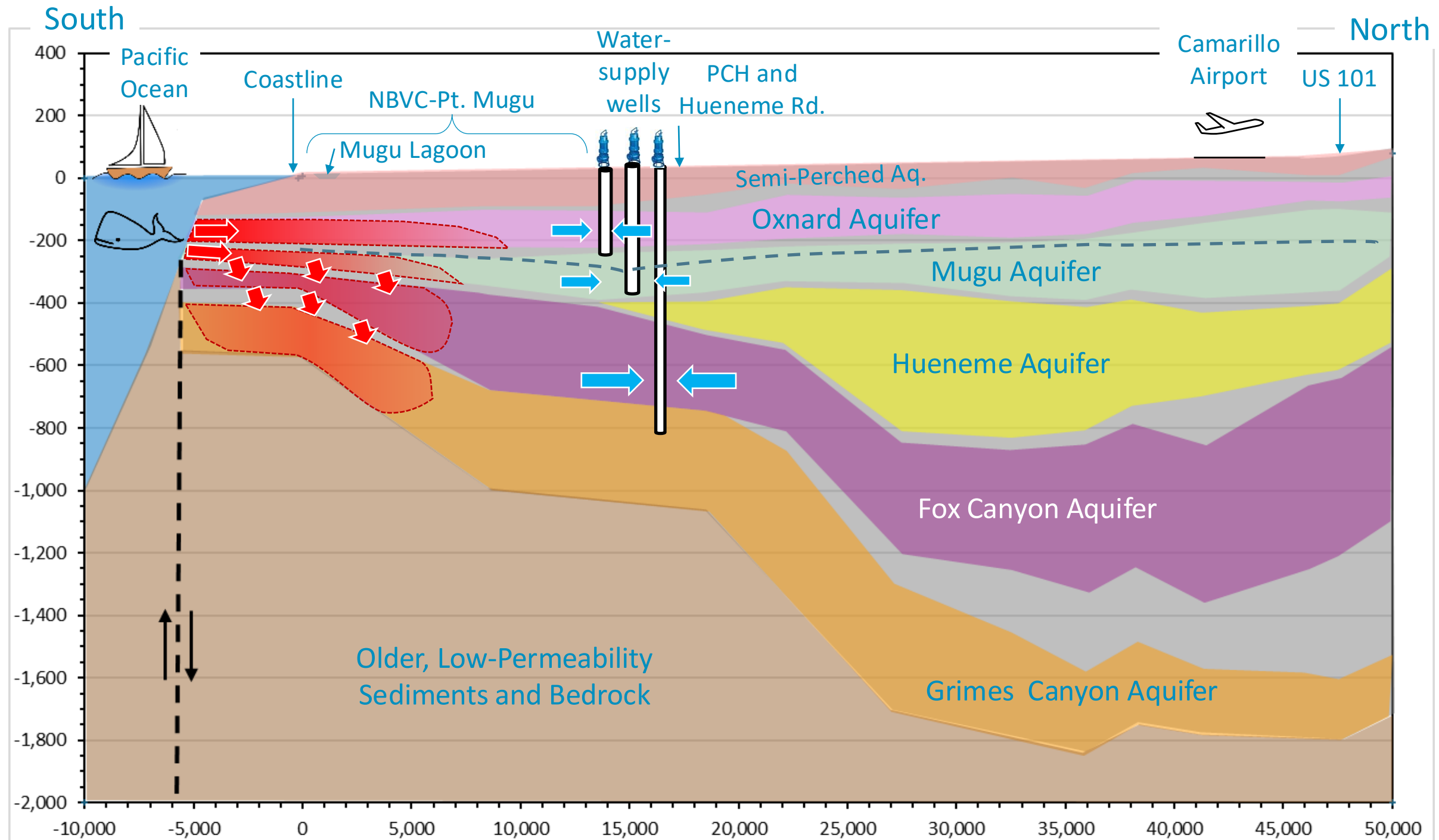
Groundwater Sustainability Plan for the Pleasant Valley Basin

Available Storage in the Oxnard Forebay - Last 10 Years

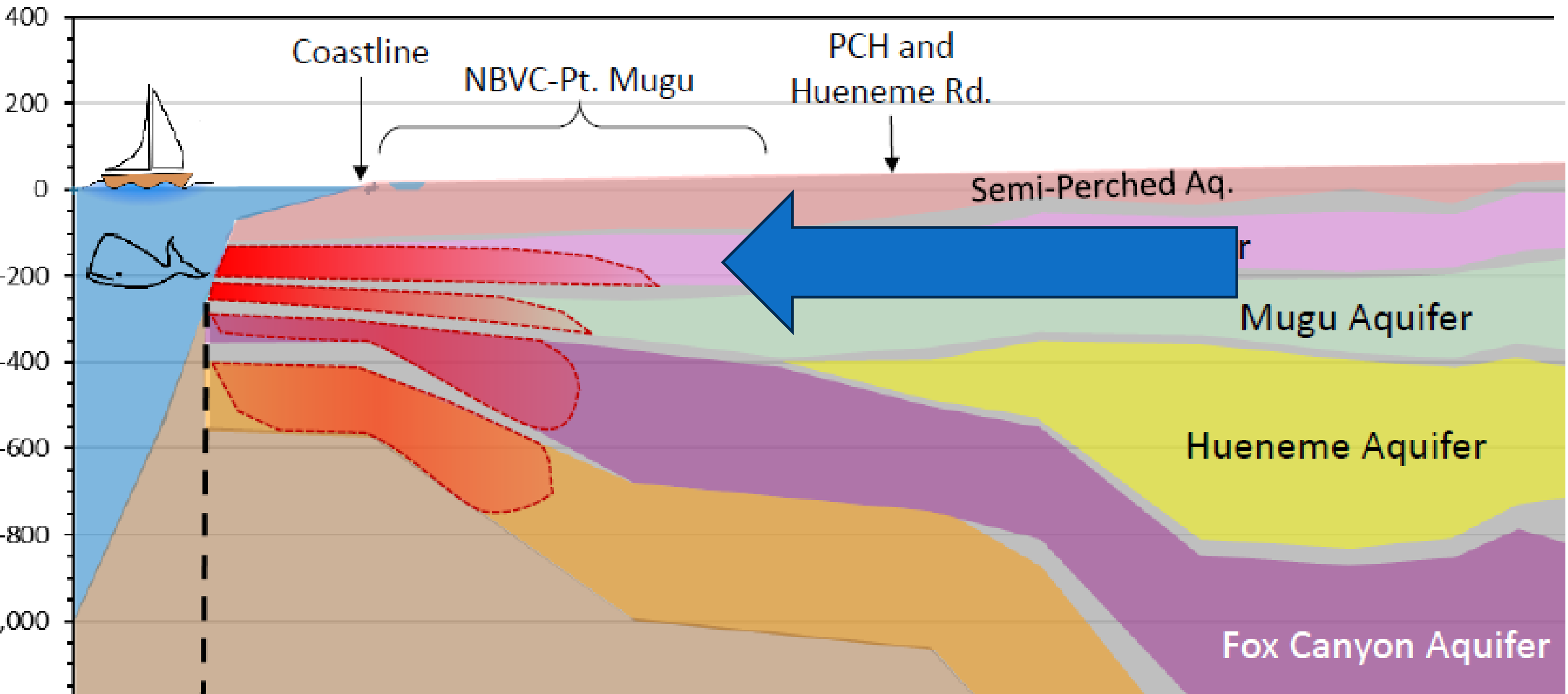


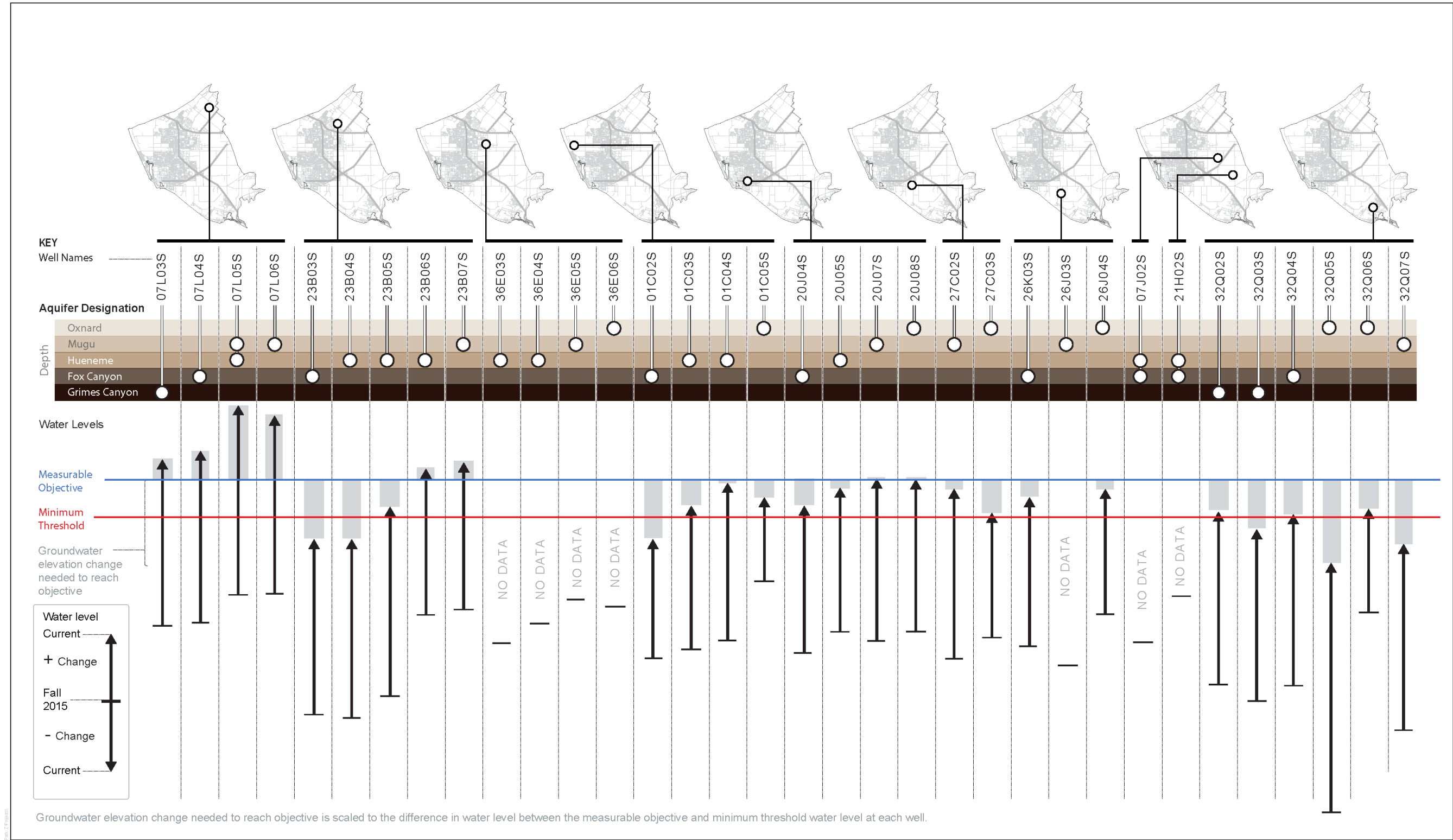


# North-to-South Cross-Sectional View



South



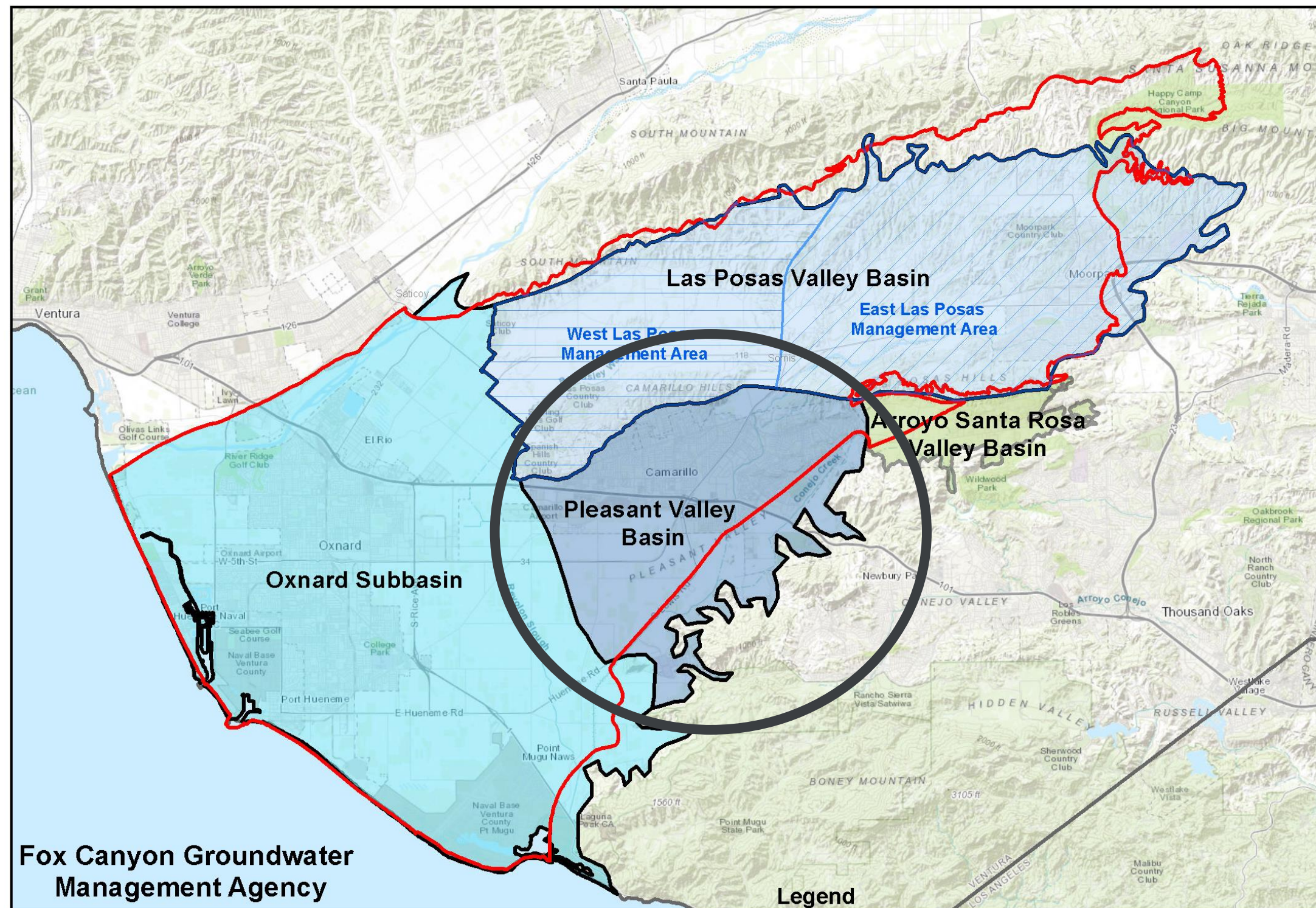


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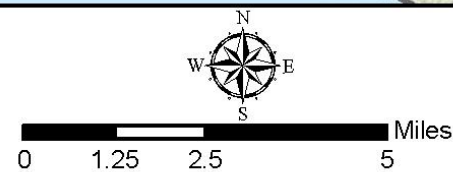
FIGURE 2-4

Spring 2024 Groundwater Levels Relative to the Minimum Thresholds and Measurable Objectives

Groundwater Sustainability Plan for the Oxnard Subbasin: First Periodic Evaluation



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Fox Canyon  
Groundwater  
Management  
Agency Boundary

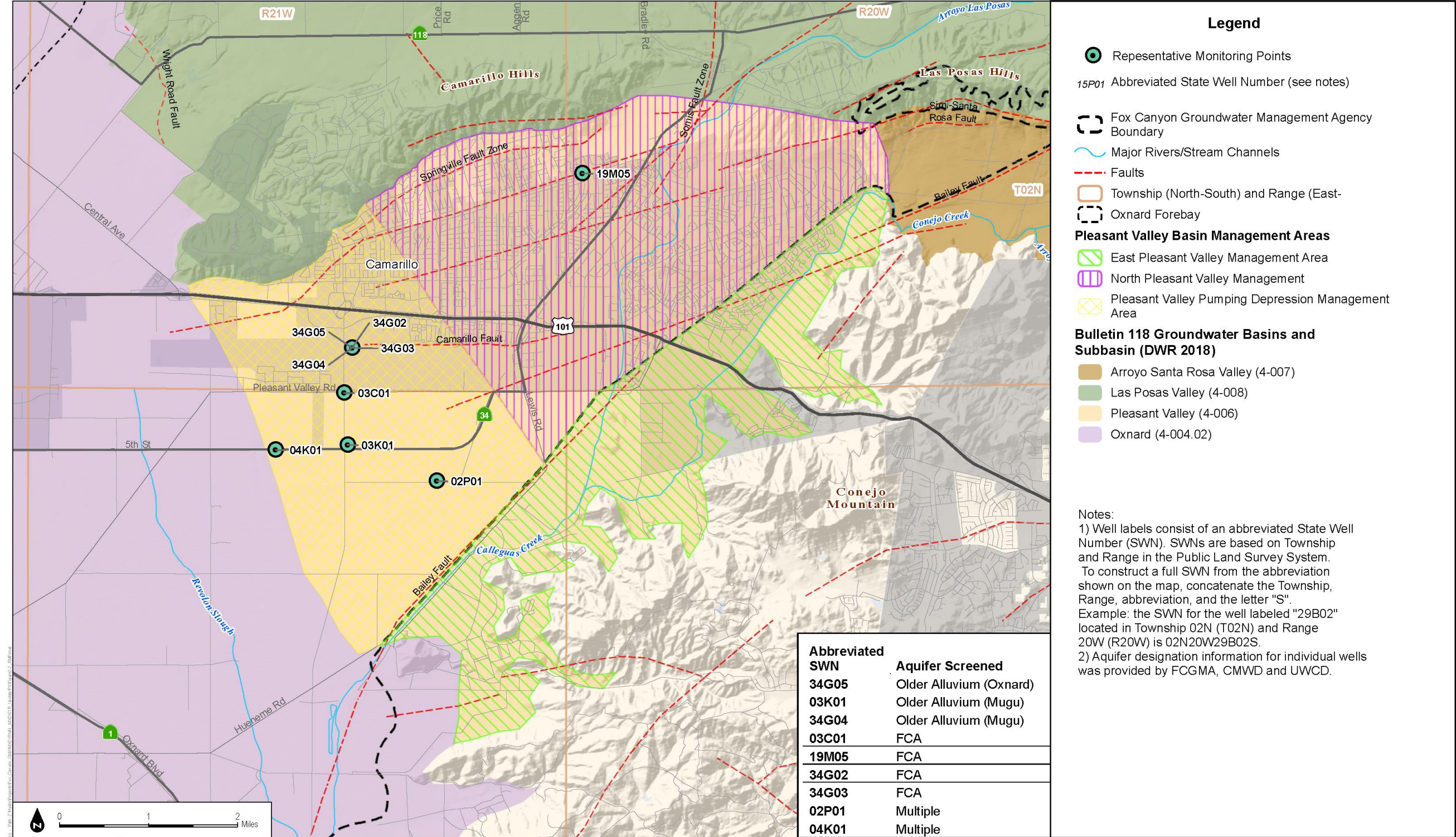
Ventura County  
Boundary

Oxnard Subbasin

Pleasant Valley  
Basin

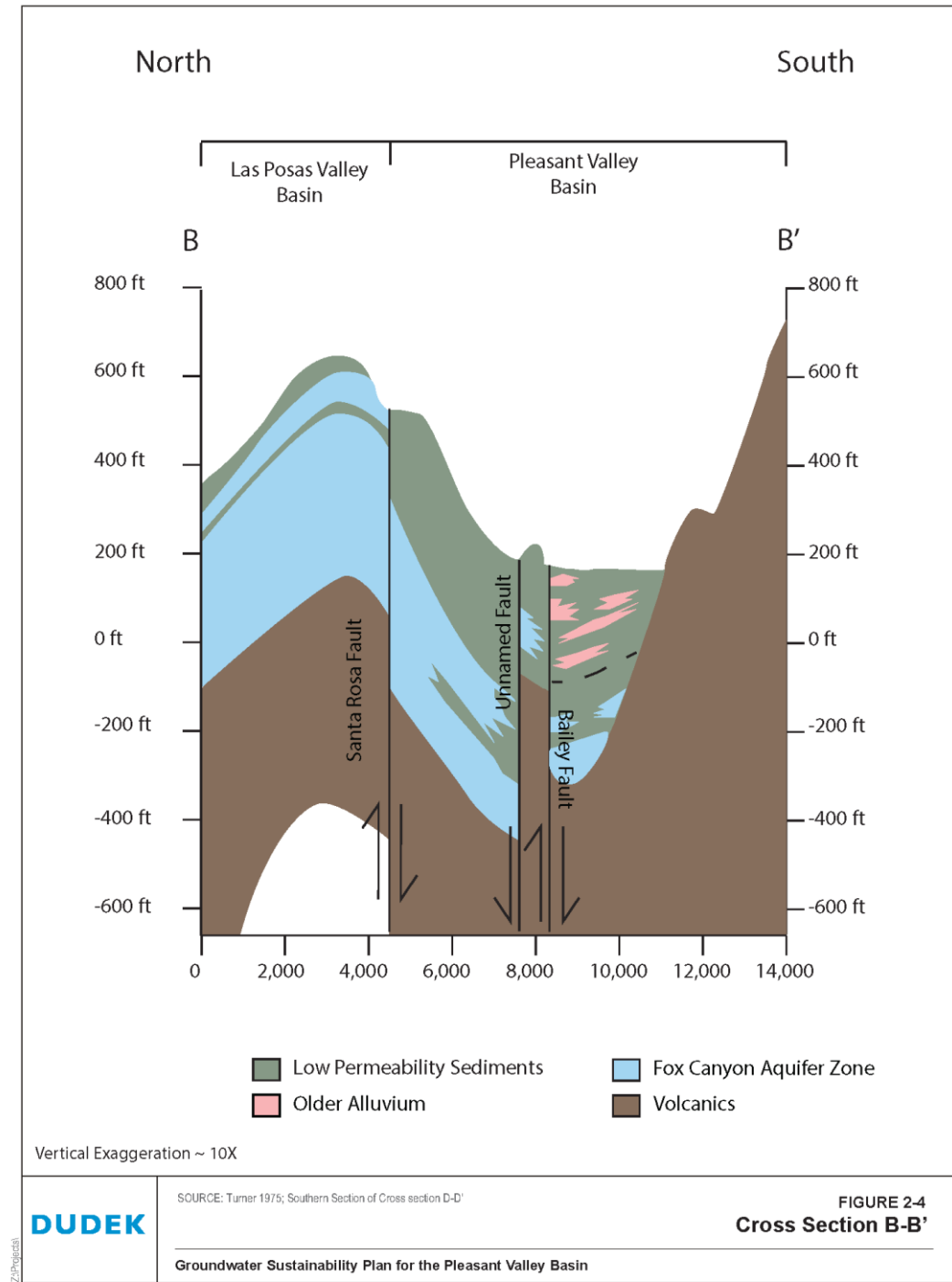
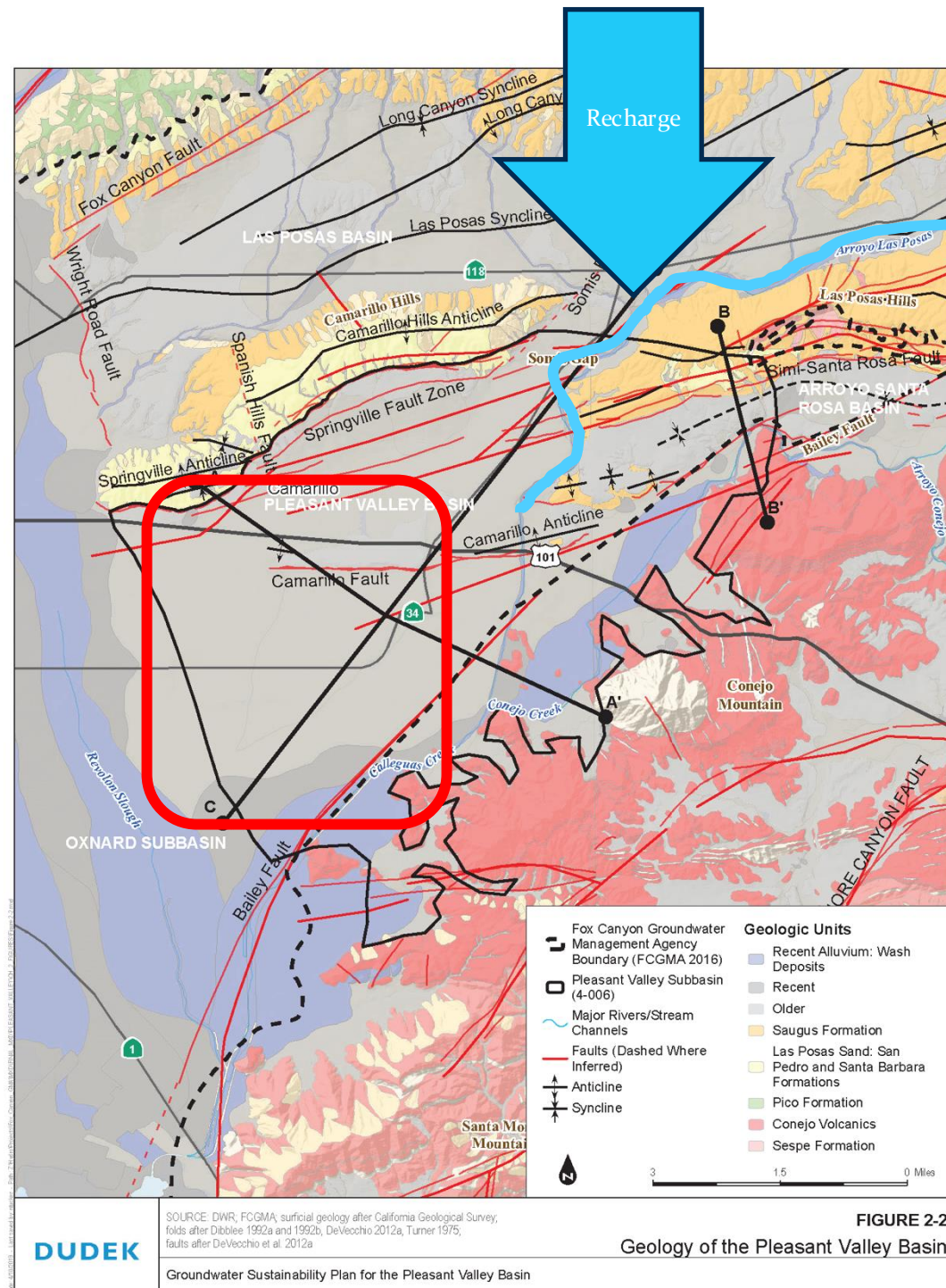
Arroyo Santa Rosa

Las Posas Valley  
Basin



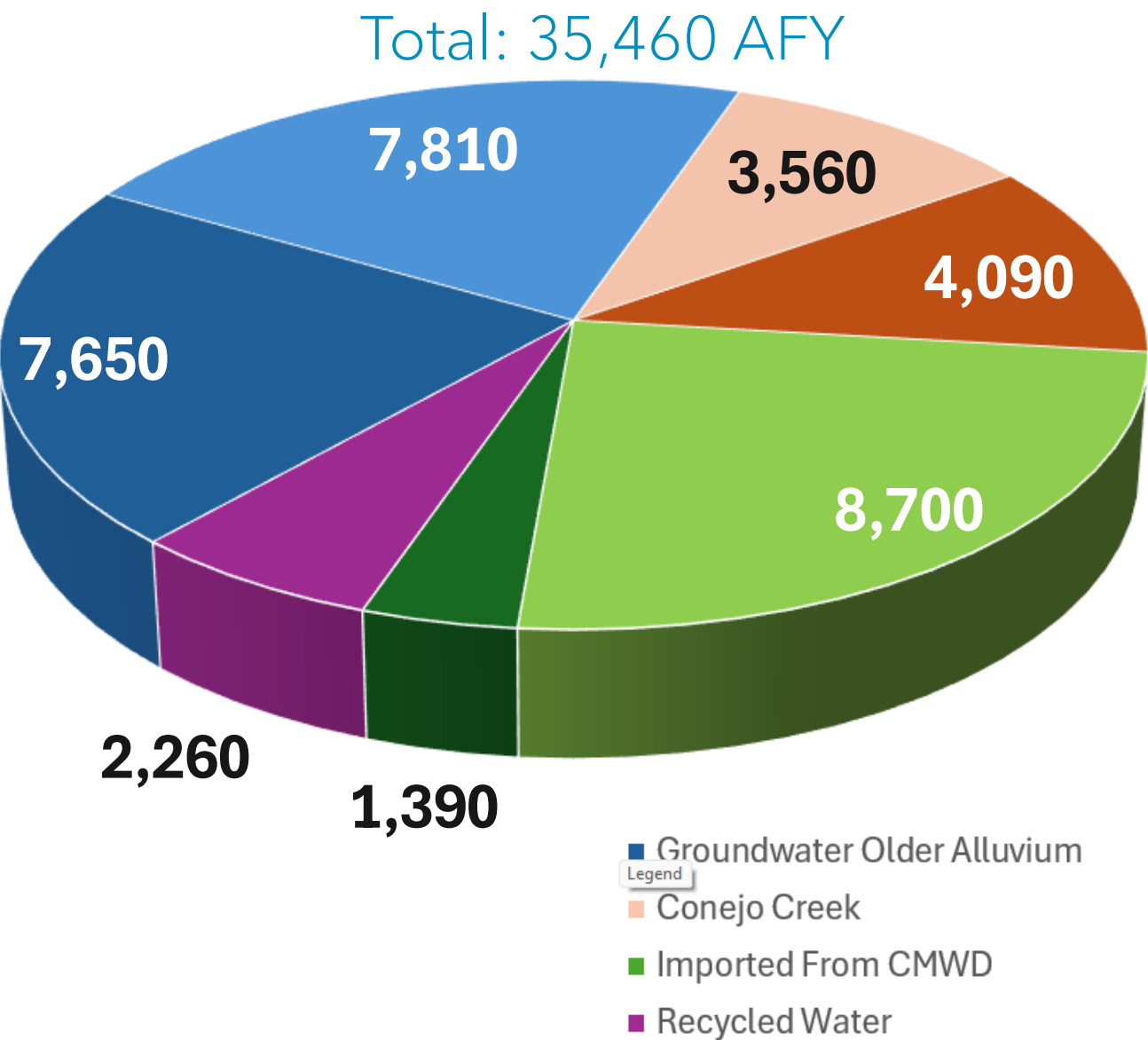
**FIGURE 2-2**  
Representative Monitoring Points in the Pleasant Valley Basin

# Pleasant Valley Hydrogeology

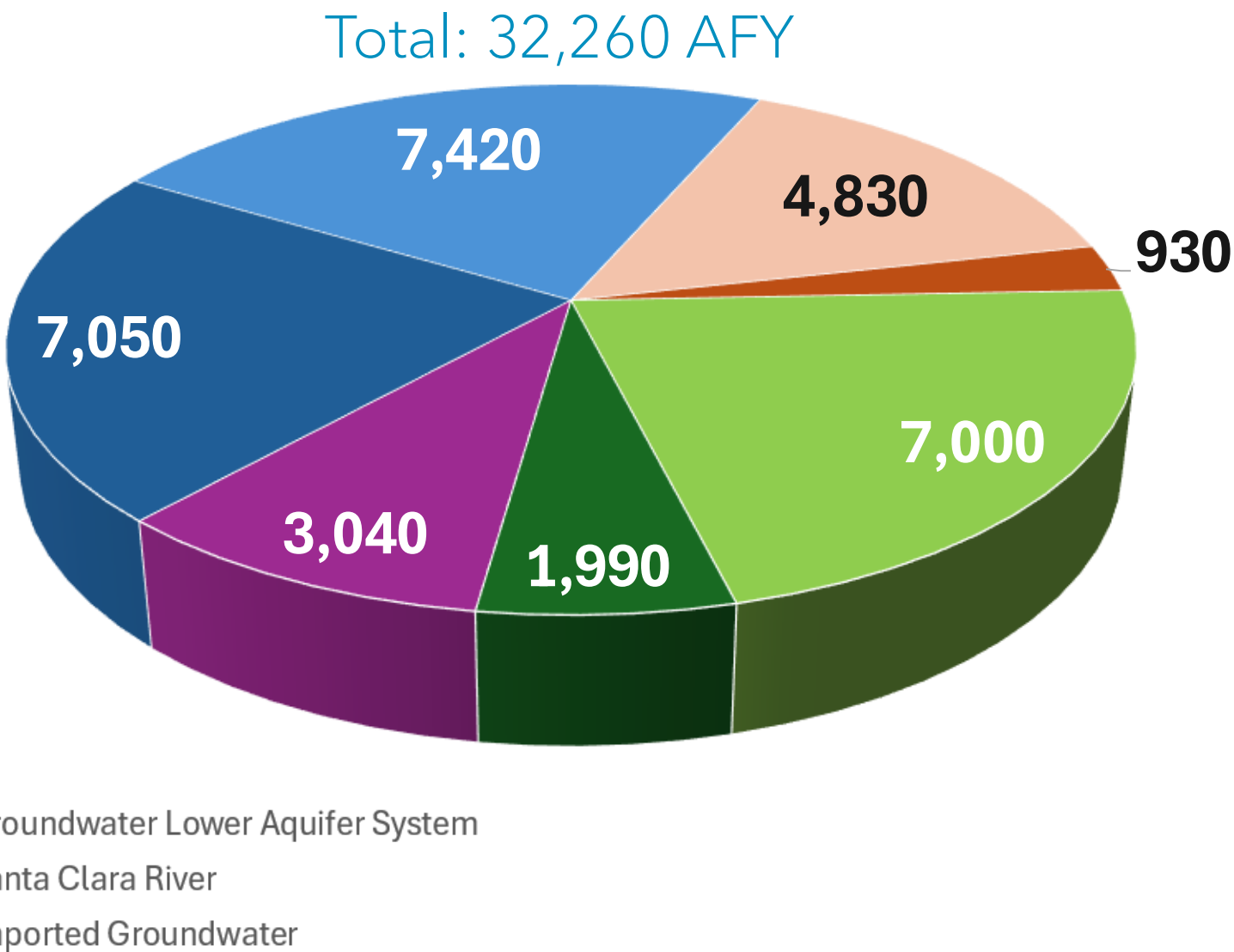


# Total Water Demand: Pleasant Valley Basin

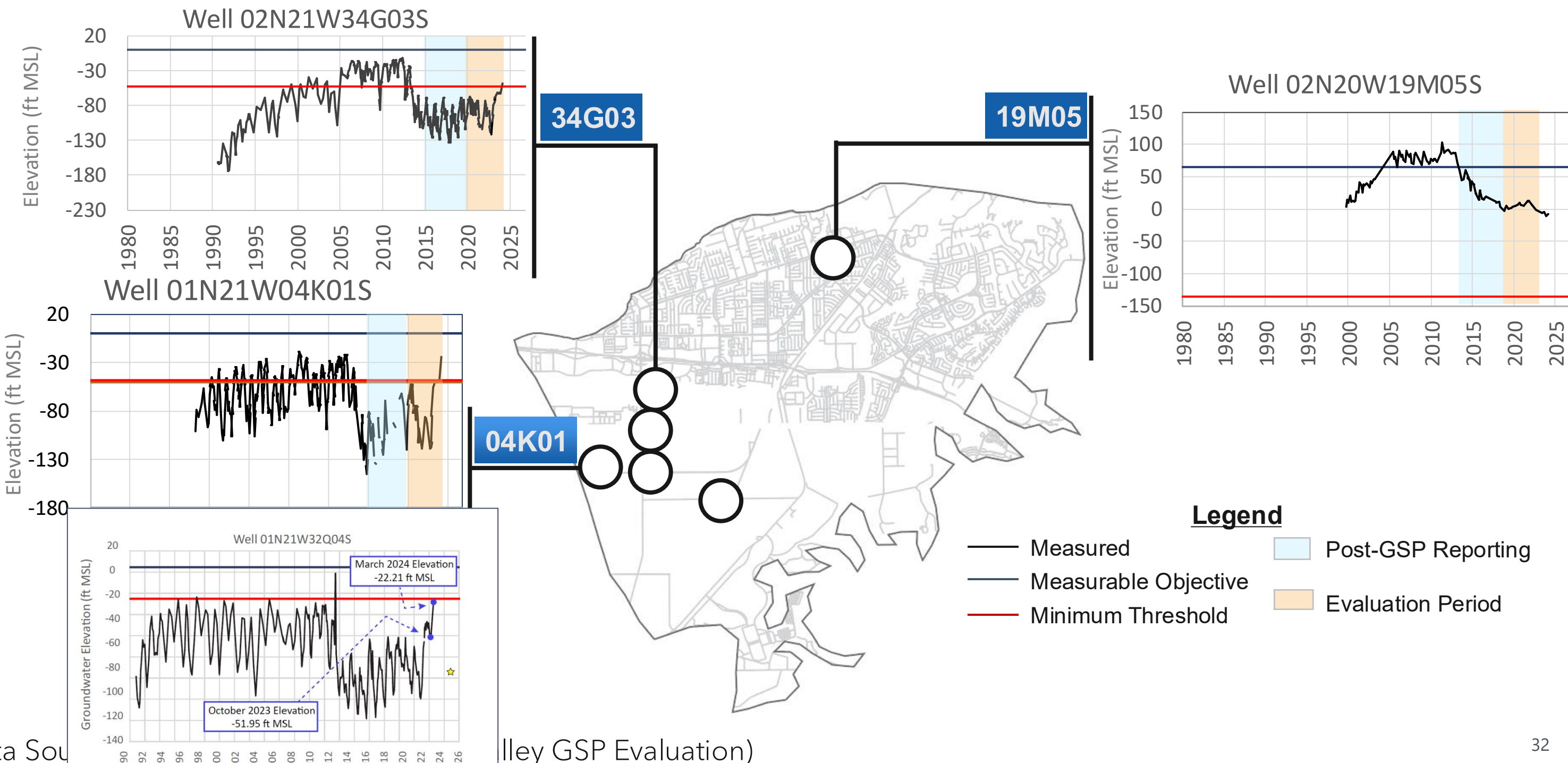
## Historical (1985 – 2015) Water Demand



## Current (2016 - 2022) Water Demand

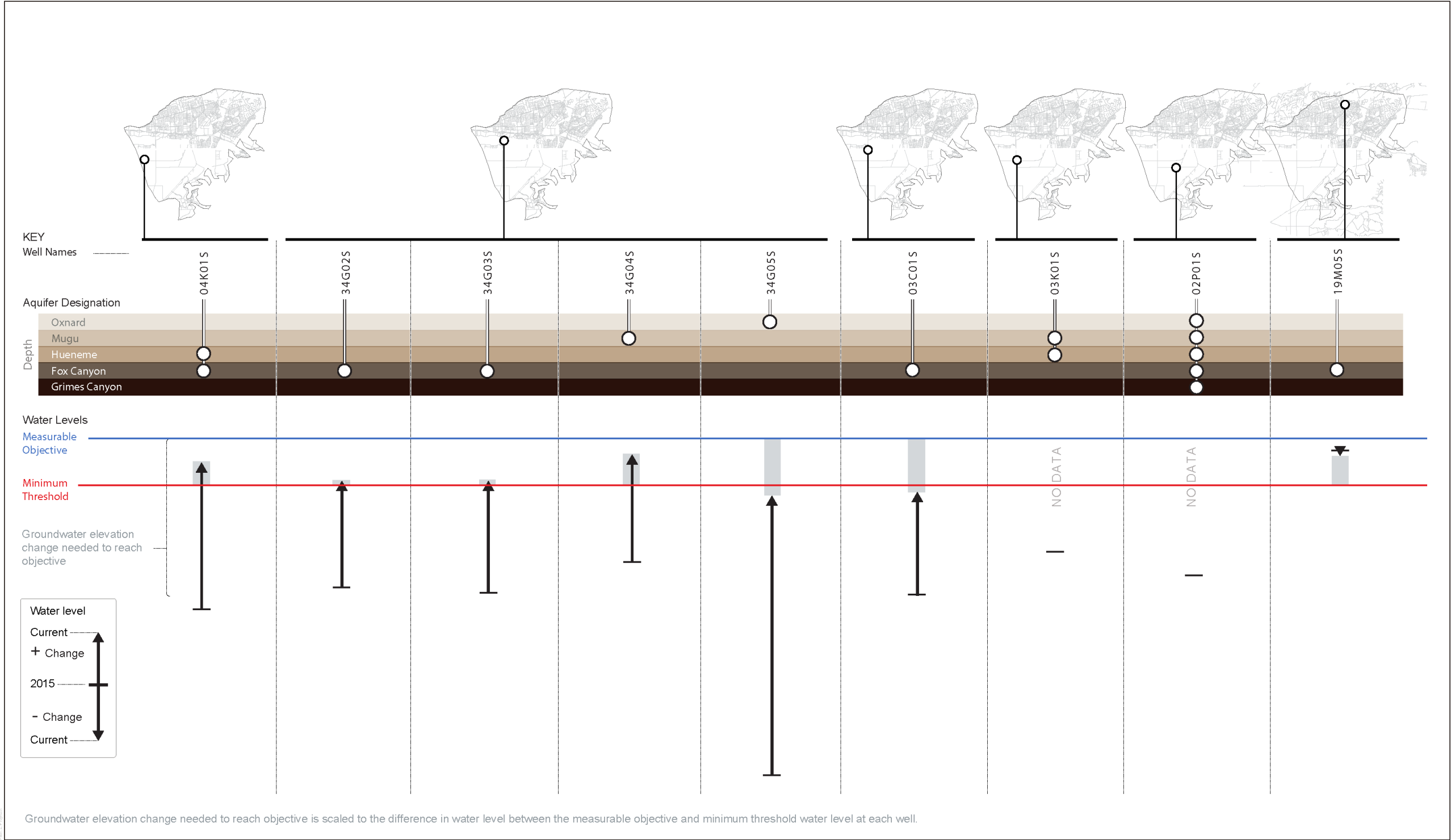


# Pleasant Valley Basin Groundwater Levels



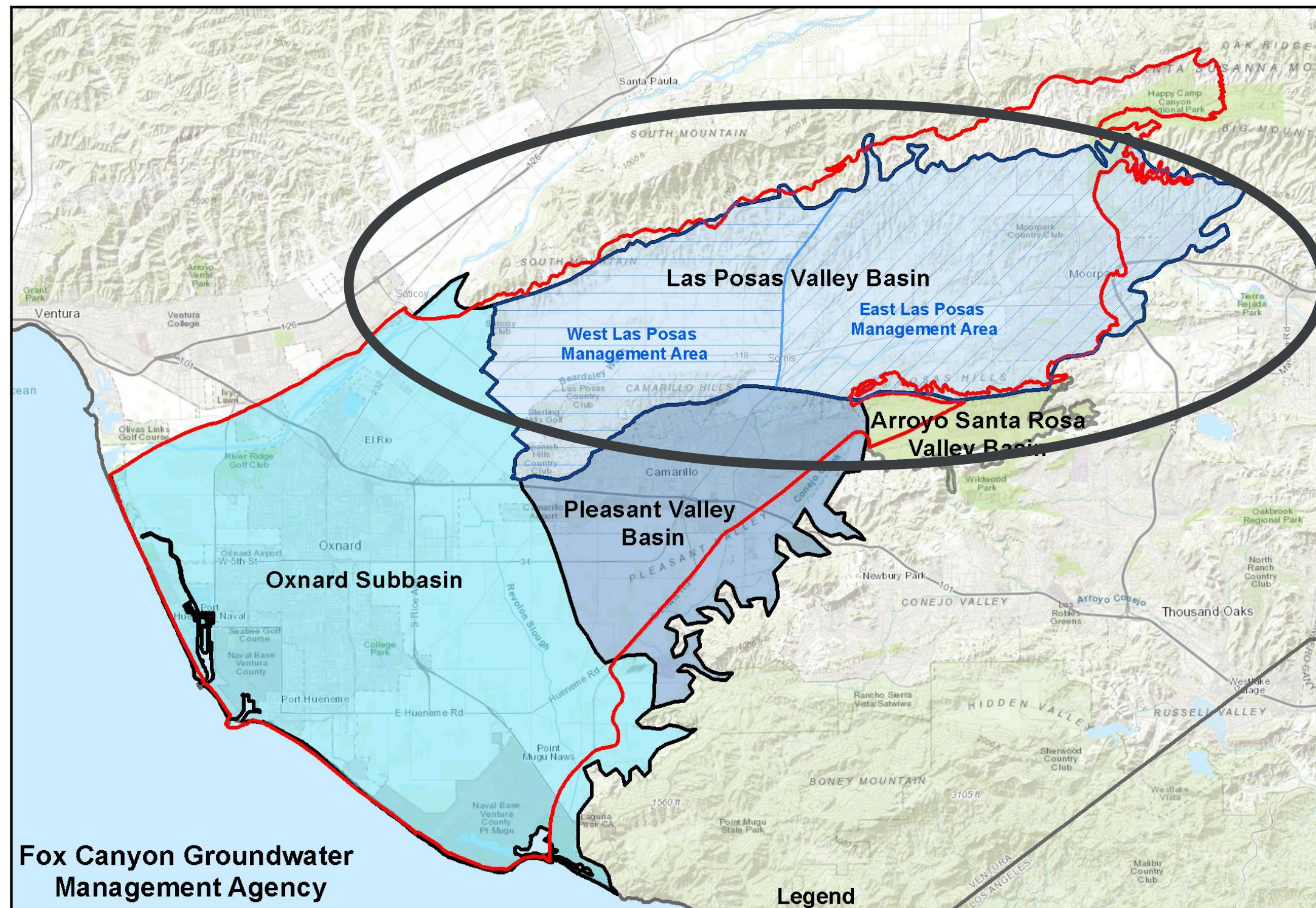
# Pleasant Valley State of Sustainability

- Model simulations estimate sustainable Yield for PV at ~11,000 acre feet
- Current annual groundwater production is around 14,000 acre feet
- Long term overdraft of around 3,000 acre feet

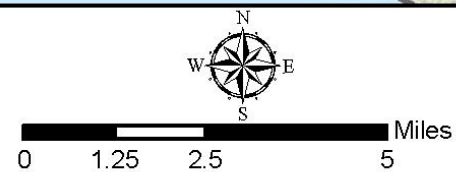


SOURCE:

FIGURE 2-4



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Fox Canyon  
Groundwater  
Agency Boundary

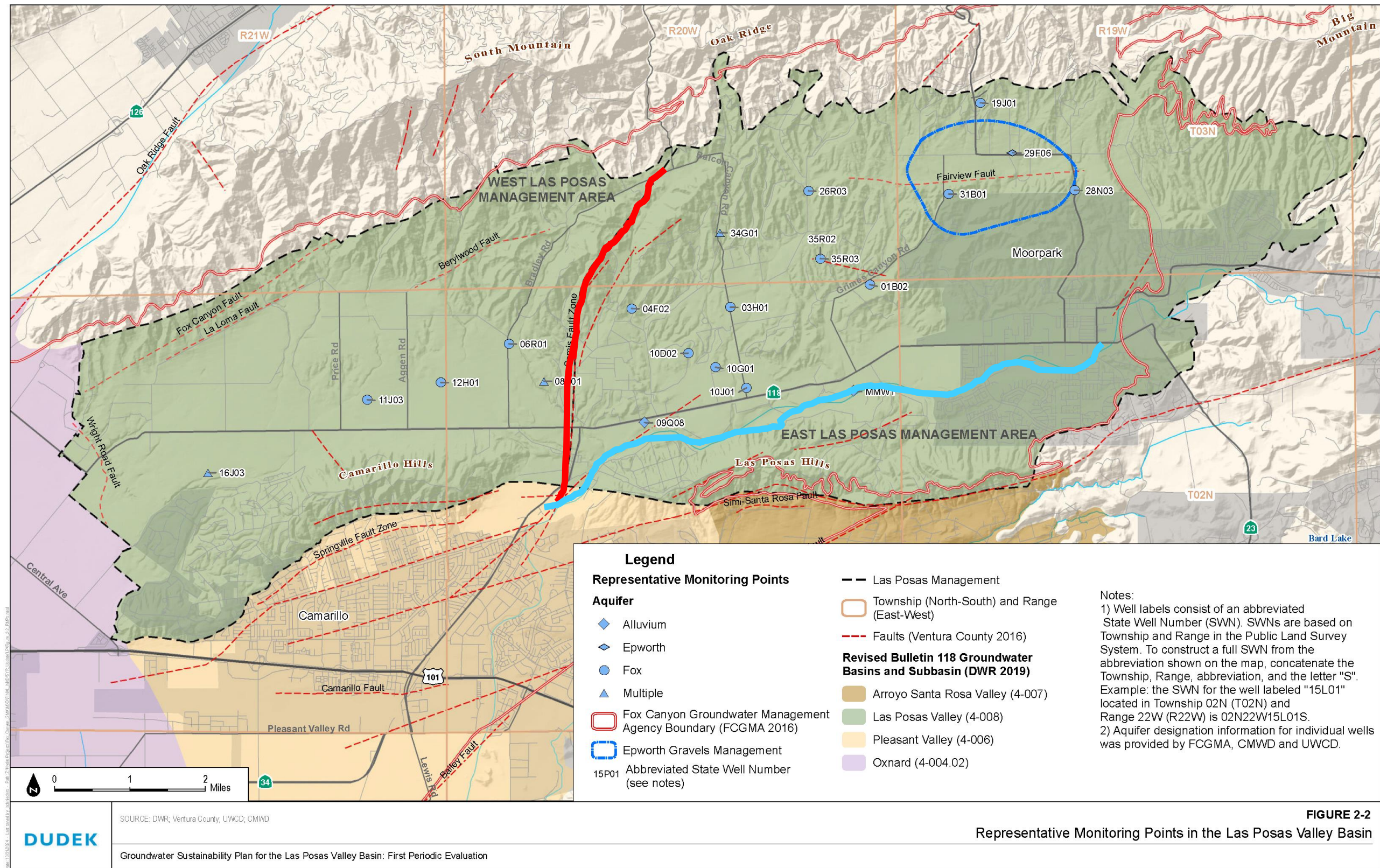
Ventura County  
Boundary

Oxnard Subbasin

Pleasant Valley  
Basin

Arroyo Santa Rosa

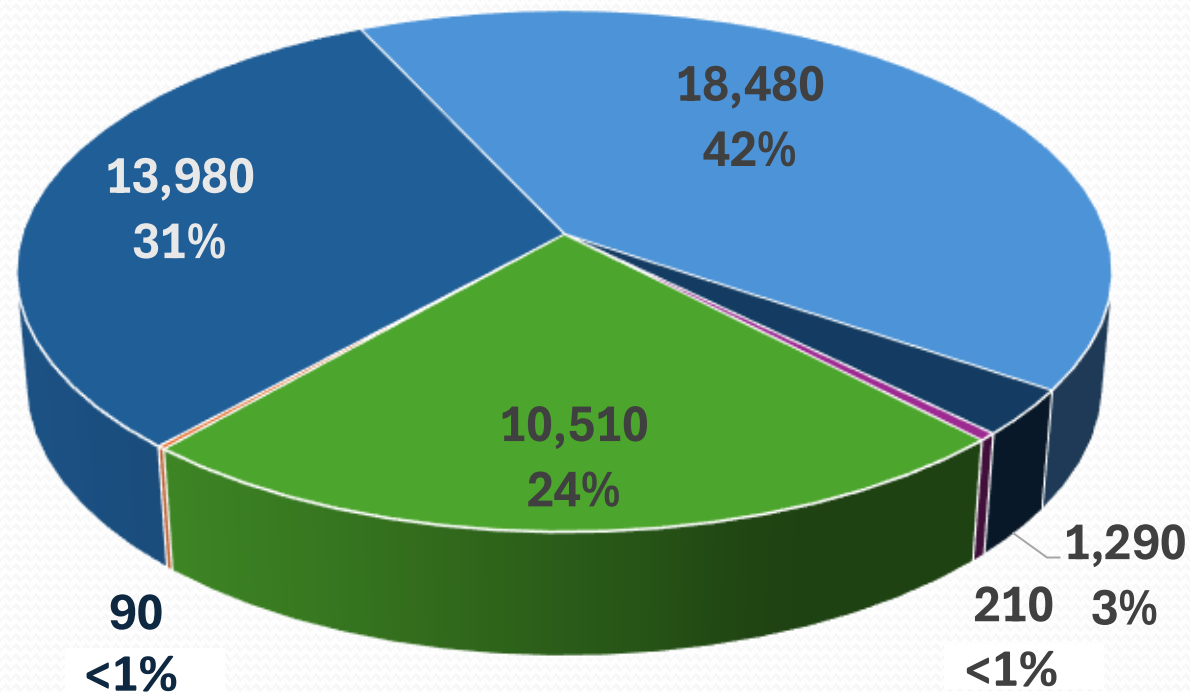
Las Posas Valley  
Basin



# Total Water Demand Las Posas Valley

Historical Average (1985-2015)  
Water Supply

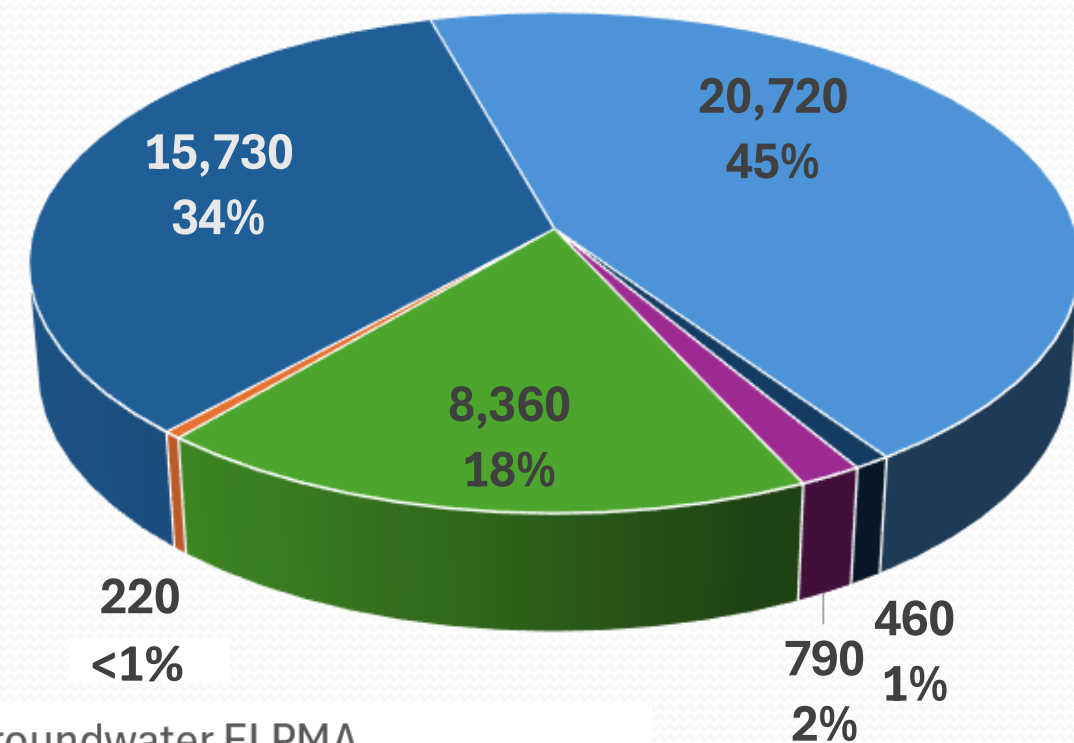
Total: 44,560 AFY



■ Groundwater WLPMA  
■ Groundwater Epworth Gravels  
■ CMWD Imported Water

Current Average (2016-2022)  
Water Supply

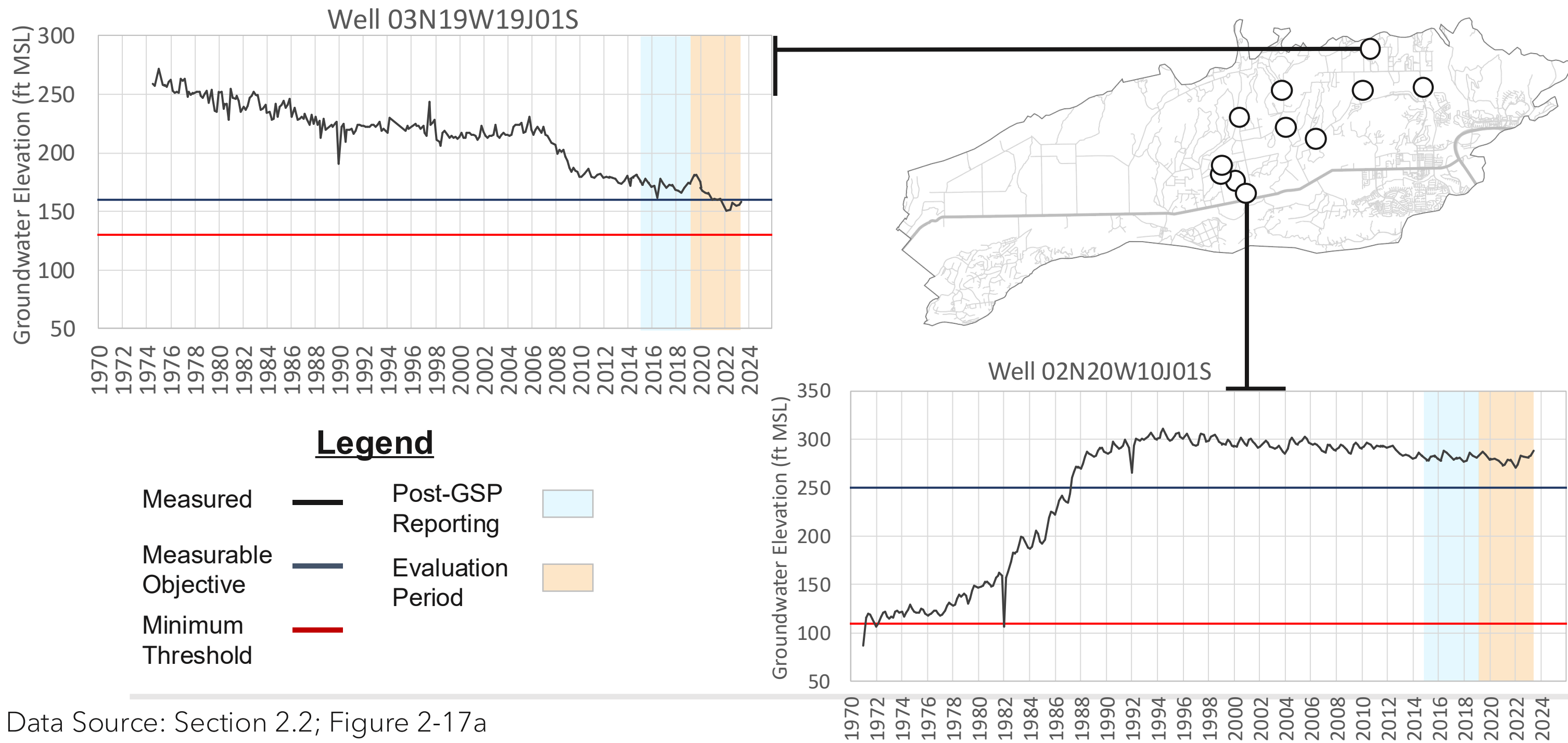
Total: 46,280 AFY



■ Groundwater ELPMA  
■ Recycled Water  
■ Camrosa Water District Deliveries

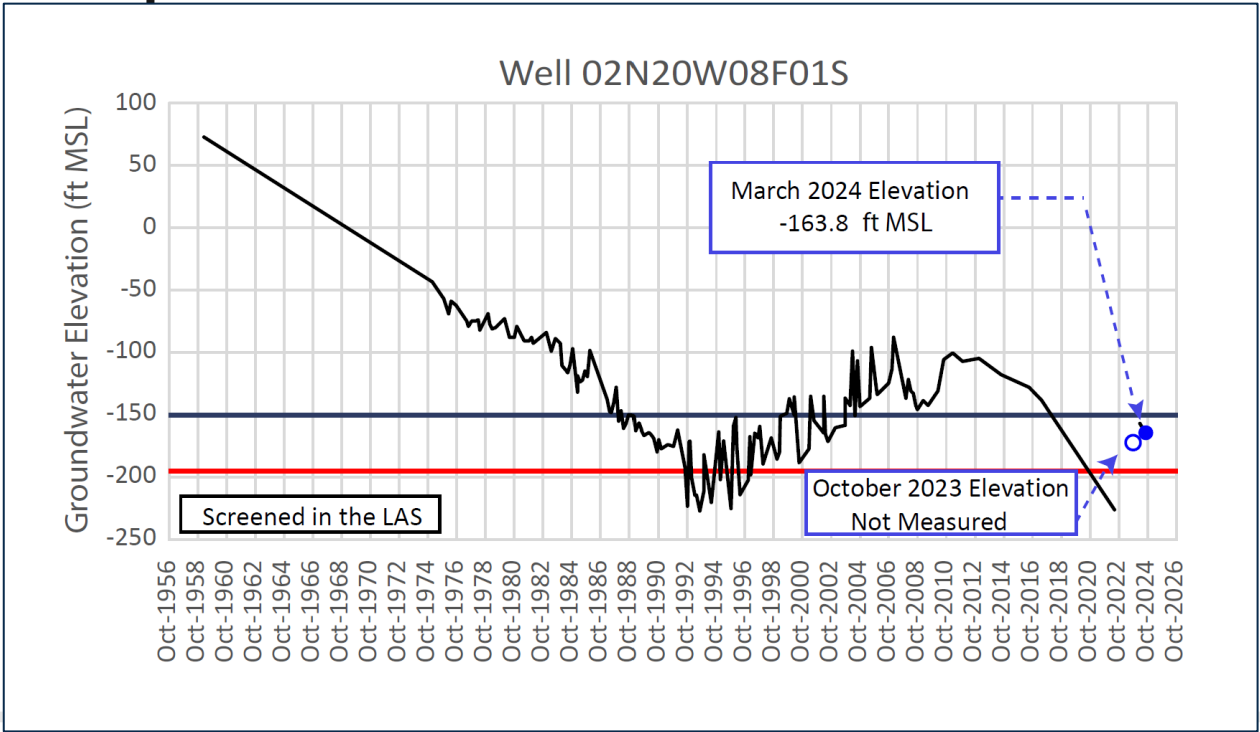
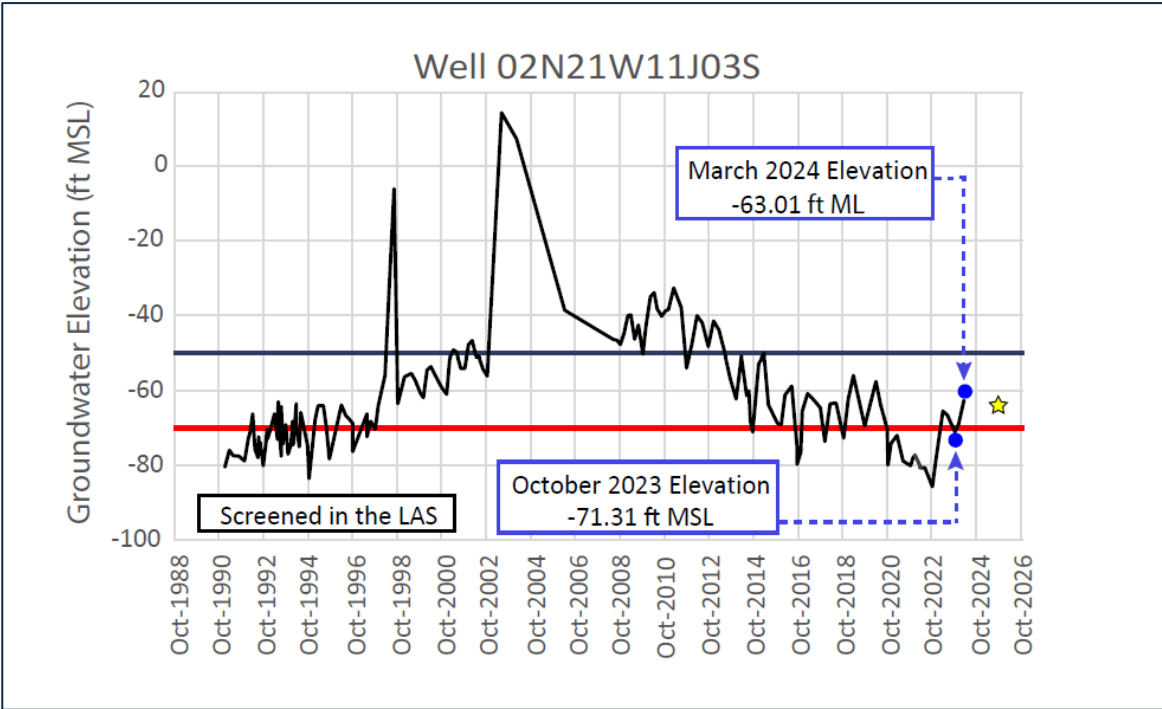
- All values are in acre-feet per year
- Data Source: Table ES-2 (DRAFT LPVB GSP Evaluation)

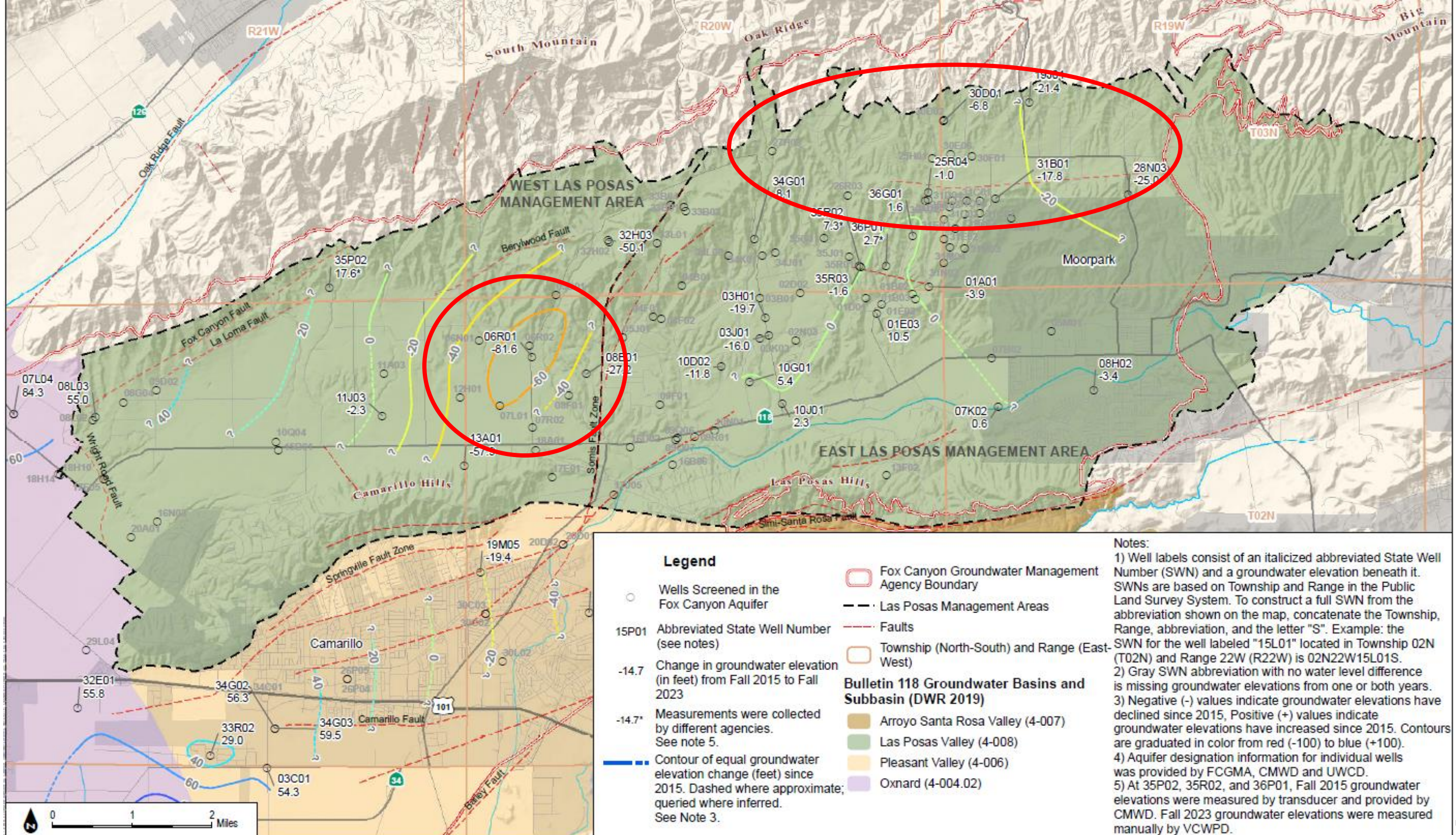
# East Las Posas Valley Basin Groundwater Elevation Changes



Data Source: Section 2.2; Figure 2-17a  
(Draft LPVB GSP Evaluation)

# West Las Posas Valley Basin: Current Groundwater Levels





SOURCE: DWR; Ventura County; UWCD; CMWD

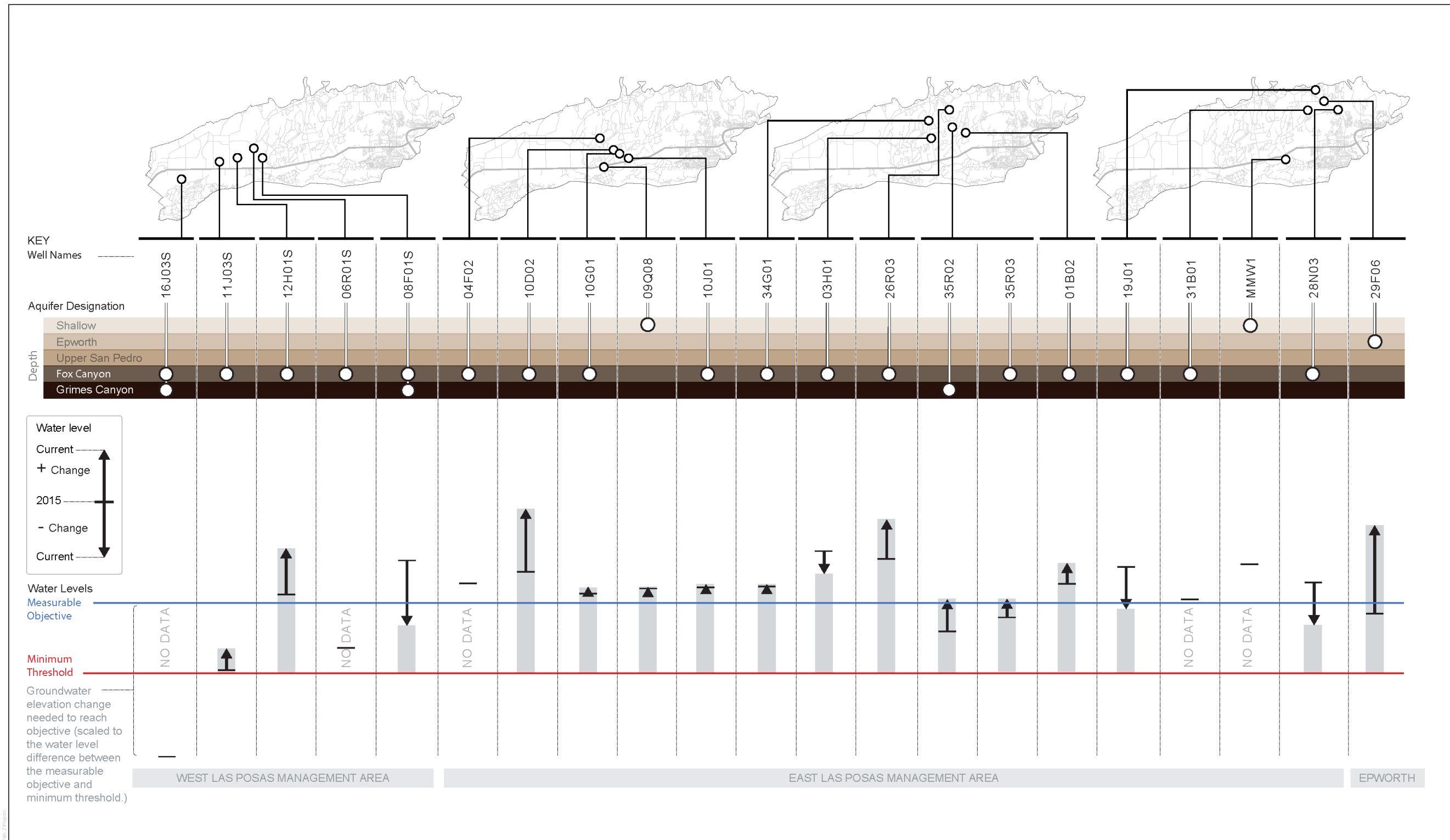
**DUDEK**

Groundwater Sustainability Plan for the Las Posas Valley Basin: First Periodic Evaluation

**FIGURE 2-7**  
Fox Canyon Aquifer - Groundwater Elevation Changes from Fall 2015 to 2023

# Las Posas Valley State of Sustainability

- Model simulations estimate sustainable Yield for LPV at ~19,000 acre feet for the East and ~11,000 acre feet for the west
- Current annual groundwater production is 35,000+ acre feet
- Adjudication set initial operating yield of 40,000 acre feet



SOURCE:

DUDEK

FIGURE 2-4  
Spring 2024 Groundwater Levels Relative to the Minimum Thresholds and Measurable Objectives

First Periodic Evaluation: Groundwater Sustainability Plan for the Las Posas Valley Basin

# Assessment of Progress Towards Sustainability

- The Oxnard Subbasin, Pleasant Valley and Las Posas Valley Basin are on track to meet their sustainability goals by 2040:
- This has been accomplished through:
  - Development of policy that allocates groundwater extractions in a manner consistent with the GSP and SGMA
  - Diversification of water supplies and reduction in groundwater production
  - Ongoing groundwater elevation and quality monitoring
  - Implementation of projects that address data gaps
  - Development, evaluation, and implementation of projects that increase water supplies and the sustainable yield of the OPV
  - LPV Adjudication

# Opportunities & Solutions

- Projects
- **Infrastructure Projects**
  - Pipelines for interconnection
- **Water Supply Projects**
  - Recycled water
  - Stormwater capture (recharge limited by clays in many areas)
  - Imported water
  - Brackish / saline desalting
- **Mitigation Projects**
  - Seawater intrusion barriers
- Management Actions
- Stakeholder Engagement
- Regional Partnerships
- Water Market
- **Extraction Reductions - least preferred**

**\$15.2 Million** SGM Grant award to FCGMA for projects in Oxnard & PV Basins

- Camarillo Stormwater Diversion Feasibility Study
- UWCD Ferro-Rose Recharge Basin
- UWCD Recycled Water Interconnection Pipeline
- UWCD Monitoring Wells
- PVCWD Recycled Water Connection Pipeline
- PVCWD Private Reservoir Program
- FCGMA Monitoring Wells – more and better data

# Questions

Contact info

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