Fox Canyon Groundwater Management Agency

First Periodic GSP Evaluation for the Oxnard and Pleasant Valley Basins

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Background Information

The Periodic Evaluation Does:

- Summarize new information
- Evaluate groundwater conditions
- Address DWR Recommended Corrective Actions
- Evaluate the sustainable management criteria
- Evaluate progress towards sustainability

The Periodic Evaluation Does Not:

- Establish new management strategies or policy
- Amend the GSP
  - FCGMA will be amending the Oxnard Subbasin and Pleasant Valley Basin GSPs

Evaluation Content

Technical Components

1) Significant New Information
2) Current Groundwater Conditions
3) Status of Projects and Management Actions
4) Basin Setting Review
5) Updated Numerical Modeling
6) Revisions to the Sustainable Management Criteria
7) Monitoring Network

Policy and Engagement

8) Agency Actions
9) Outreach, Engagement, and Coordination
10) Other Information (Legal Challenges, Consideration of Adjacent Basins)
11) Summary of Proposed GSP Revisions or Amendments

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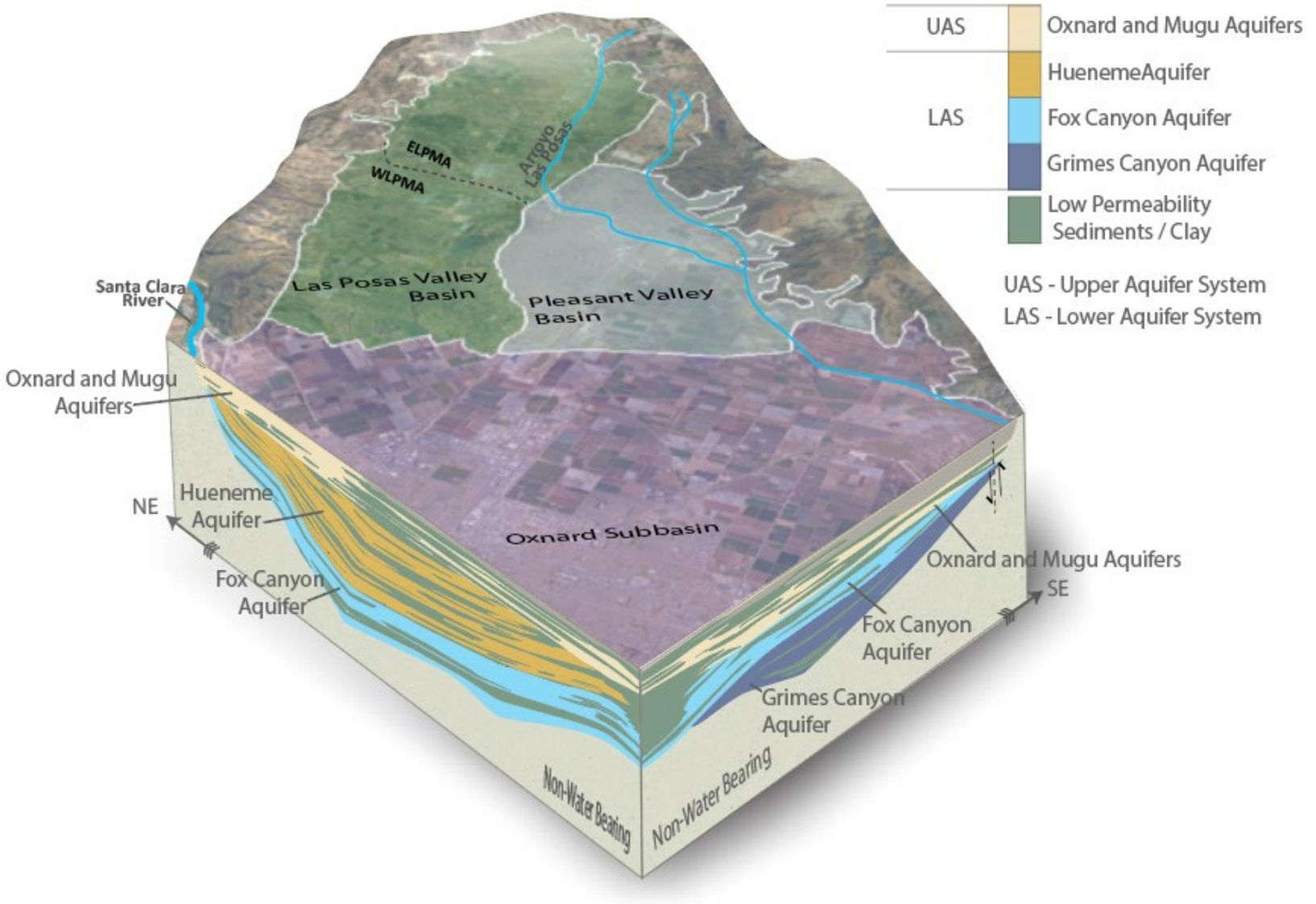
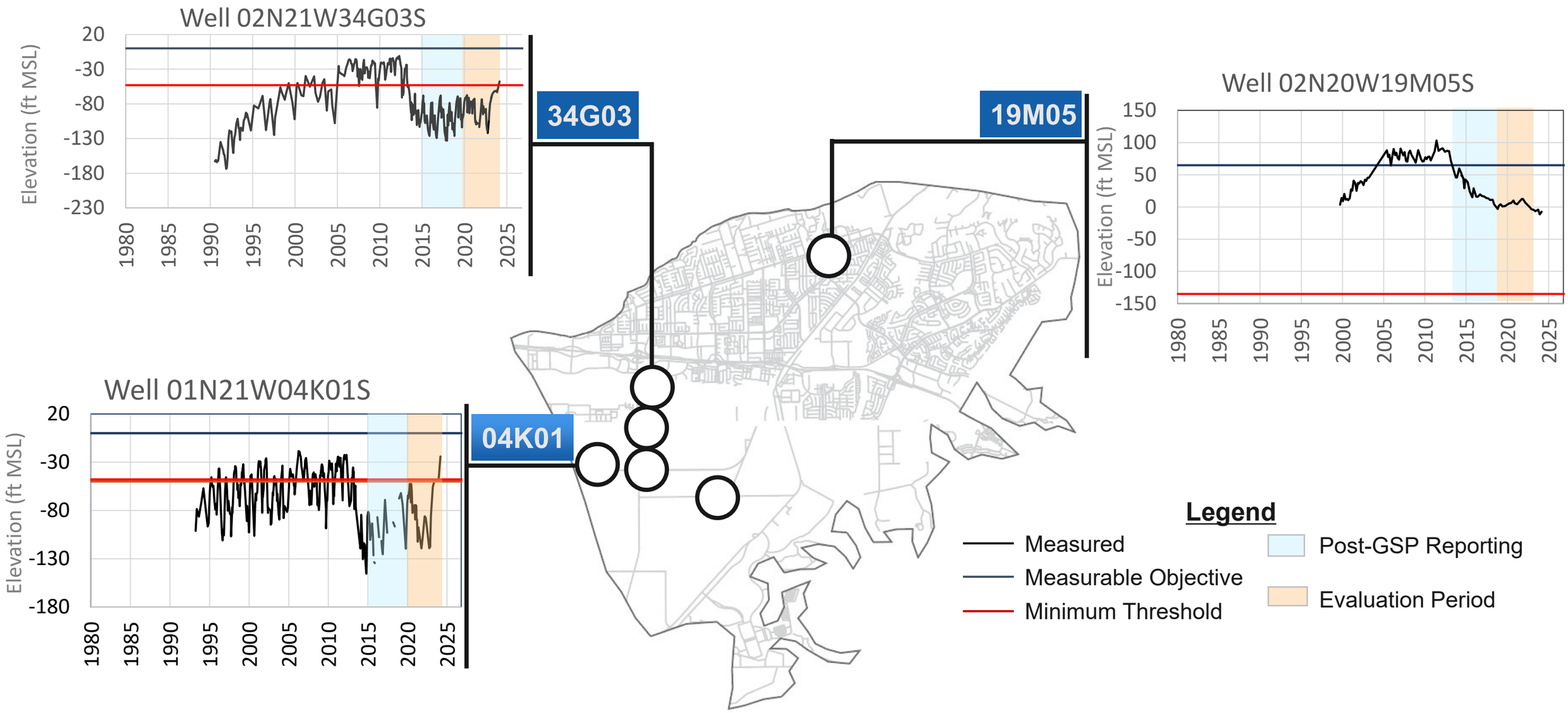
Current Conditions – Undesirable Results in the OPV

SUSTAINABILITY INDICATORS

- Groundwater Elevation
- Groundwater in Storage
- Seawater Intrusion
- Groundwater Quality
- Land Subsidence
- Interconnected Surface Water and Groundwater

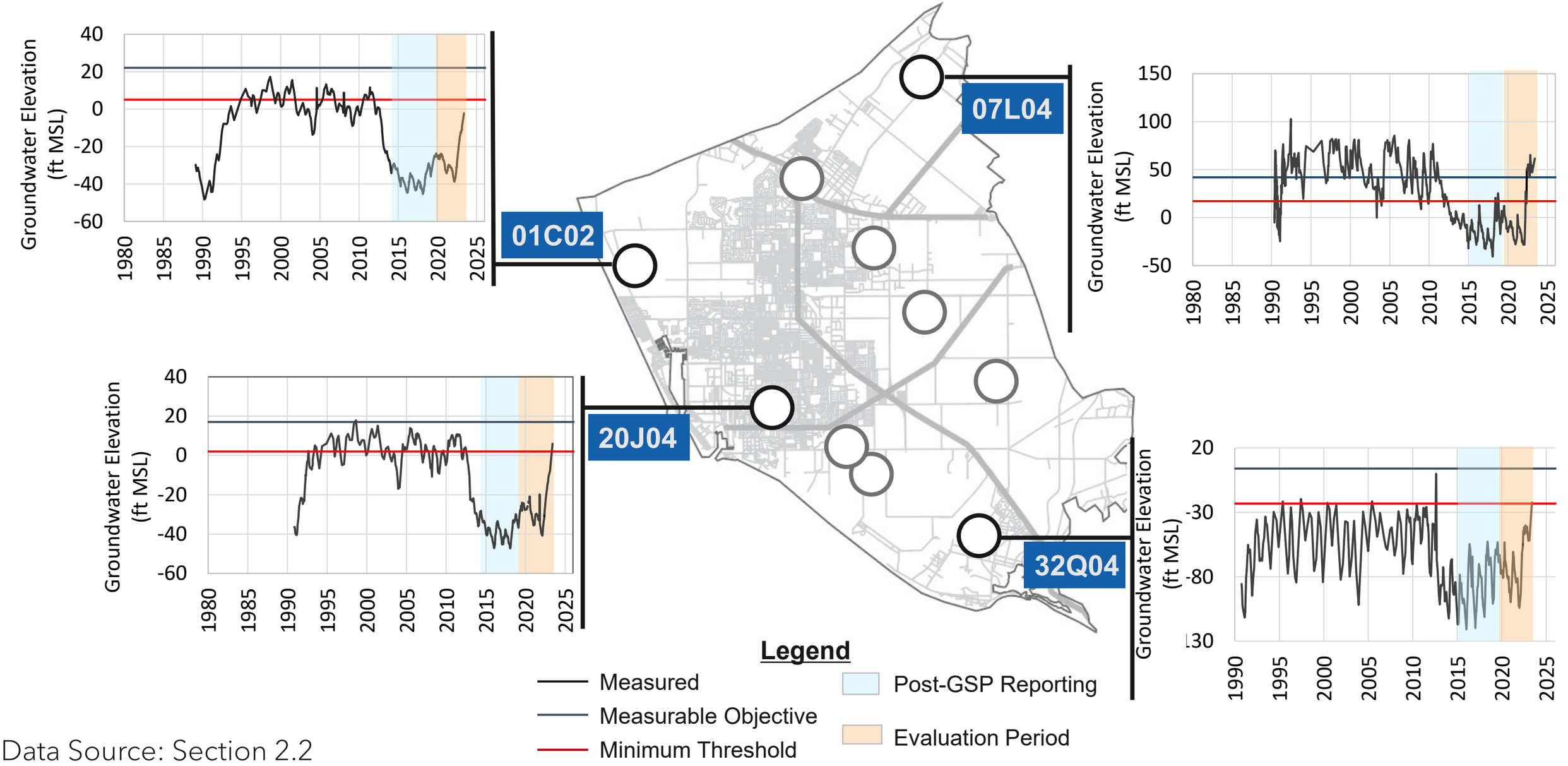


Pleasant Valley Basin Groundwater Levels



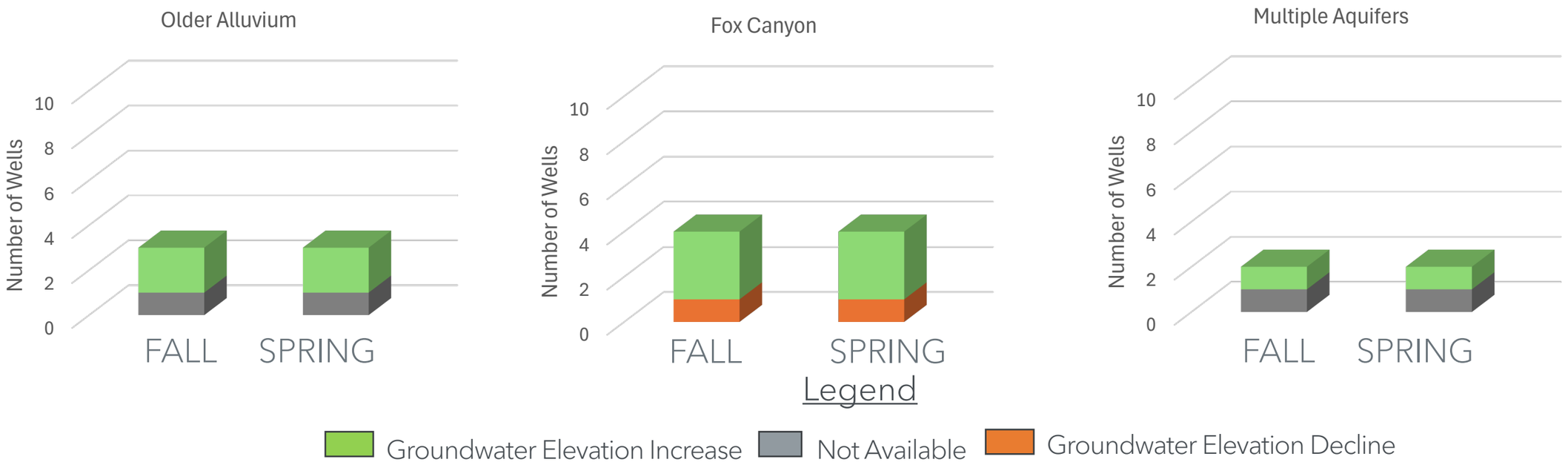
Data Source: Section 2.2 (Draft Pleasant Valley GSP Evaluation)

Oxnard Subbasin Groundwater Levels



Data Source: Section 2.2
(Draft Oxnard Subbasin GSP Evaluation)

Summary of Groundwater Elevation Changes: Pleasant Valley

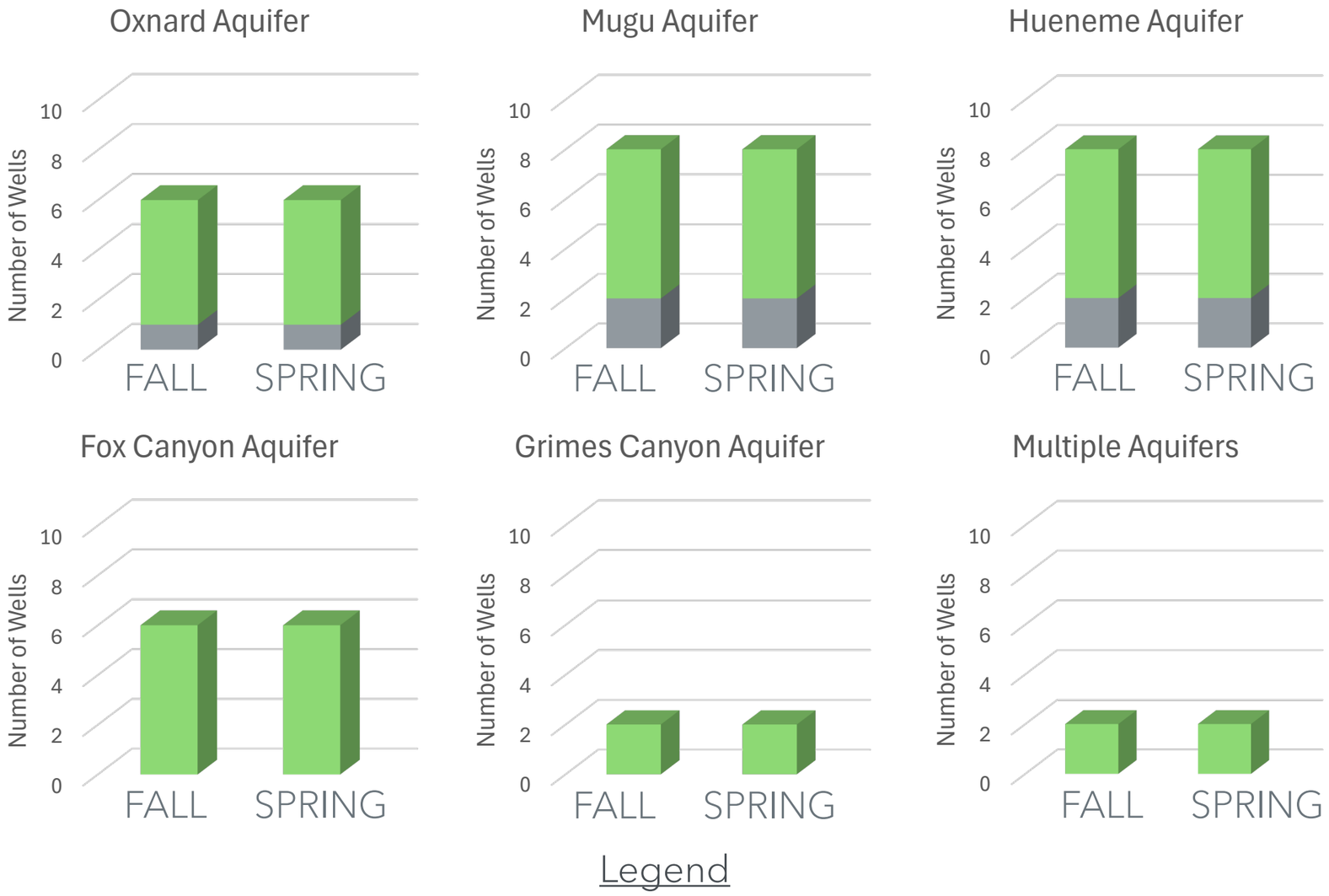


For Wells with Both Spring 2020 and 2024 Measurements:

- Older Alluvium
  - Increase of 26 to 36 feet
- Fox Canyon Aquifer
  - Increase of 20 to 24 feet in 3 wells
  - Decrease of 13 feet in one well
- Multiple Aquifers
  - Increase of 37 feet

Source: Section 2.2 and Table 2-1 (Draft Pleasant Valley GSP Evaluation)

Summary of Groundwater Elevation Changes: Oxnard

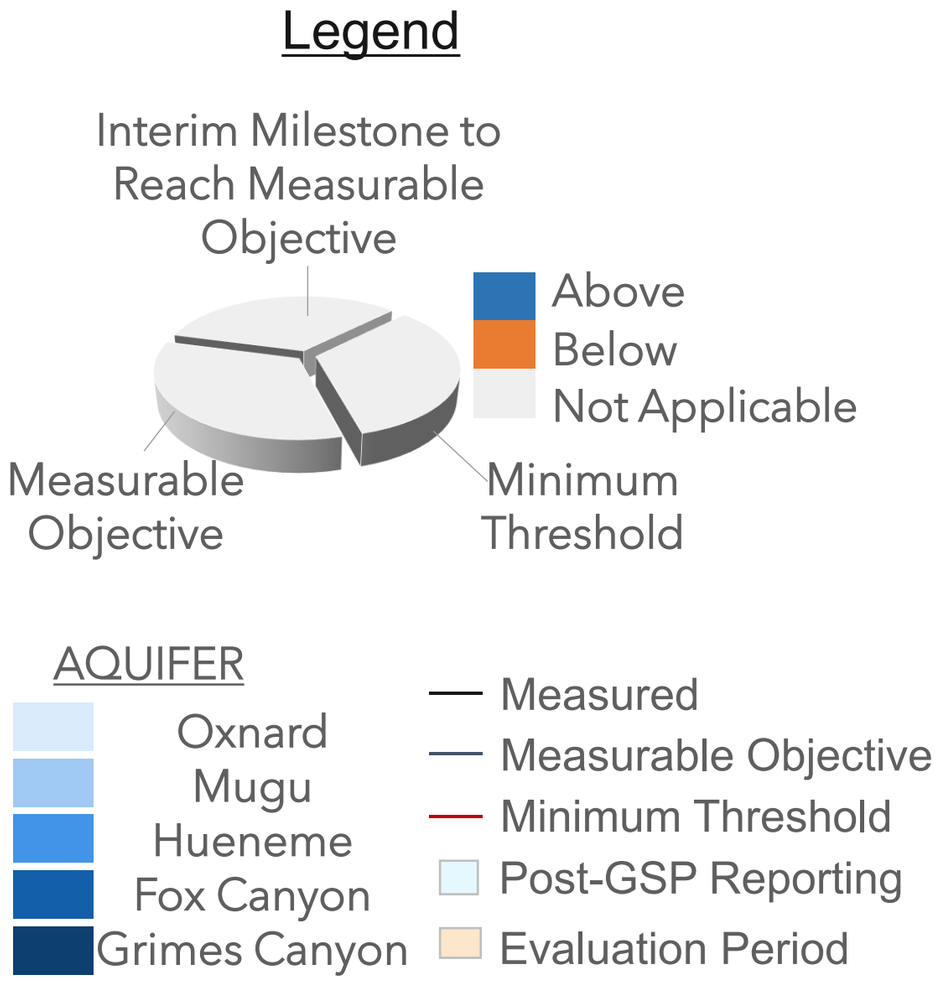


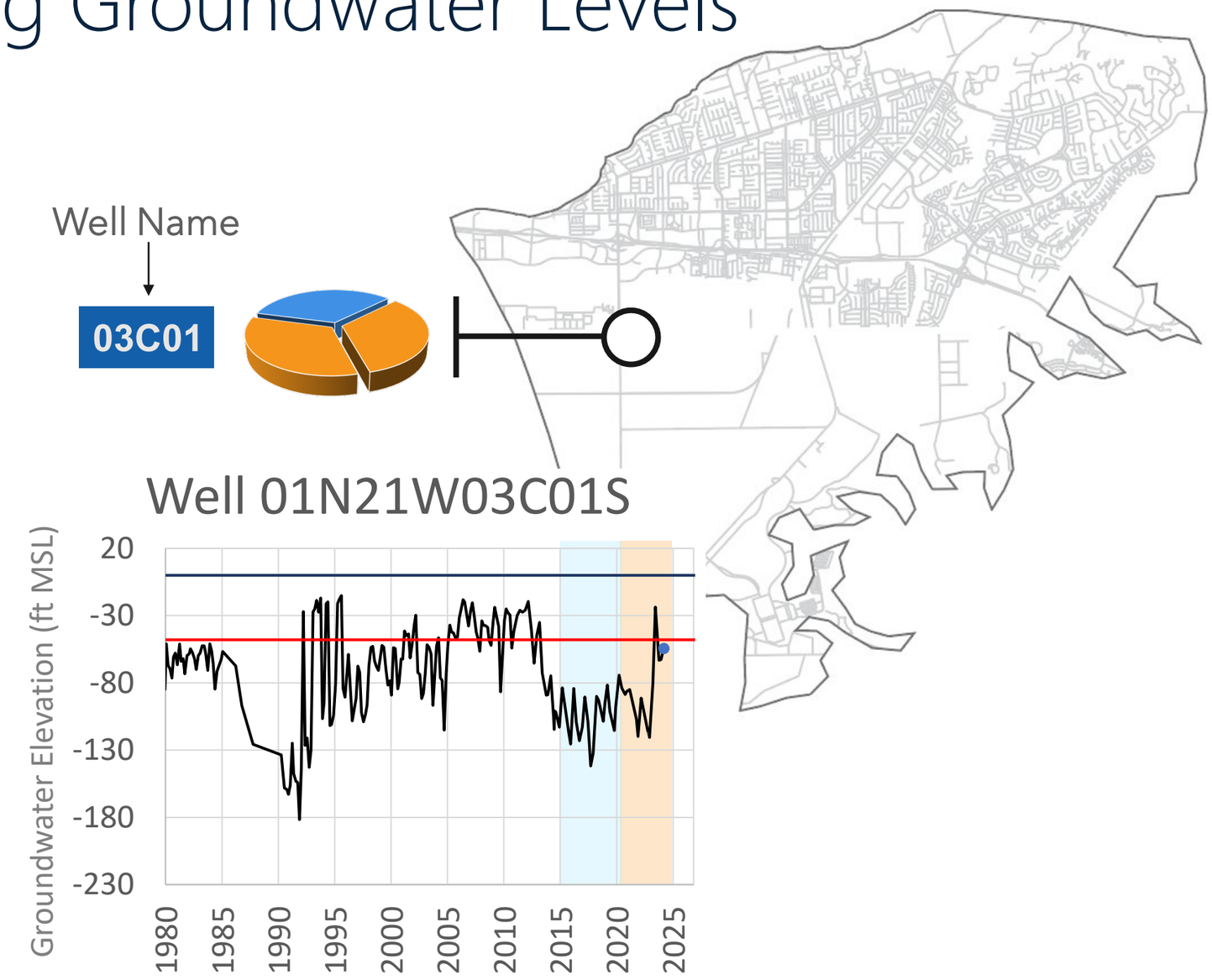
For Wells with Both Spring 2020 and 2024 Measurements:

- Oxnard Aquifer
  - Increase of 11 to 27 feet
- Mugu Aquifer
  - Increase of 27 to 83 feet
- Hueneme Aquifer
  - Increase of 33 to 61 feet
- Fox Canyon Aquifer
  - Increase of 26 to 56 feet
- Grimes Canyon Aquifer
  - Increase of 41 to 42 feet
- Multiple Aquifers
  - Increase of 50 to 76 feet

Source: Section 2.2 and Table 2-1 (Draft Oxnard GSP Evaluation)

Pleasant Valley 2024 Spring Groundwater Levels



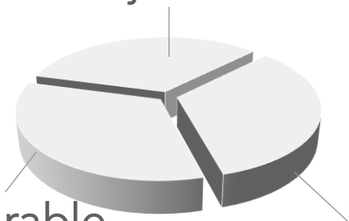


Data Source: Section 2.2
(Draft Pleasant Valley Basin GSP Evaluation)

Pleasant Valley 2024 Spring Groundwater Levels

Legend

Interim Milestone to Reach Measurable Objective



Measurable Objective

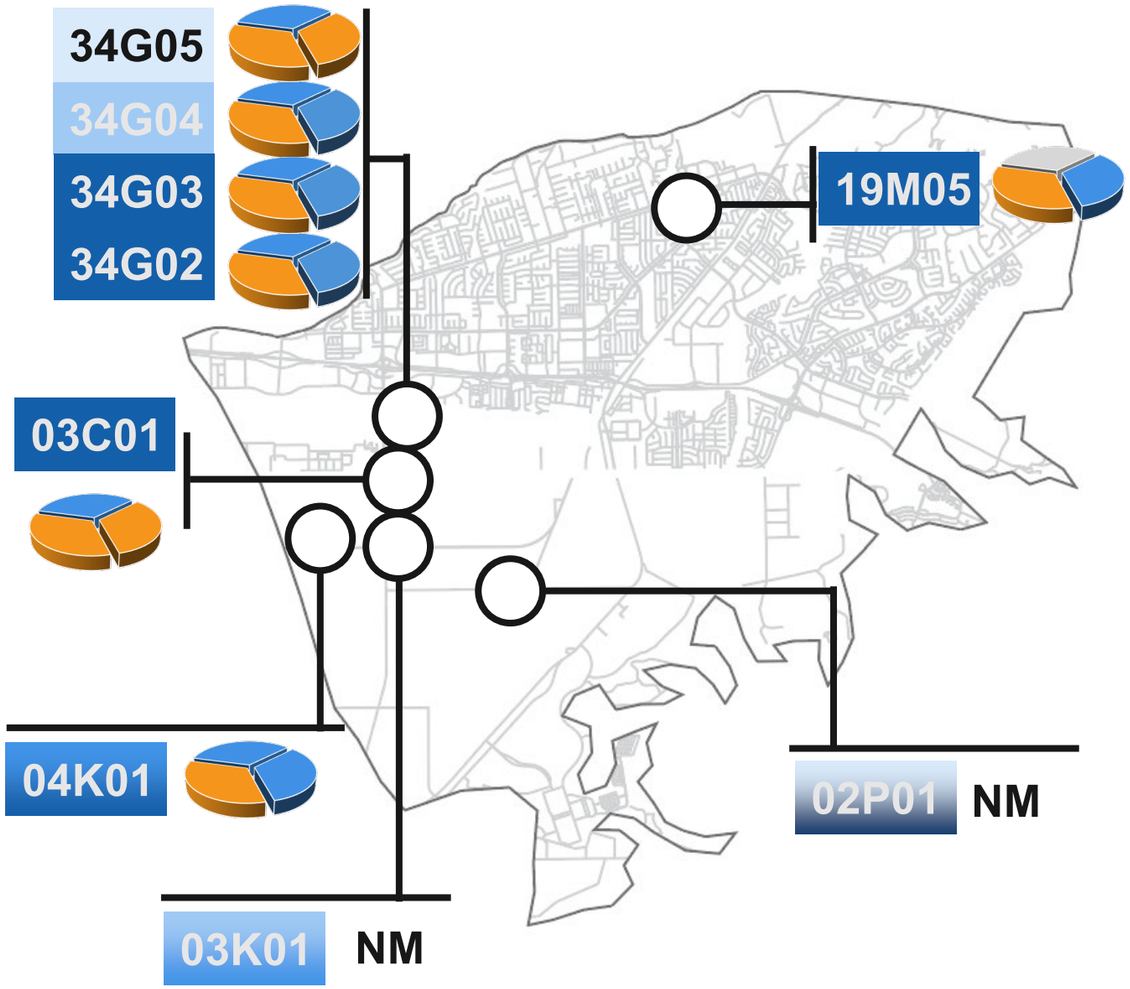
Minimum Threshold

- Above
- Below
- Not Applicable

AQUIFER

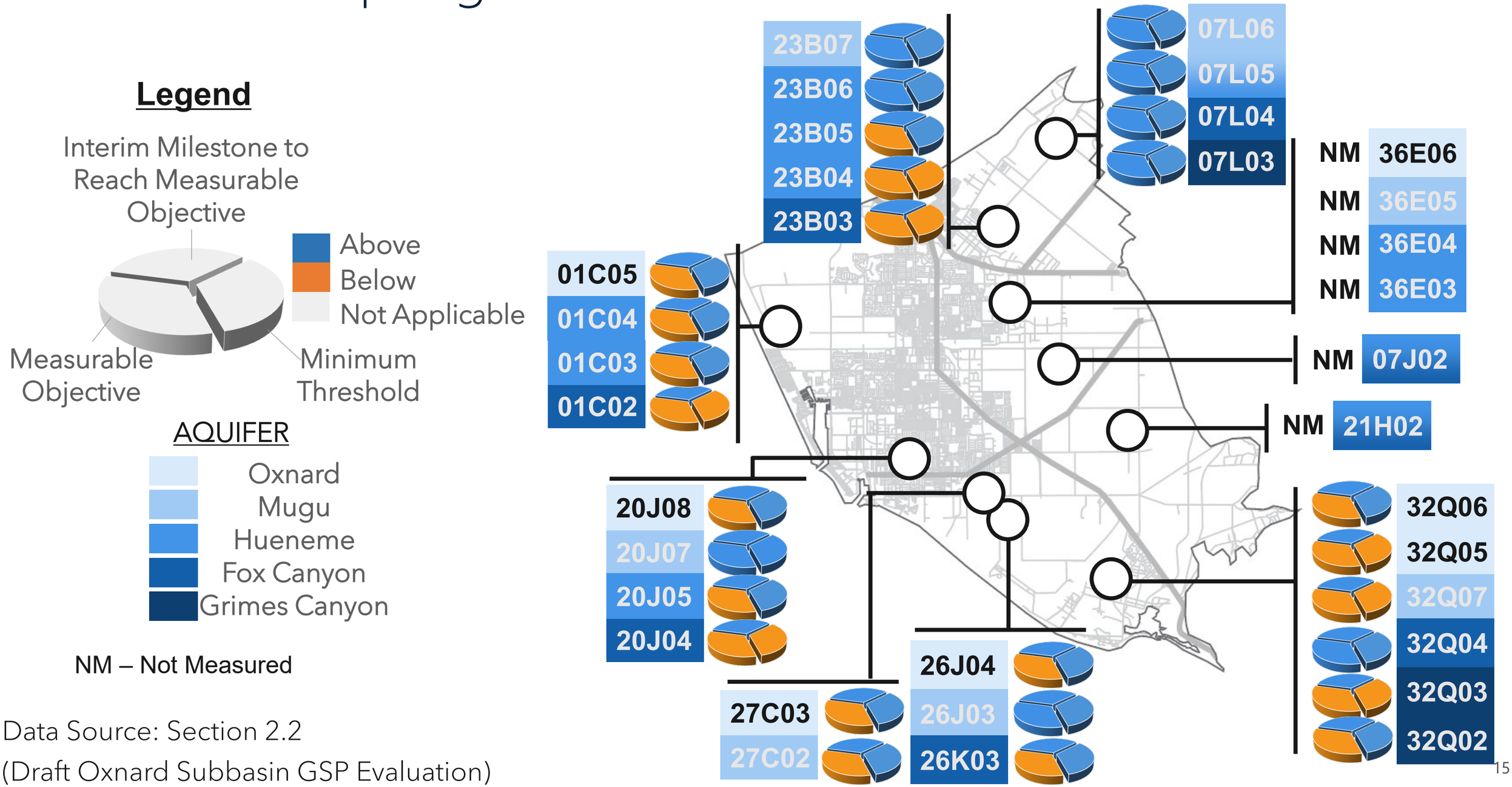
- Oxnard
- Mugu
- Hueneme
- Fox Canyon
- Grimes Canyon

NM – Not Measured



Data Source: Section 2.2
(Draft Pleasant Valley Basin GSP Evaluation)

Oxnard 2024 Spring Groundwater Levels



Data Source: Section 2.2
(Draft Oxnard Subbasin GSP Evaluation)

Undesirable Results

Groundwater Elevations

- In **2015**, groundwater elevations were lower than the minimum thresholds at **all** key wells
- Groundwater elevations were generally below the interim milestones and minimum thresholds through water year 2022

Seawater Intrusion

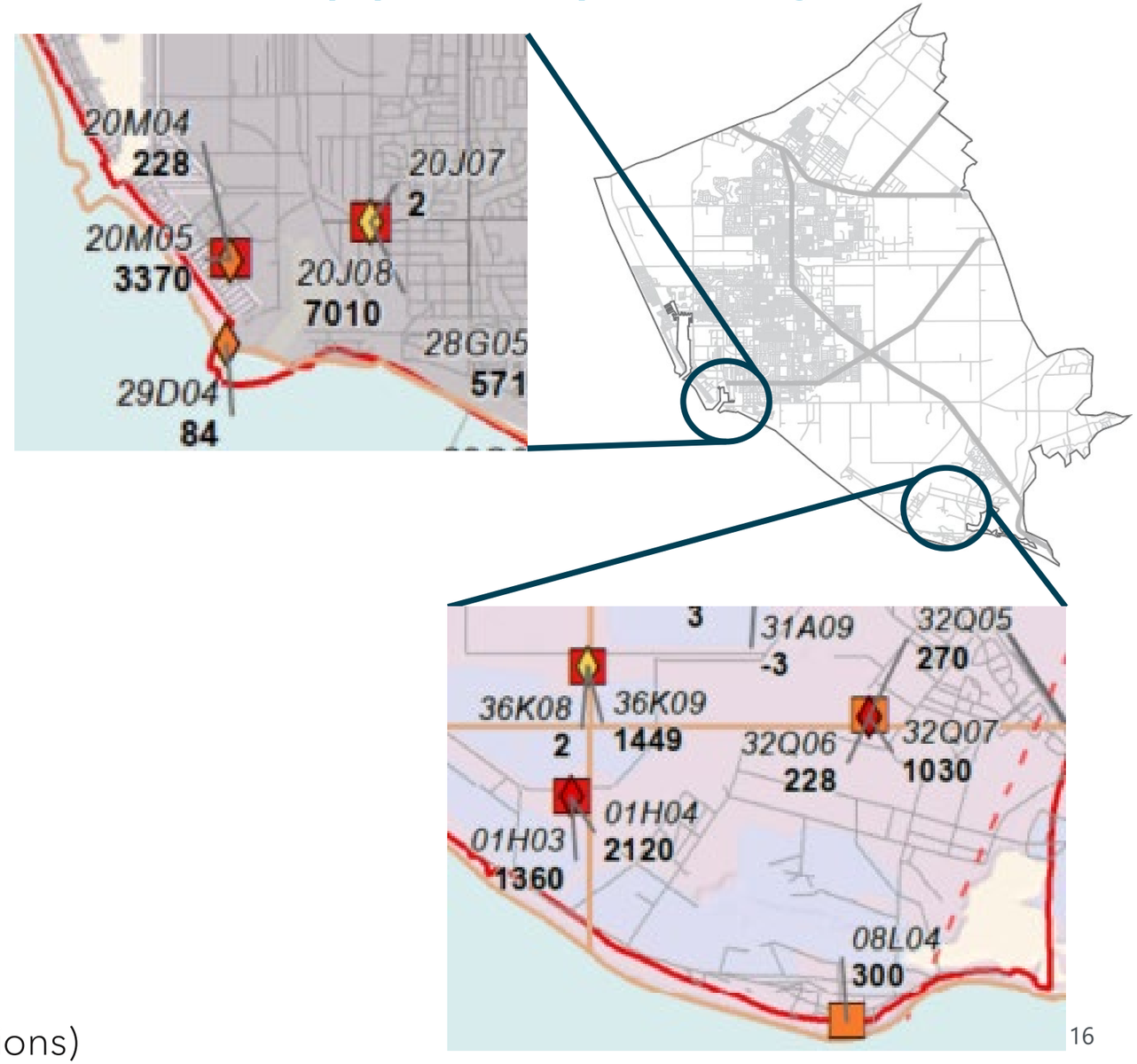
- Chloride concentrations along the coastline increased during the evaluation period
- Model estimates of seawater intrusion:
  - 113,000 AF of intrusion since 2015
  - 66,800 AF of intrusion since 2020

These conditions were anticipated in the GSP

Data Source: Section 2

(Draft Oxnard Subbasin and Pleasant Valley Basin GSP Evaluations)

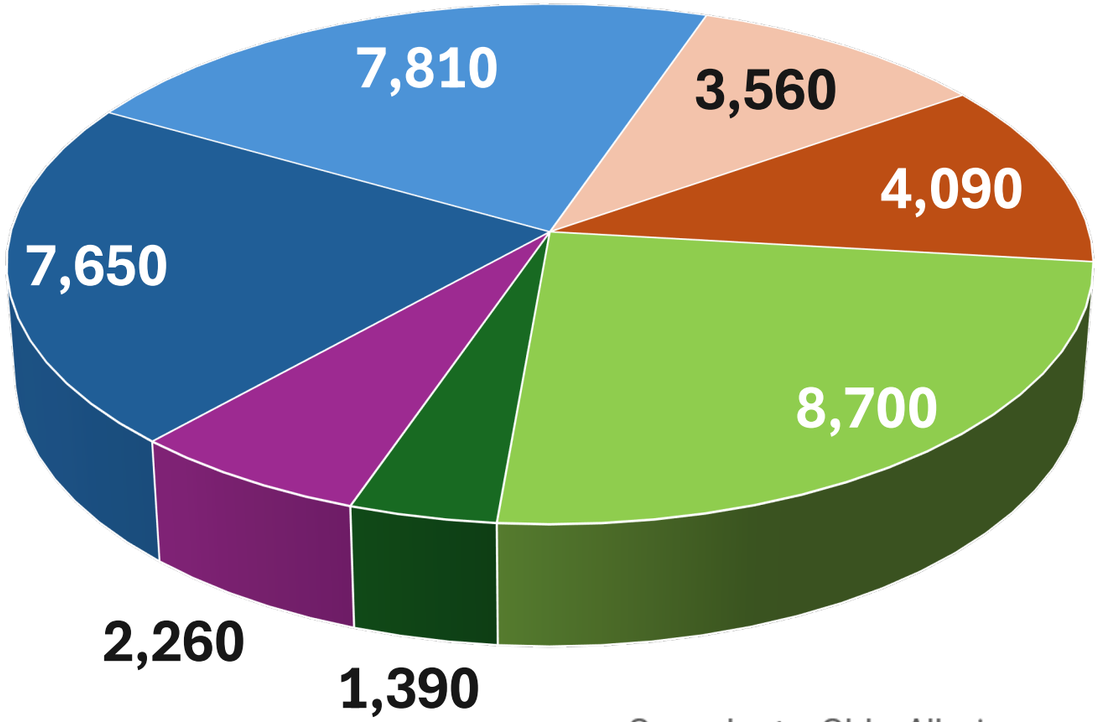
Change in Chloride Concentrations in the Upper Aquifer System



Total Water Demand: Pleasant Valley Basin

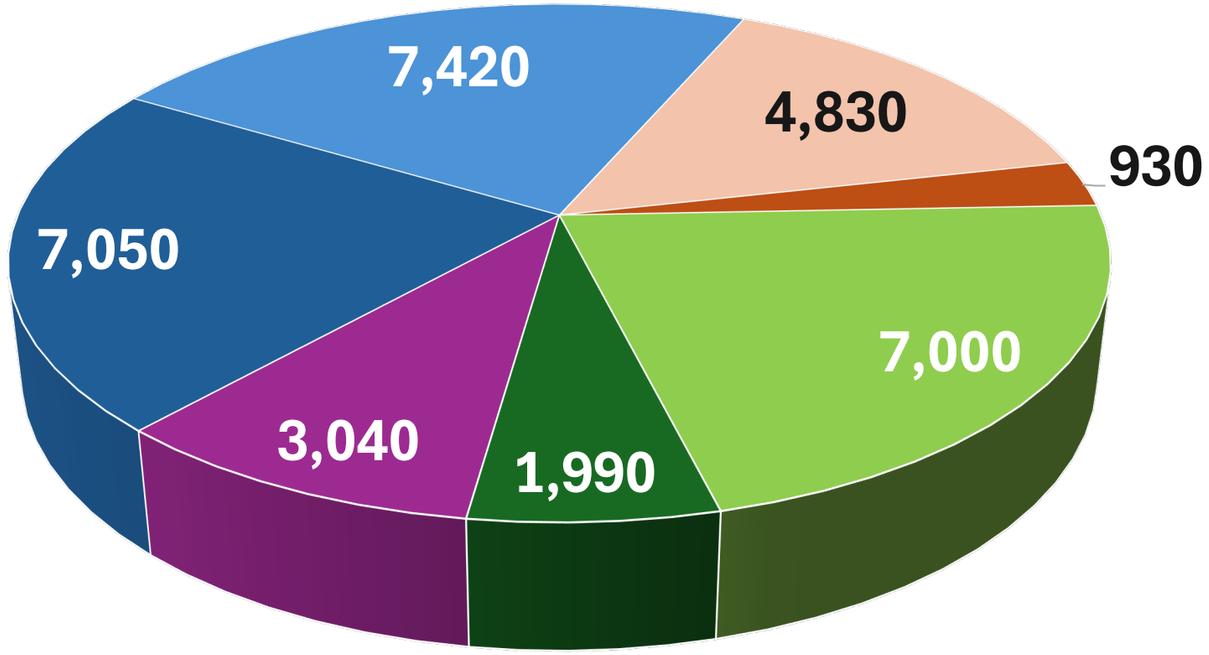
Historical (1985 – 2015) Water Demand

Total: 35,460 AFY



Current (2016 - 2022) Water Demand

Total: 32,260 AFY



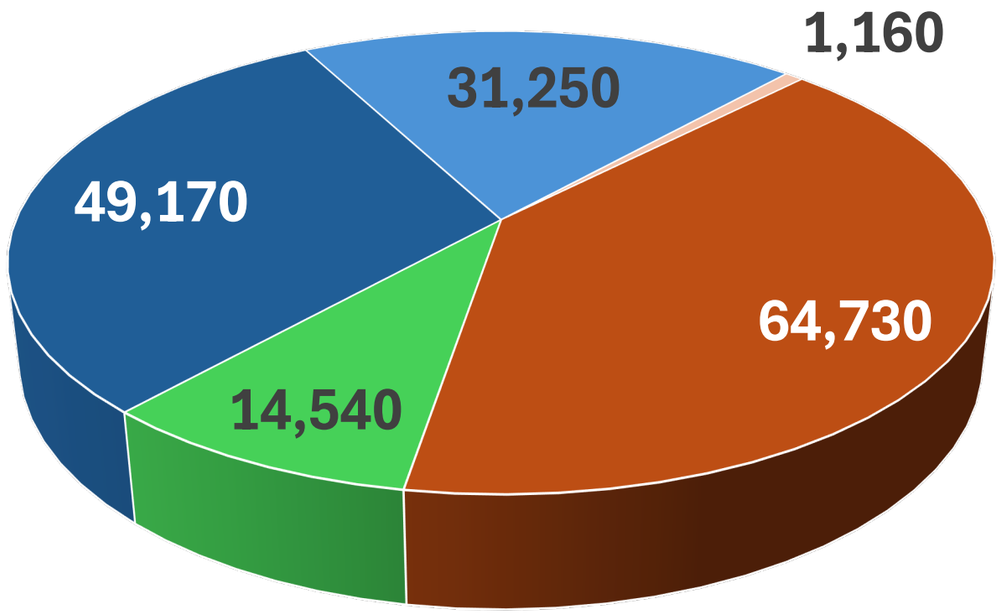
Legend

- Groundwater Older Alluvium
- Groundwater Lower Aquifer System
- Conejo Creek
- Santa Clara River
- Imported From CMWD
- Imported Groundwater
- Recycled Water

Total Water Demand: Oxnard Subbasin

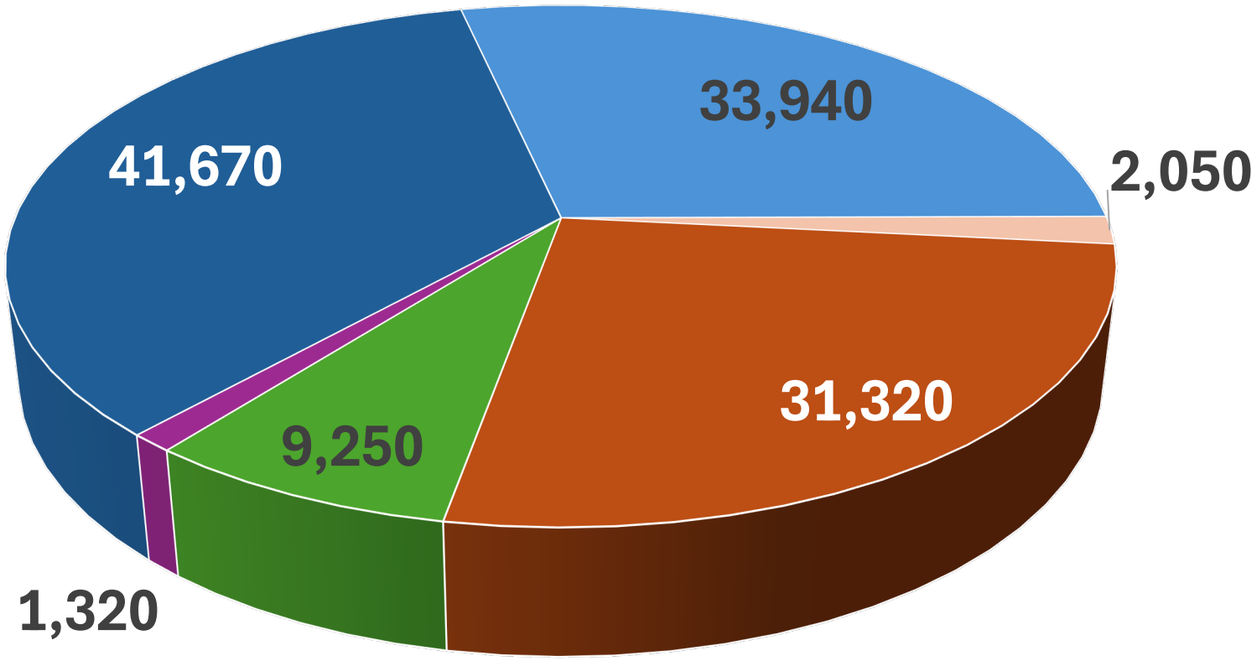
Historical (1985 – 2015) Water Demand

Total: 160,850 AFY



Current (2016 - 2022) Water Demand

Total: 119,550 AFY



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

Updated Sustainable Yield

Future Baseline

Updated pumping and expanded suite of projects

- Reflects recent pumping trends
- Includes projects that are currently funded and under construction in the LPVB and OPV

No New Projects

Sustainable pumping rate

- Includes projects currently funded and under construction in the LPVB and OPV

Basin Optimization

Alternative pumping rate

- Evaluates the effects of shifting pumping across the Oxnard Subbasin on the sustainable yield of the OPV and West Las Posas Management Area

Projects

Integrates Management Actions and New Projects

- Adds future projects that are likely to be implemented
- Evaluates the impacts of demand reduction through voluntary temporary fallowing

Projects with EBB

Shifts the management framework

- Operation of UWCDs Extraction Barrier Brackish (EBB) water project

Data Source: Section 5
(Draft Oxnard Subbasin and Pleasant Valley Basin GSP Evaluations)

Updated Sustainable Yield: New Projects included in the Modeling

Project Type	Project Name	Modeling Scenario	Basin
Surface Water	Freeman Diversion Expansion	All	OPV
Imported Water	Supplemental SWP purchase	All	OPV
Recycled Water	Camrosa Recycled Water Deliveries to PVCWD*	All	OPV
	Camarillo Recycled Water Deliveries to PVCWD*	All	OPV
Brackish Water	Extraction Barrier and Brackish Water Treatment	Projects with EBB	OPV

- Modeling also included revisions to Projects that were simulated in the GSP:
  - North Pleasant Valley Groundwater Desalter Projects
  - City of Oxnard AWPF Deliveries
  - Conejo Creek Project
  - Purchase of Imported Water from CMWD for Basin Replenishment (In-Lieu deliveries in the West Las Posas Management Area of the Las Posas Valley Basin)

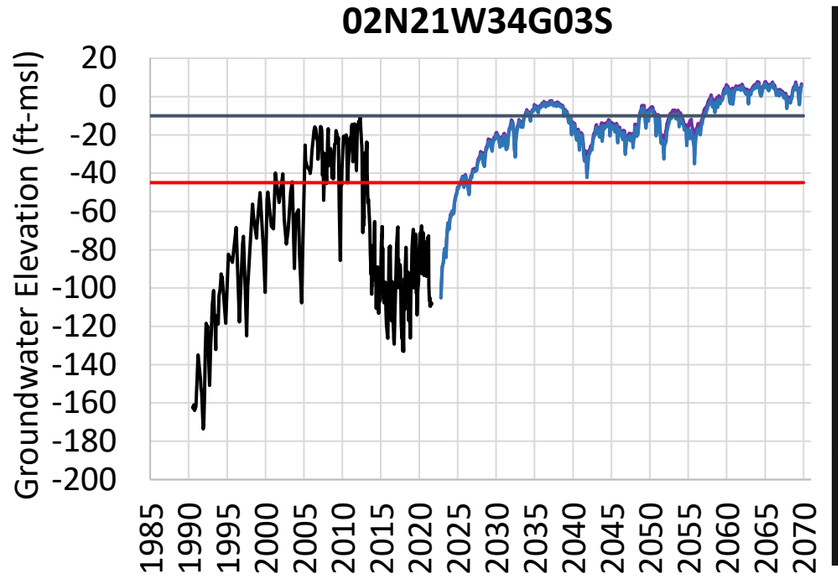
Data Source: Section 5

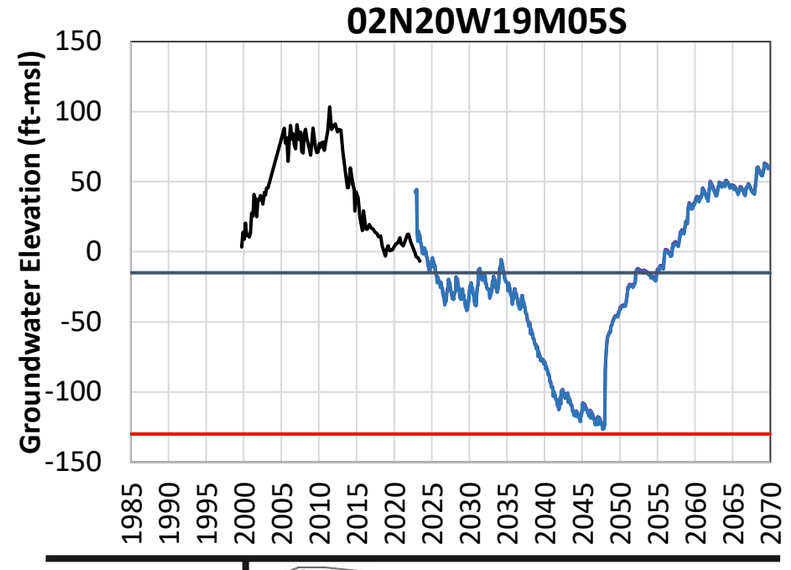
(Draft Oxnard Subbasin and Pleasant Valley Basin GSP Evaluations)

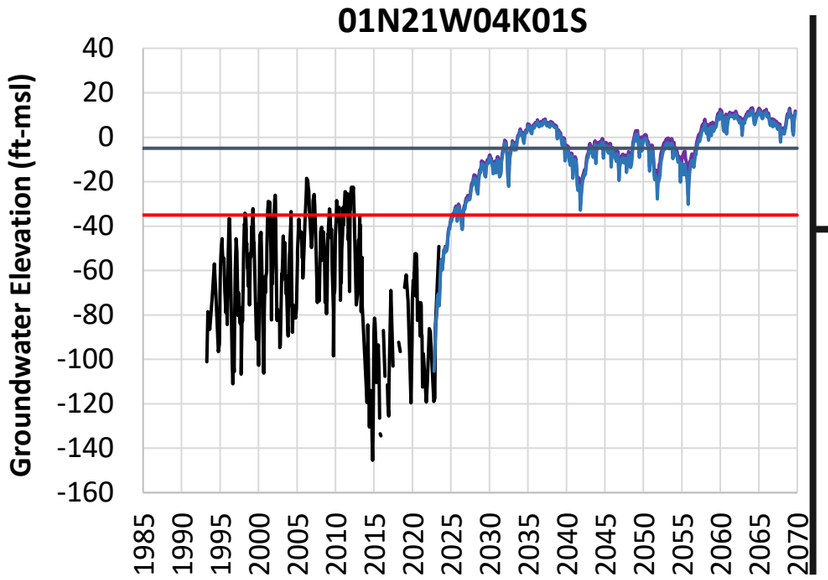
Pleasant Valley Basin Groundwater Levels

Sustainable yield metrics

- Avoid chronic lowering of groundwater levels across the PVB
- Provide flexibility for operation of the North Pleasant Valley Groundwater Desalter Project
- Support sustainability in the adjacent Oxnard Subbasin





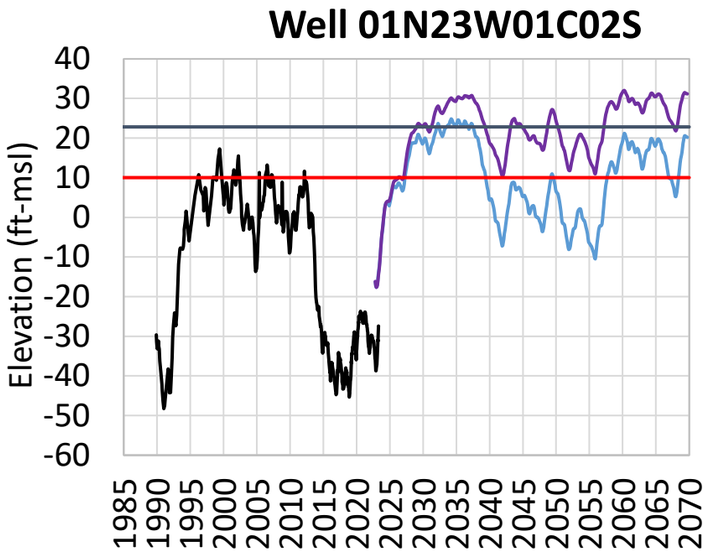


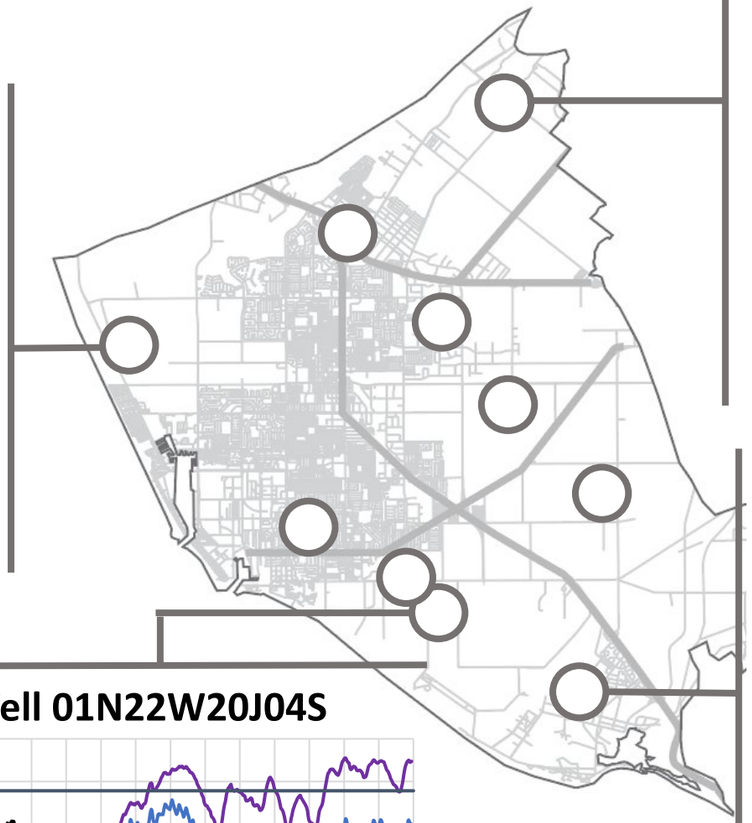
Legend

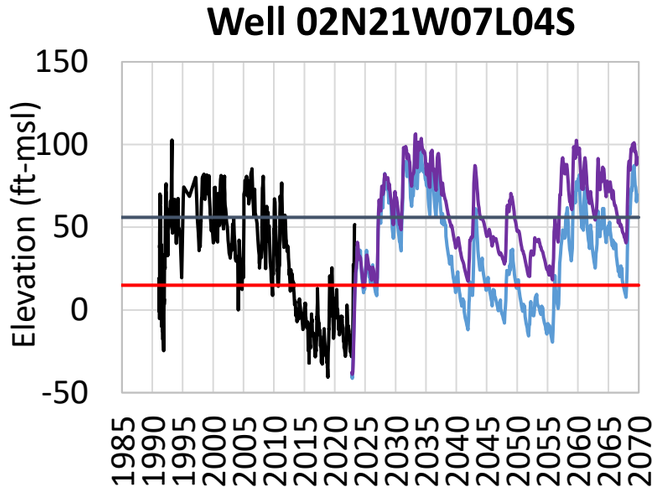
- Measured
- Future Baseline
- No New Projects
- Measurable Objective
- Minimum Threshold

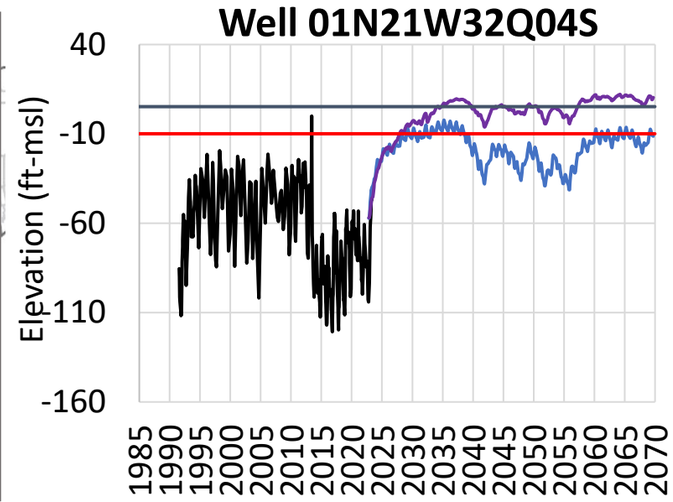
Data Source: Section 6
(Draft Pleasant Valley Basin GSP Evaluation)

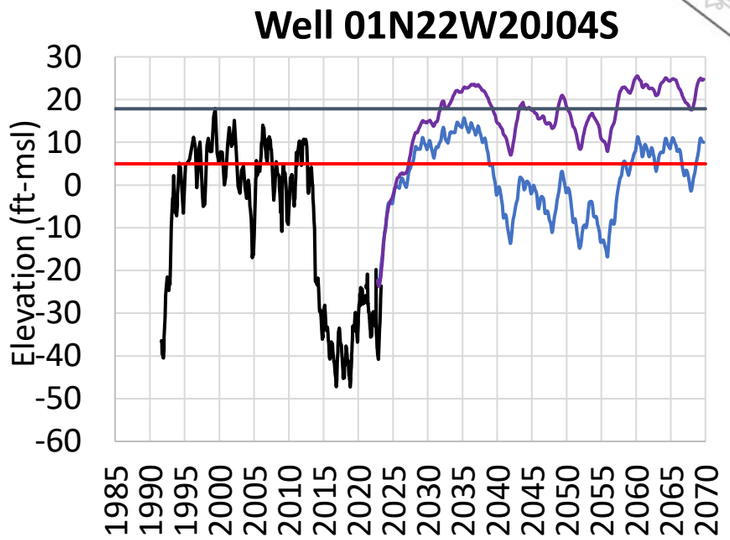
Oxnard Subbasin Groundwater Levels











Sustainable yield metrics

- Avoid seawater intrusion into the Oxnard Subbasin
- Support sustainability in the adjacent Pleasant Valley Basin and WLPMA

Data Source: Section 6
(Draft Oxnard Subbasin GSP Evaluation)

Updated Sustainable Yield

Basin	Aquifer System	Estimated Sustainable Yield (Acre-Feet Per Year)			
		No New Projects	Basin Optimization	Projects	With EBB
Oxnard	Upper Aquifer System	34,100	35,200	36,100	40,000
	Lower Aquifer System	10,600	17,100	13,300	28,200
Pleasant Valley Basin	Older Alluvium	3,300	3,600	3,600	4,700
	Lower Aquifer System	10,100	10,200	10,200	9,100*

*Reduction in pumping reflects an increase in availability of surface water supplies in the PVB as a result of UWCD's EBB project.

- Oxnard Subbasin
  - Sustainable Yield of the Upper Aquifer System is approximately 2,100 AFY higher than the estimate in the GSP
  - Sustainable Yield of the Lower Aquifer System is approximately 3,600 AFY higher than the estimate in the GSP
- Pleasant Valley Basin
  - Sustainable Yield of the Older Alluvium is approximately 1,100 AFY lower than the estimate in the GSP
  - Sustainable Yield of the Lower Aquifer System is approximately 2,900 AFY higher than the estimate in the GSP

Data Source: Section 5.2.3
(Draft Oxnard Subbasin and Pleasant Valley Basin GSP Evaluations)

Recommended Revisions to the Sustainable Management Criteria: Pleasant Valley Basin

Aquifer System	Number of Key Wells	Number of Recommended Revisions		Recommended Change (feet)	
		Minimum Thresholds	Measurable Objectives	Minimum Thresholds	Measurable Objectives
Older Alluvium	3	2	2	• Raised by 13 to 18 feet in the pumping depression	• Lowered by 10 to 15 feet in the pumping depression
Lower Aquifer System	5	4	4	• Raised by 8 feet in the pumping depression • No change in north Pleasant Valley	• Lowered by 10 feet in the pumping depression • Lowered by 80 feet in north Pleasant Valley
Total	**8**	**6**	**6**		

Data Source: Section 6
(Draft Pleasant Valley Basin GSP Evaluation)

Recommended Revisions to the Sustainable Management Criteria: Oxnard Subbasin

Aquifer System	Number of Key Wells	Number of Recommended Revisions		Recommended Change (feet)	
		Minimum Thresholds	Measurable Objectives	Minimum Thresholds	Measurable Objectives
Upper Aquifer System	14	4	7	• Lowered by 7 to 12 feet near the coast	• Lowered by 7 to 17 feet near the coast • Raised by 13 feet in the Forebay
Lower Aquifer System	19	6	5	• Raised by 13 feet near the coast • Raised by 13 to 38 feet in the pumping depression • Lowered by 7 feet in the Forebay	• Raised by 13 to 18 feet in the Forebay • Raised by 8 feet in the pumping depression
Total	**33**	**10**	**12**		

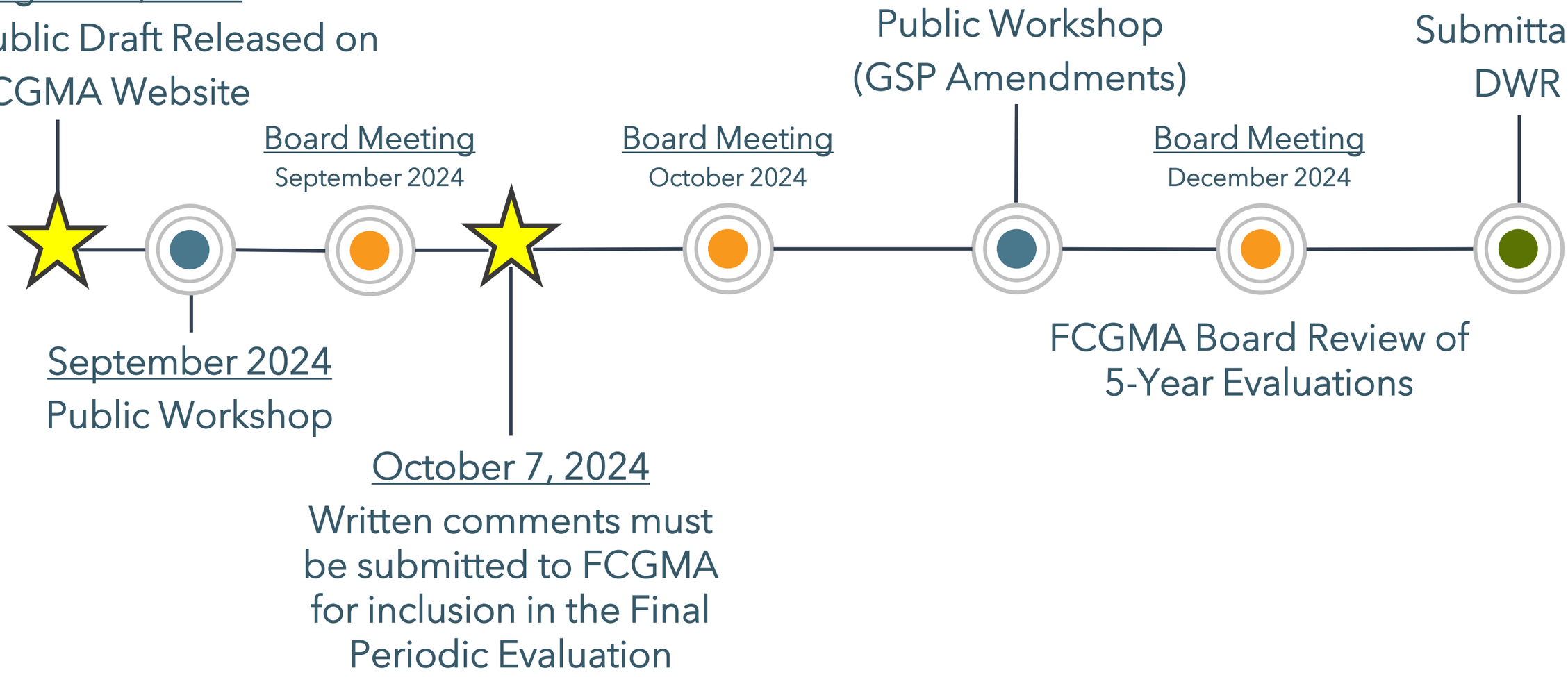
Data Source: Section 6
(Draft Oxnard Subbasin GSP Evaluation)

Assessment of Progress Towards Sustainability

- The Oxnard Subbasin and Pleasant 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

Data Source: Executive Summary, Section 2.2
(Draft Oxnard Subbasin and Pleasant Valley Basin GSP Evaluations)

Stakeholder Involvement



Questions & Answers

Written comments must be submitted to fcgma@ventura.org by October 7, 2024