

GSC QUARTERLY MEETING

For the Development of the SLO Basin
Groundwater Sustainability Plan (GSP)

SEPTEMBER 11, 2019

PREPARED BY WATER SYSTEMS CONSULTING

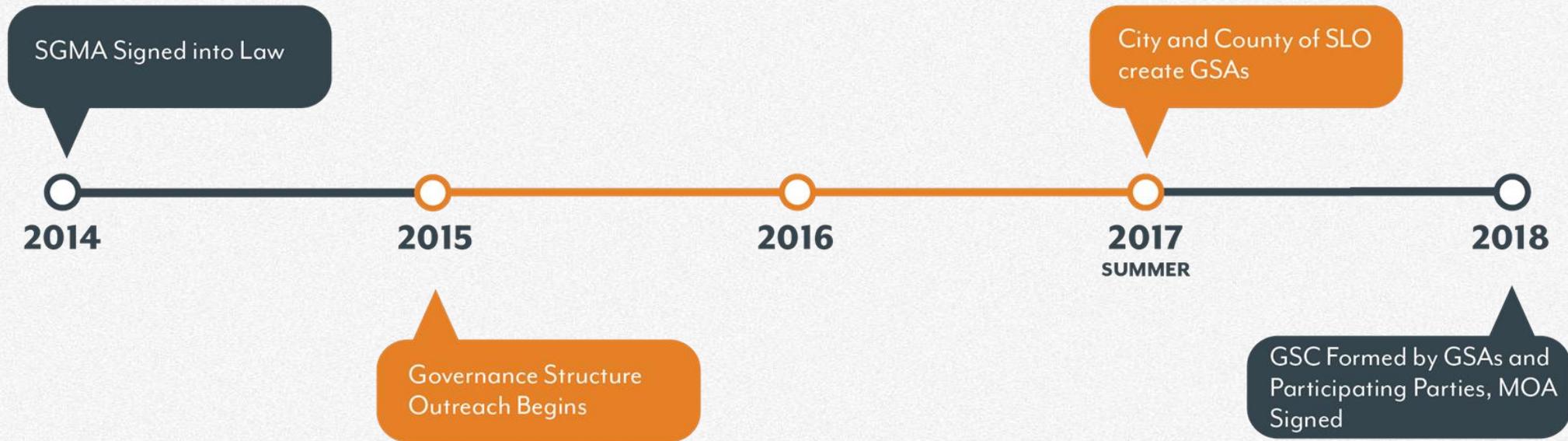




PROJECT STATUS UPDATE

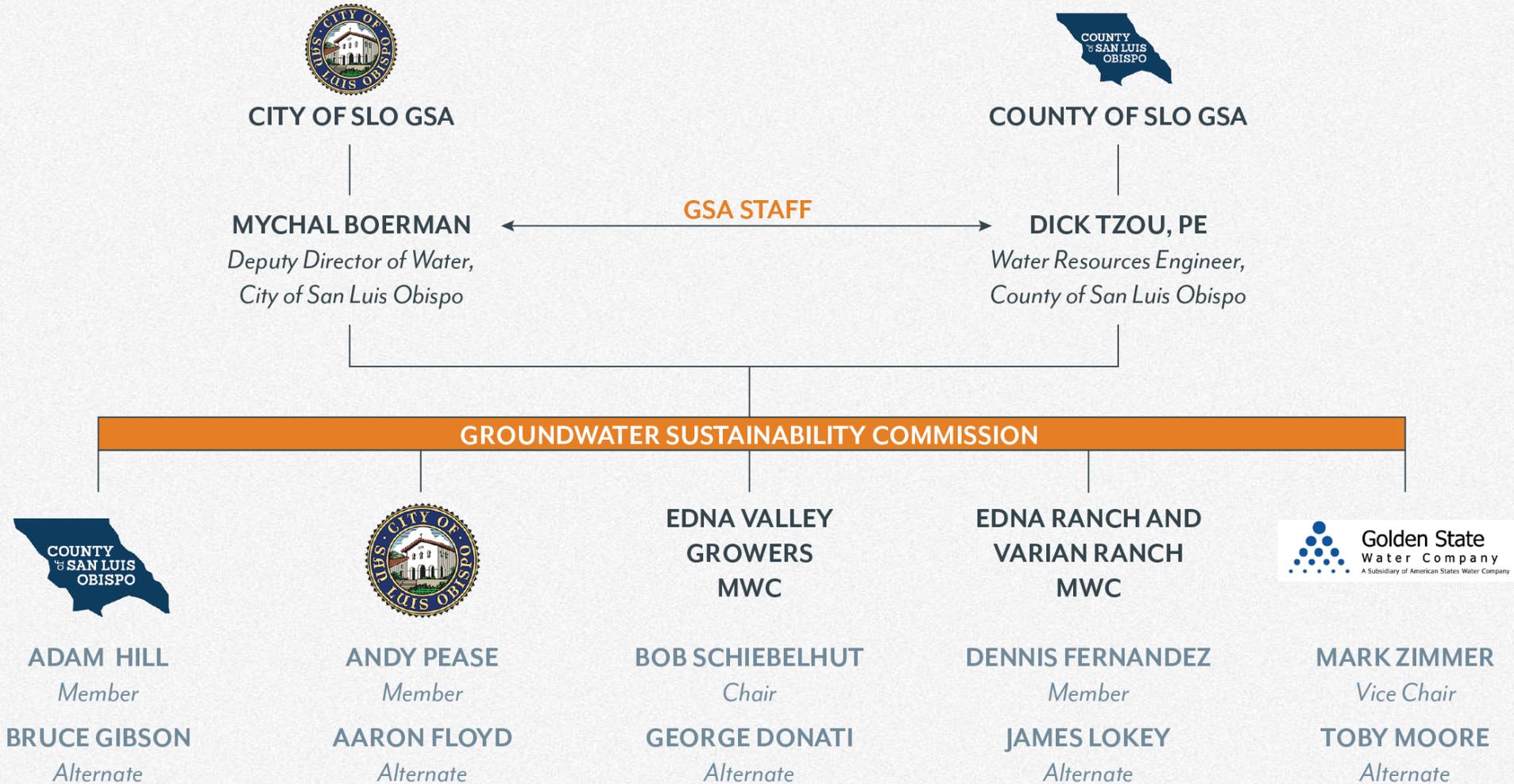
Dick Tzou, County of San Luis Obispo

GOVERNANCE TIMELINE



GSP GOVERNANCE

Groundwater Sustainability Agencies (GSA) | Groundwater Sustainability Commission



COMMUNICATION AND ENGAGEMENT PLAN

Draft Communication & Engagement Plan for San Luis Obispo Valley Groundwater Basin – June 5, 2019

DRAFT

Communication and Engagement Plan
for Groundwater Sustainability Plan Development
in the San Luis Obispo Valley Groundwater Basin

Prepared for San Luis Obispo County

June 5, 2019

- Public commenting period closed Aug. 31
- All comments will be considered and published online
- Implementation Plan will be incorporated into the Appendices

SLO BASIN STAKEHOLDERS



HOW TO PARTICIPATE



REGISTER.

Register as an interested party at **SLOWaterBasin.com** to receive email alerts.



MEETINGS.

Join quarterly GSC meetings to receive project news and to share your input.



WORKSHOPS.

Join interactive workshops to learn about and inform the development of the GSP.



REVIEW AND COMMENT.

Review and comment on sections/chapters of the GSP.

SLOWaterBasin.com

AUGUST 14 STAKEHOLDER WORKSHOP: SGMA AND GROUNDWATER 101

- About 50 people in attendance
- Representation from more than 50% of target stakeholder segments
- Educational in nature
- **Topics Covered:**
 - SGMA 101
 - Groundwater 101
 - Groundwater Conditions
 - Opportunities for stakeholders to participate and Q&A.
- Download recording and presentation slides at [**SLOWaterBasin.com/resources**](https://SLOWaterBasin.com/resources)



SLO BASIN GSP: DRAFT CHAPTERS 1 & 2

Michael Cruikshank, WSC

GSP DEVELOPMENT TIMELINE



GSP DEVELOPMENT TIMELINE

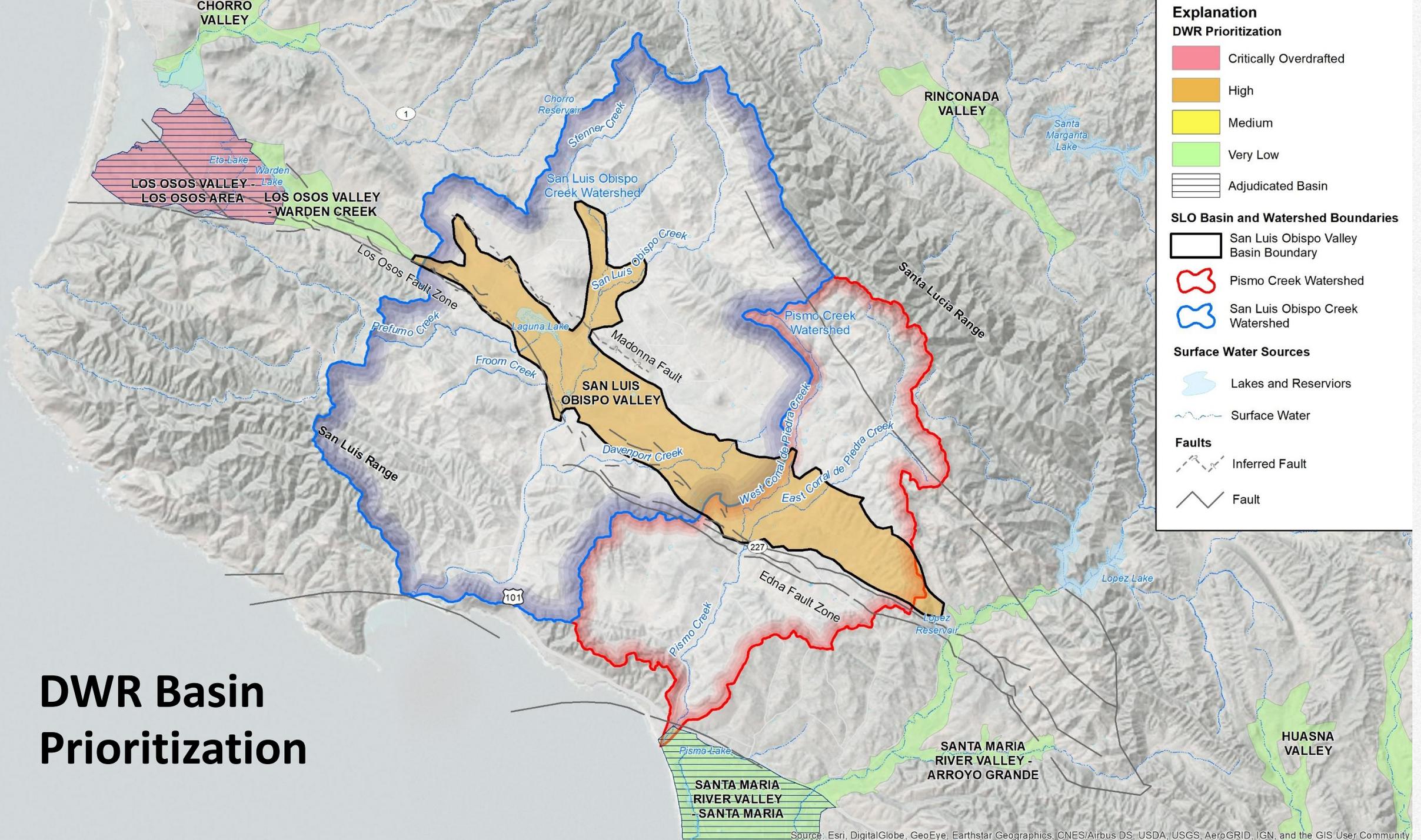


GSP CHAPTER 1: INTRODUCTION



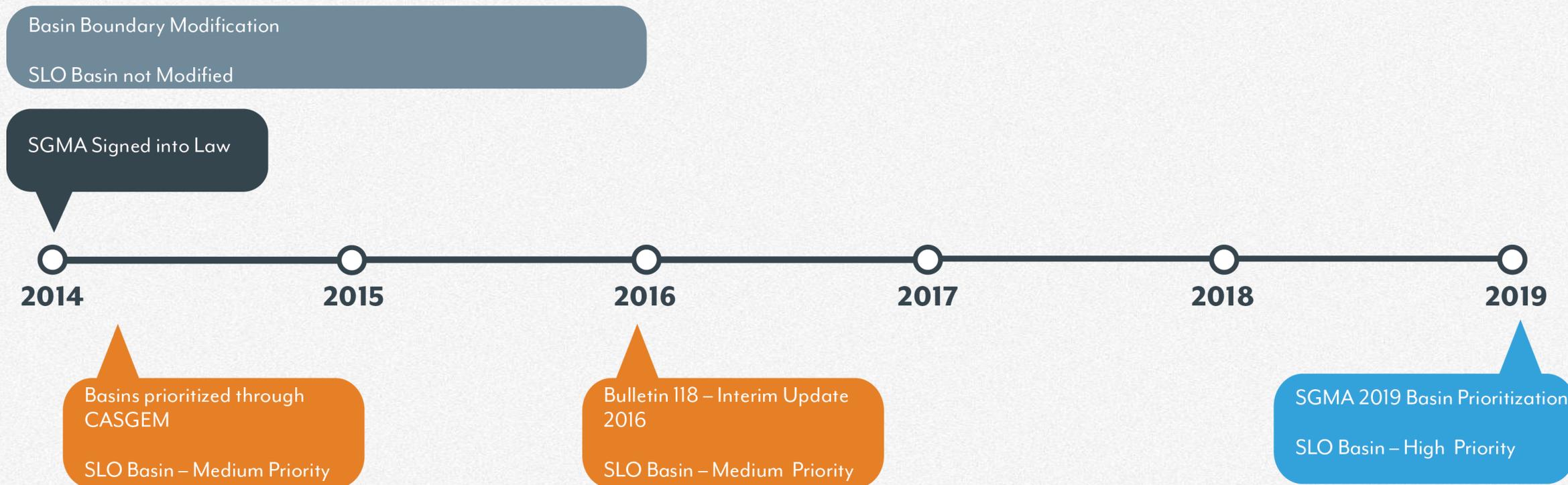
- Chapter 1 – Introduction to SLO GSP
 - Purpose of the GSP
 - Description of SLO Basin
 - Basin Prioritization

DWR Basin Prioritization



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SLO BASIN PRIORITIZATION TIMELINE



SLO Basin Prioritization

OPEN INTERACTIVE MAP

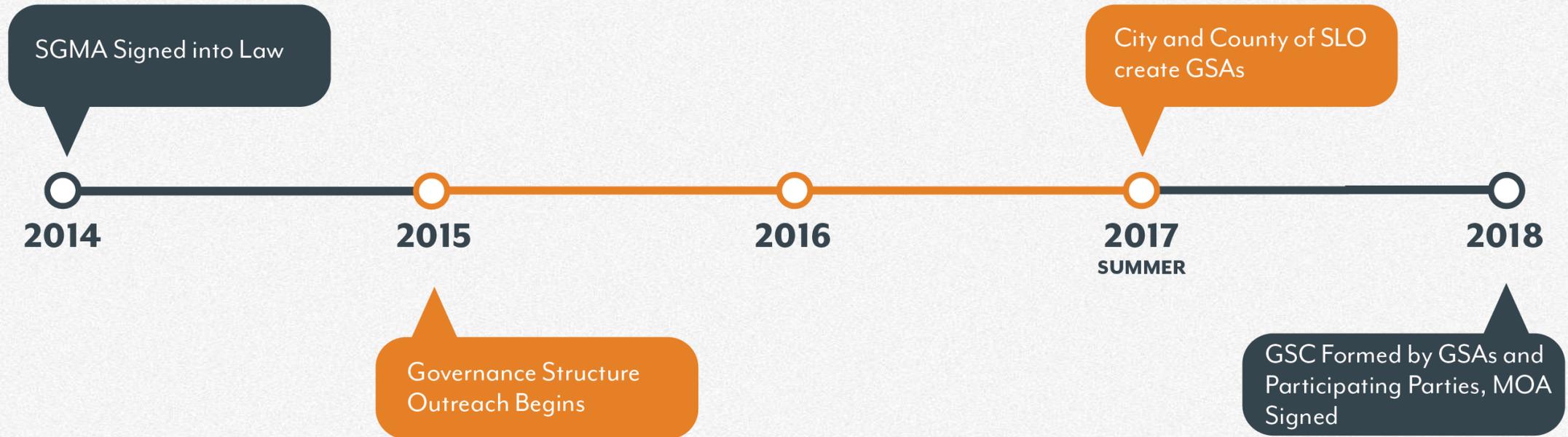
<https://gis.water.ca.gov/app/bp-dashboard/p2/>

GSP CHAPTER 2: AGENCY INFORMATION



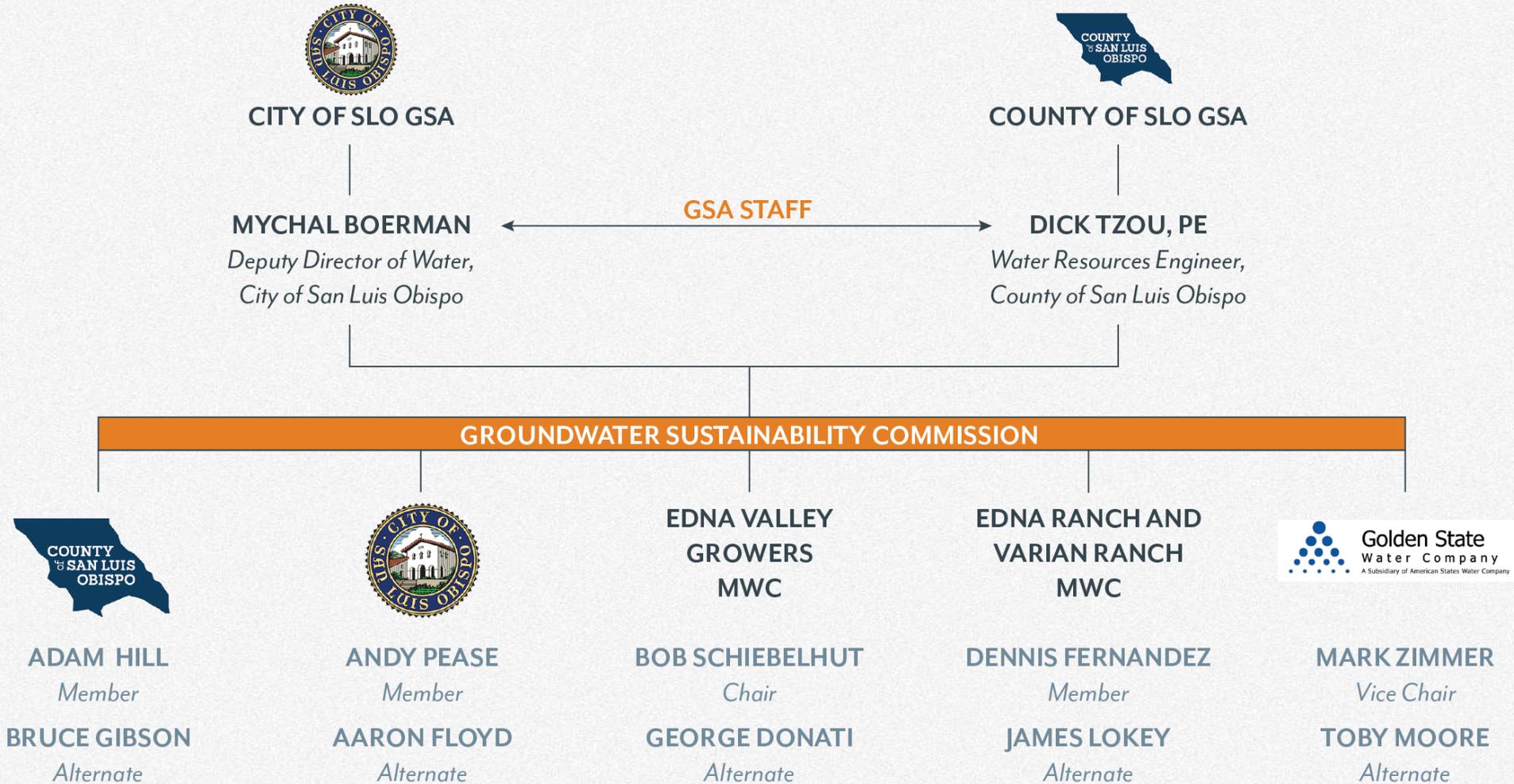
- Chapter 2 – Agency Information
 - Agencies Organization
 - Authority of Agencies
 - Coordination Agreements
 - MOA (Memorandum of Agreement)

GOVERNANCE TIMELINE



GSP GOVERNANCE

Groundwater Sustainability Agencies (GSA) | Groundwater Sustainability Commission



HOW TO SUBMIT PUBLIC COMMENT



REVIEW AND COMMENT.

GSP Chapters 1 &2
Public comment closes
10/27/2019 -- 45 days

Download the chapters from the homepage. Click on "Comment" to submit your comment(s).



MEETINGS.

GSC Public Meeting
Dec. 11 • 3:30pm-5:30pm

Learn more or take action at
SLOWaterBasin.com

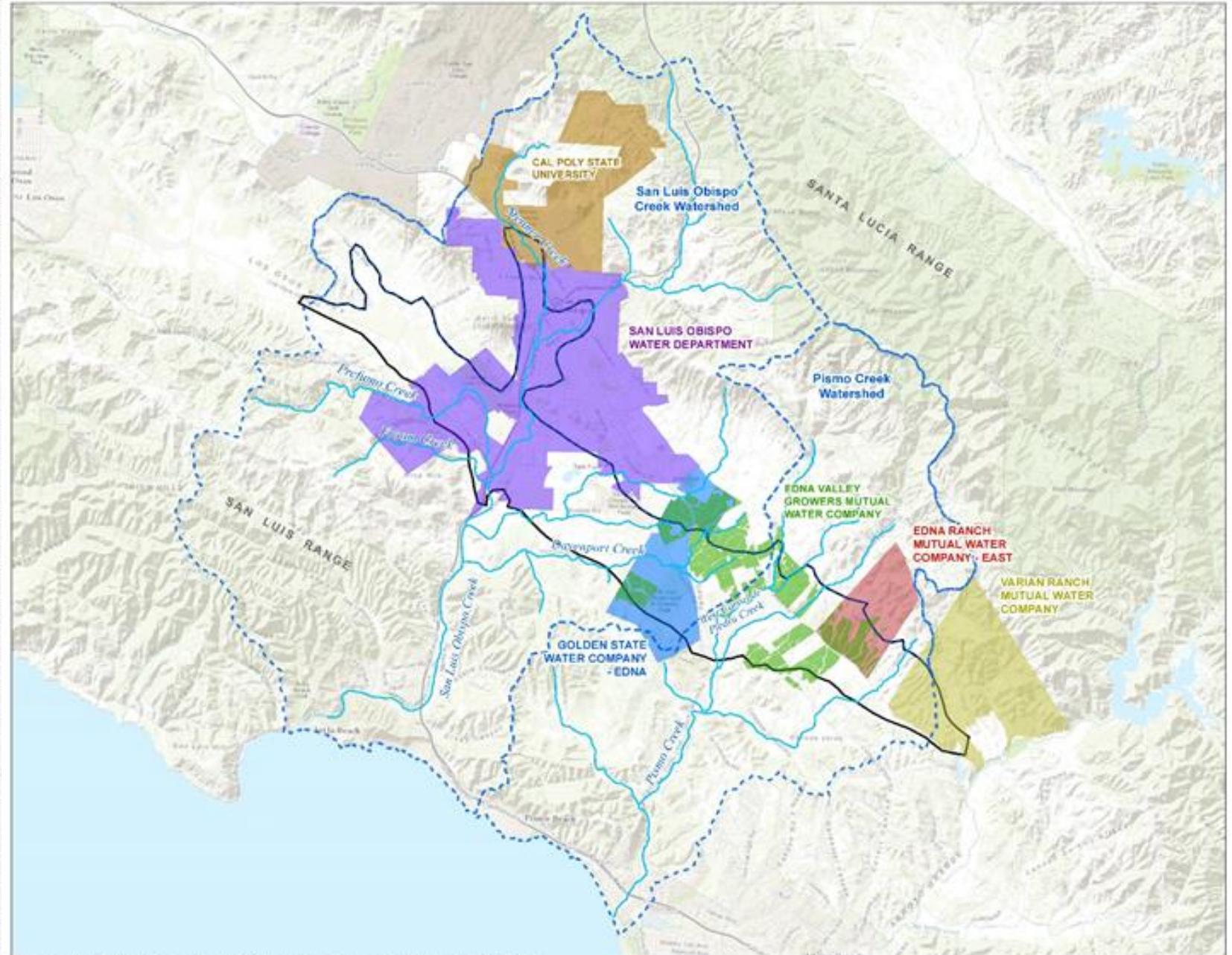


Basin Setting

Dave O'Rourke, GSI

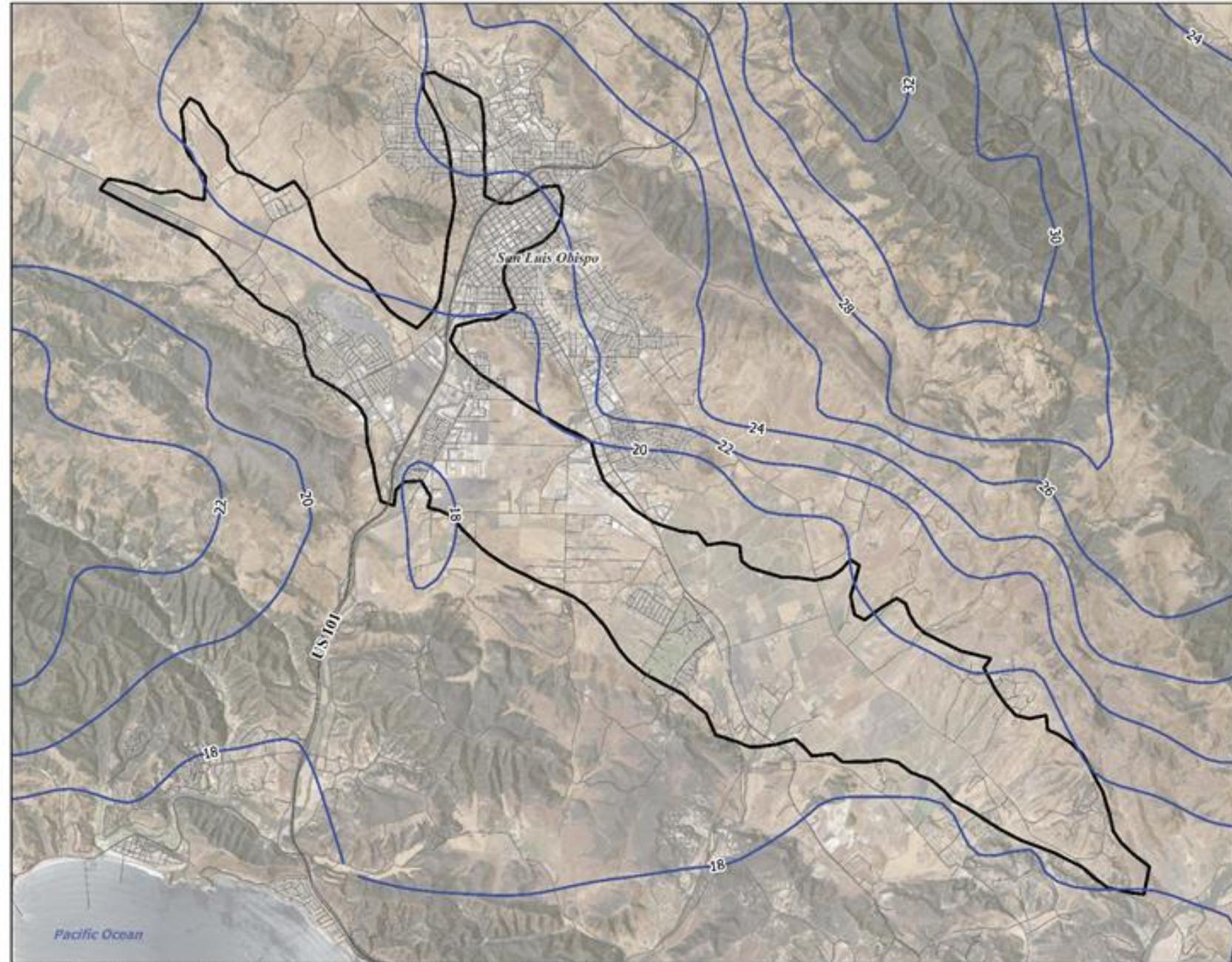
Basin Boundary

Contributing Watersheds
Water Purveyors
SLO vs. Edna Valley



Annual Precipitation

Higher in mountains
18 – 22 inches in Basin

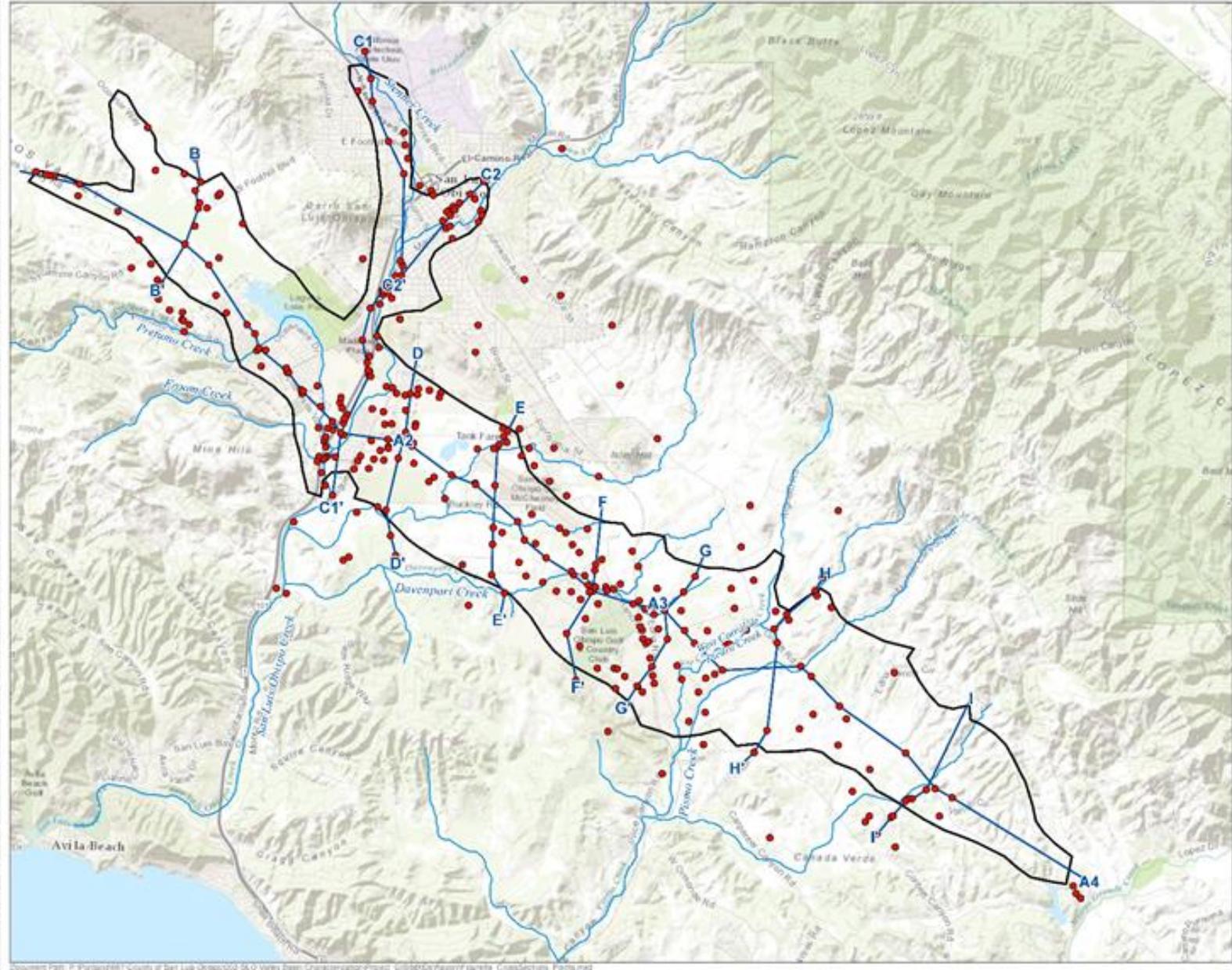


Lithology Data Points

Well Completion Reports

Not all borings extend to bedrock

Reasonable Data Density



Geologic Column

Basin Sediments

Bedrock

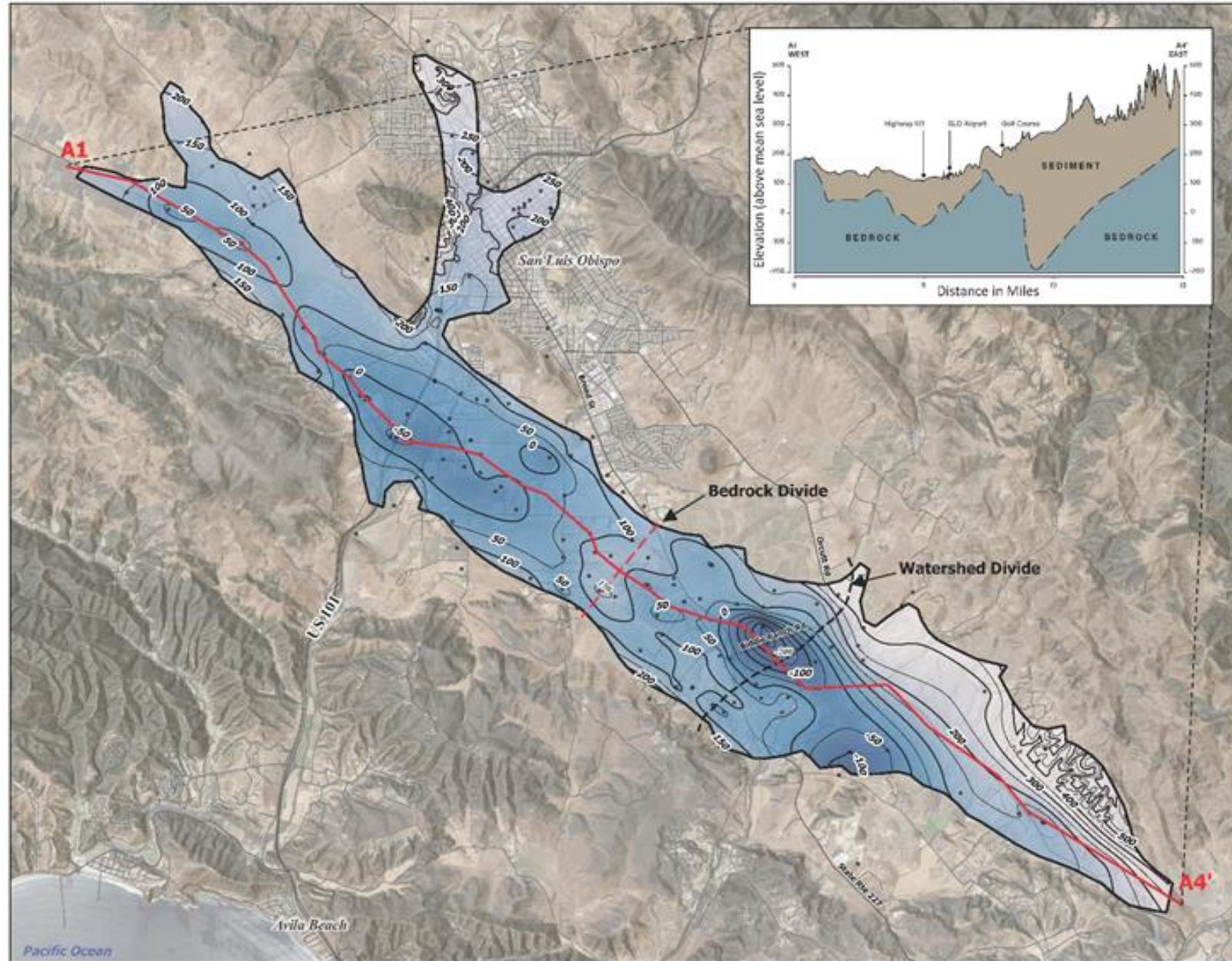


EPOCH	PERIOD	MILLION YEARS AGO
HOLOCENE	QUATERNARY	0.1
PLEISTOCENE		
		2.0
PLIOCENE	TERTIARY	
		24
		66
	CRETACEOUS	
		144
	JURASSIC	

Bedrock Topographic Map

Bottom of Basin

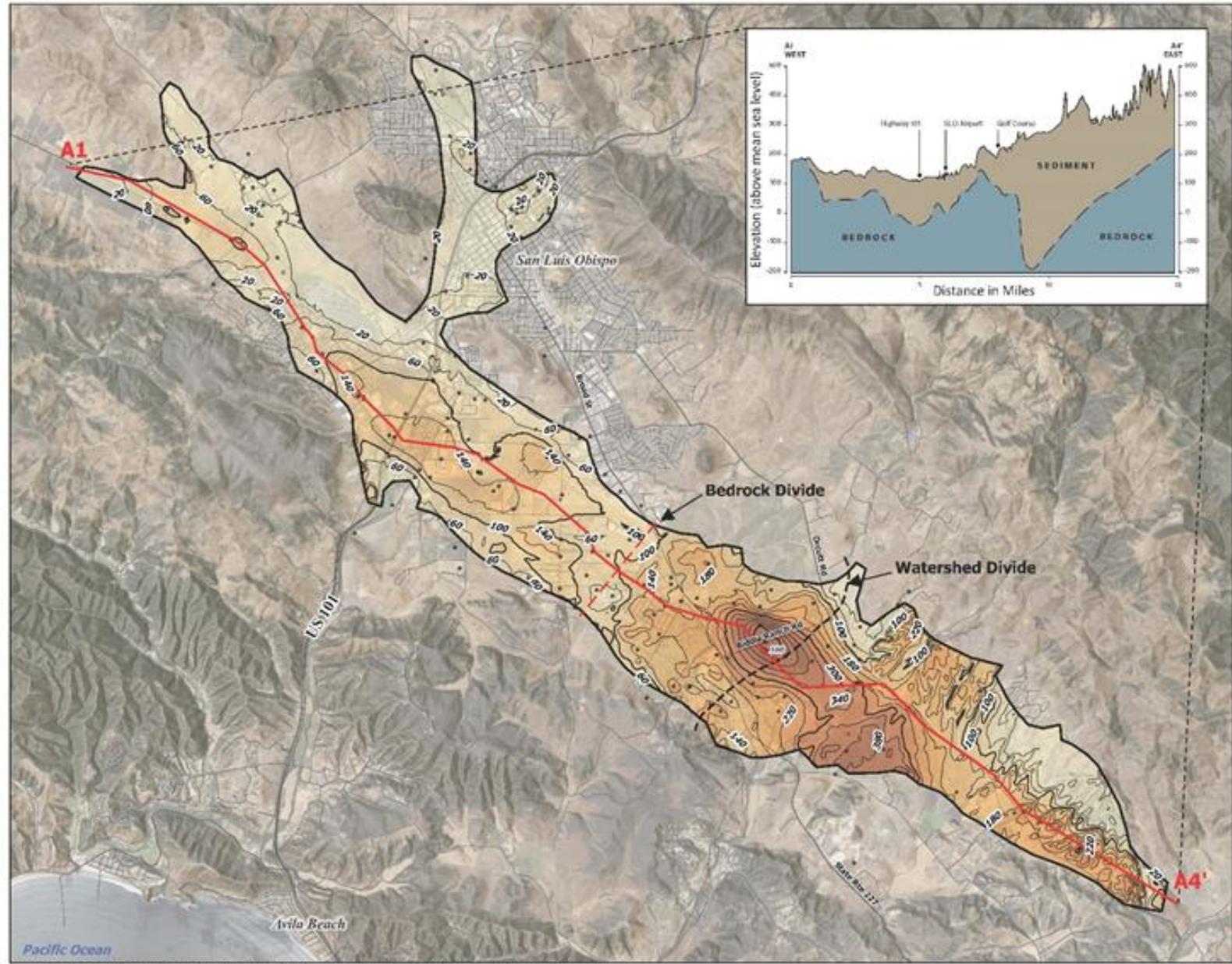
Bedrock Divide \neq Watershed
Divide



Sediment Thickness Map

Land Surface to Bedrock

Northern lobe of Basin is thin.

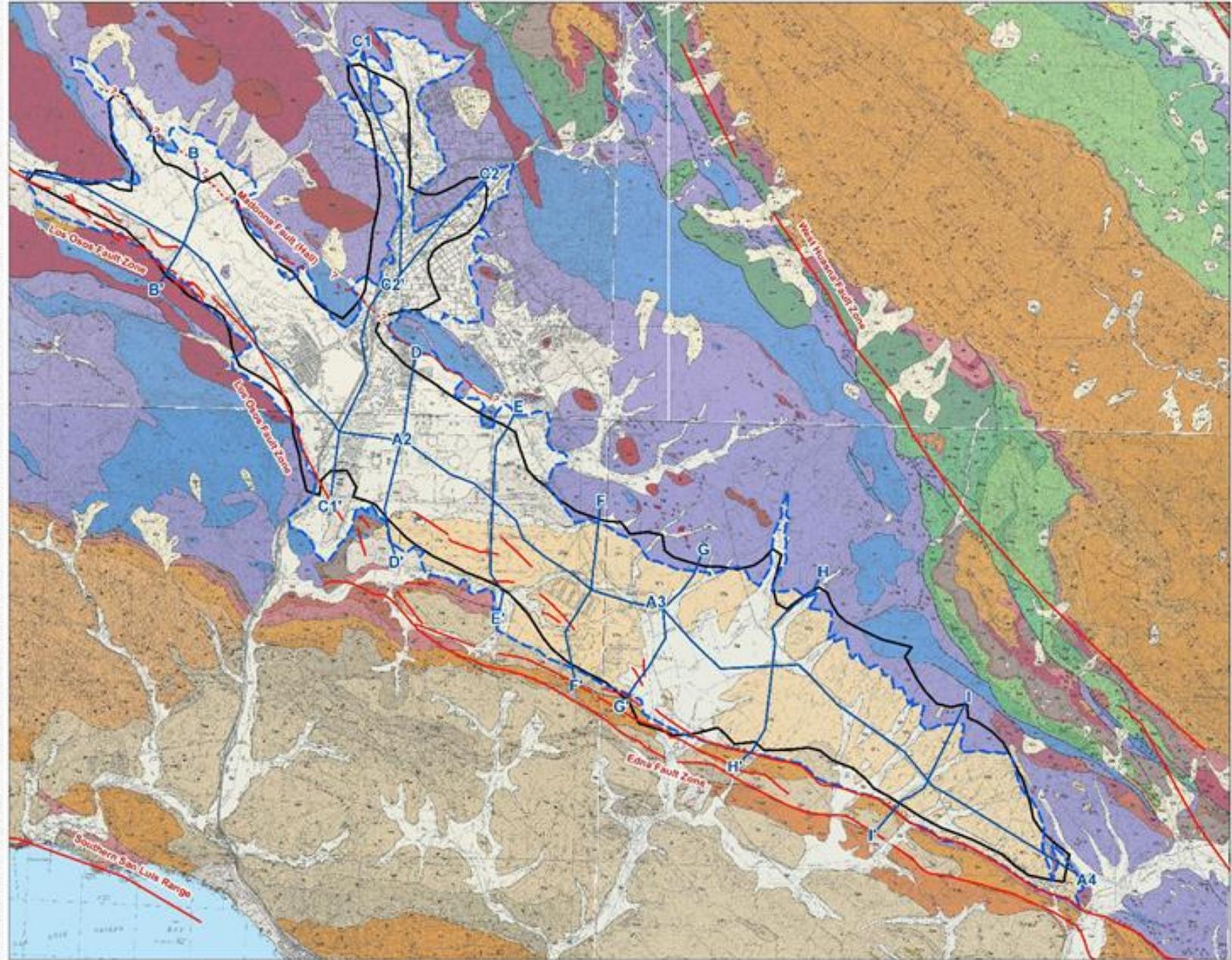


Geologic Map

Alluvium and Paso Robles
Formation at Basin Surface

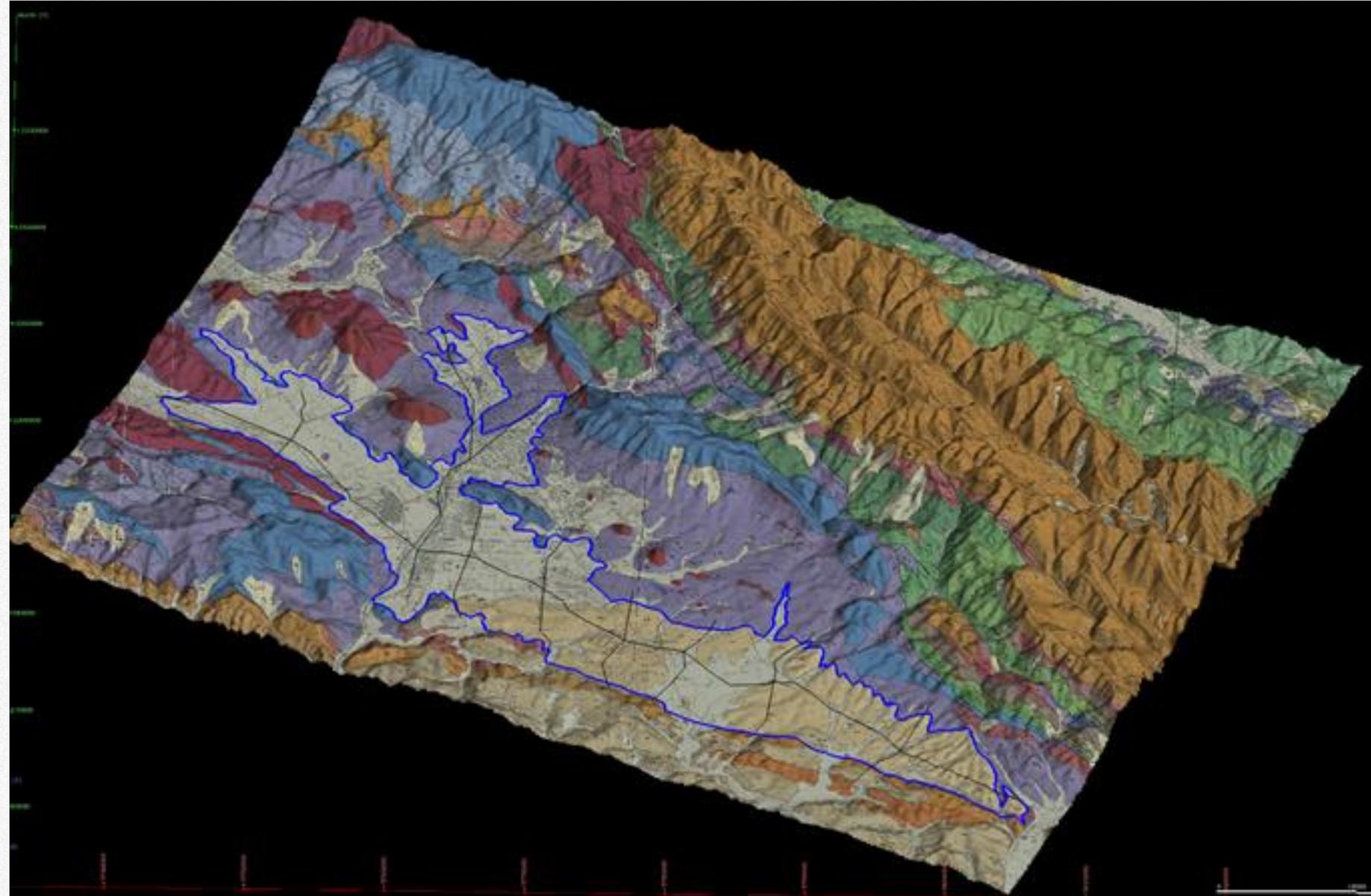
Slight Difference between Official
Boundary and Geologic Map

Geology Outside of Basin not
significant to SGMA



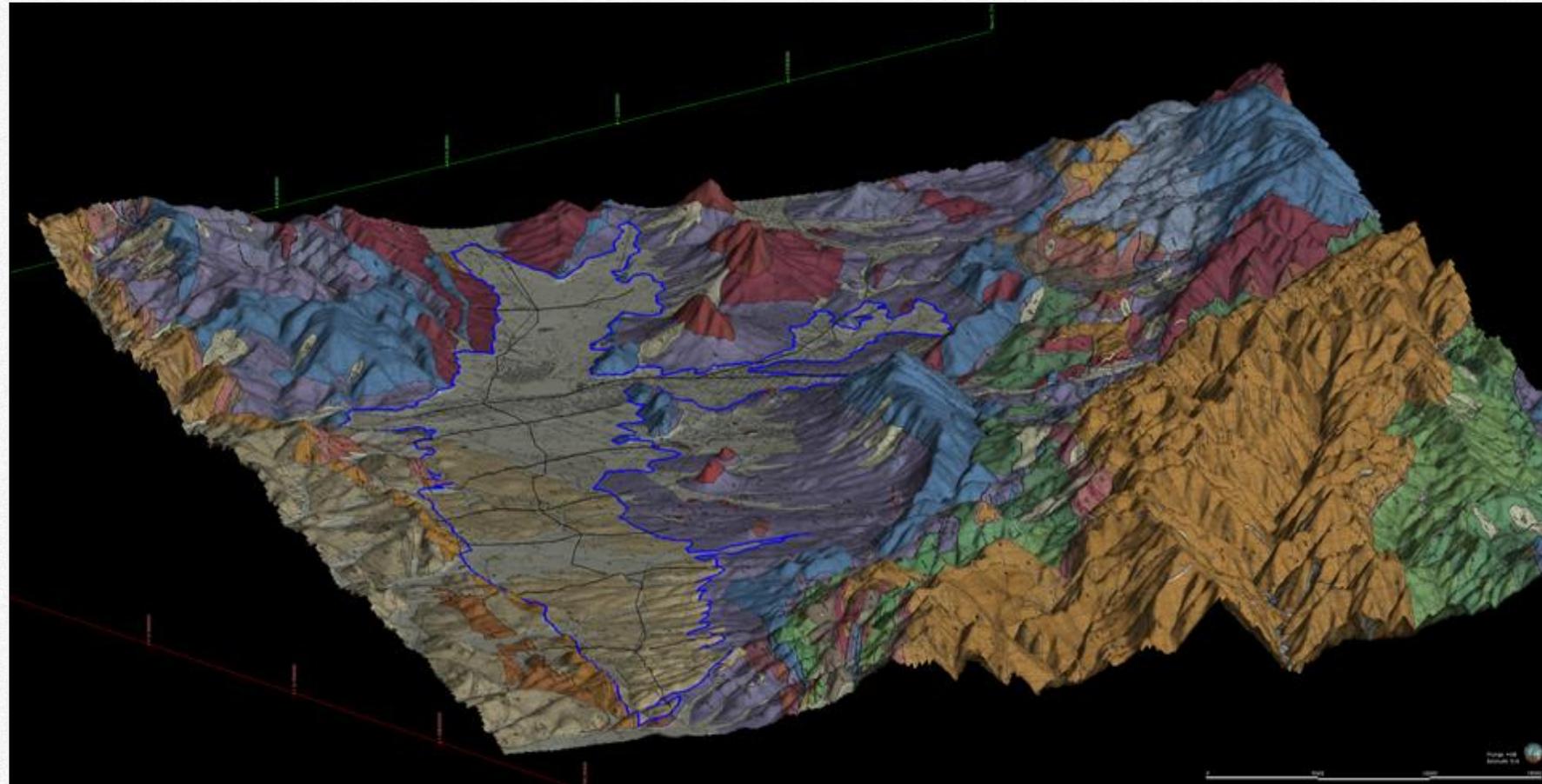
Geologic Map 3D

Oblique view from
south



Geologic Map 3D

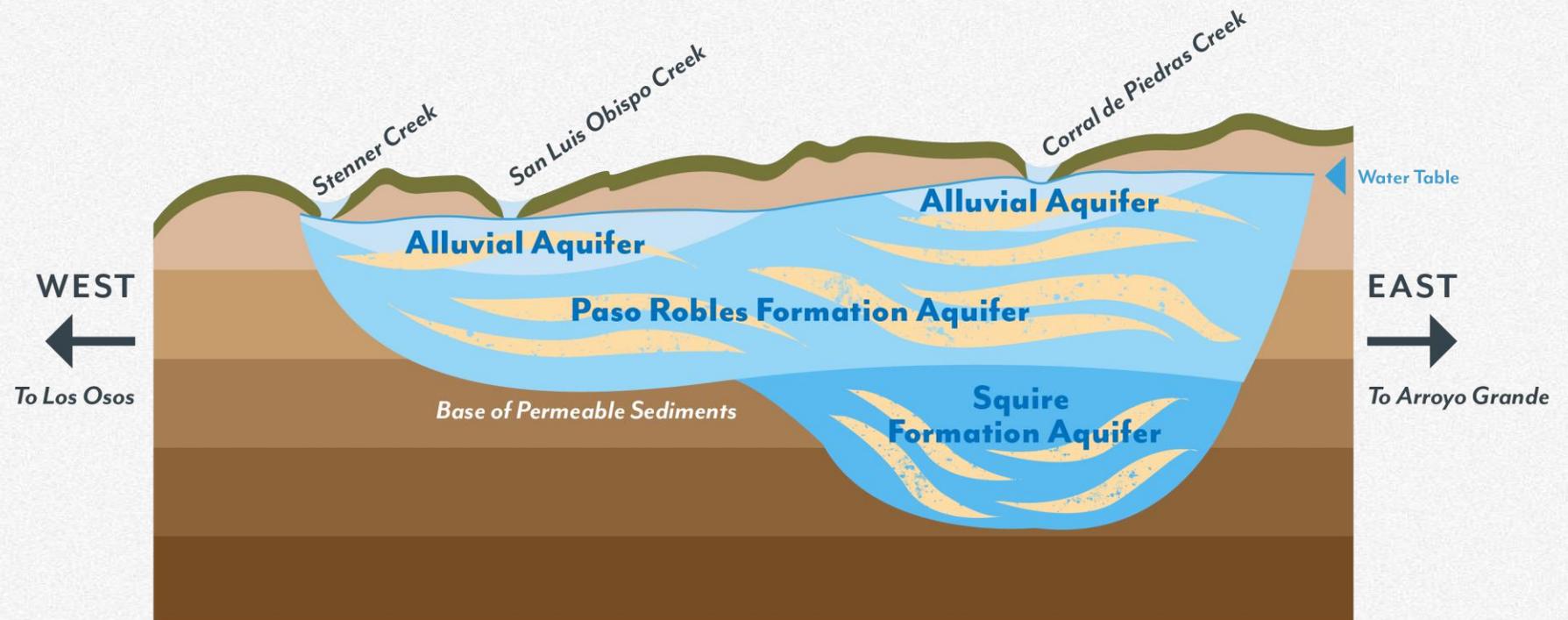
Oblique view looking
NW up Basin



Basin Cross Section (Conceptual, Lengthwise)

Materials in each formation are not uniform.

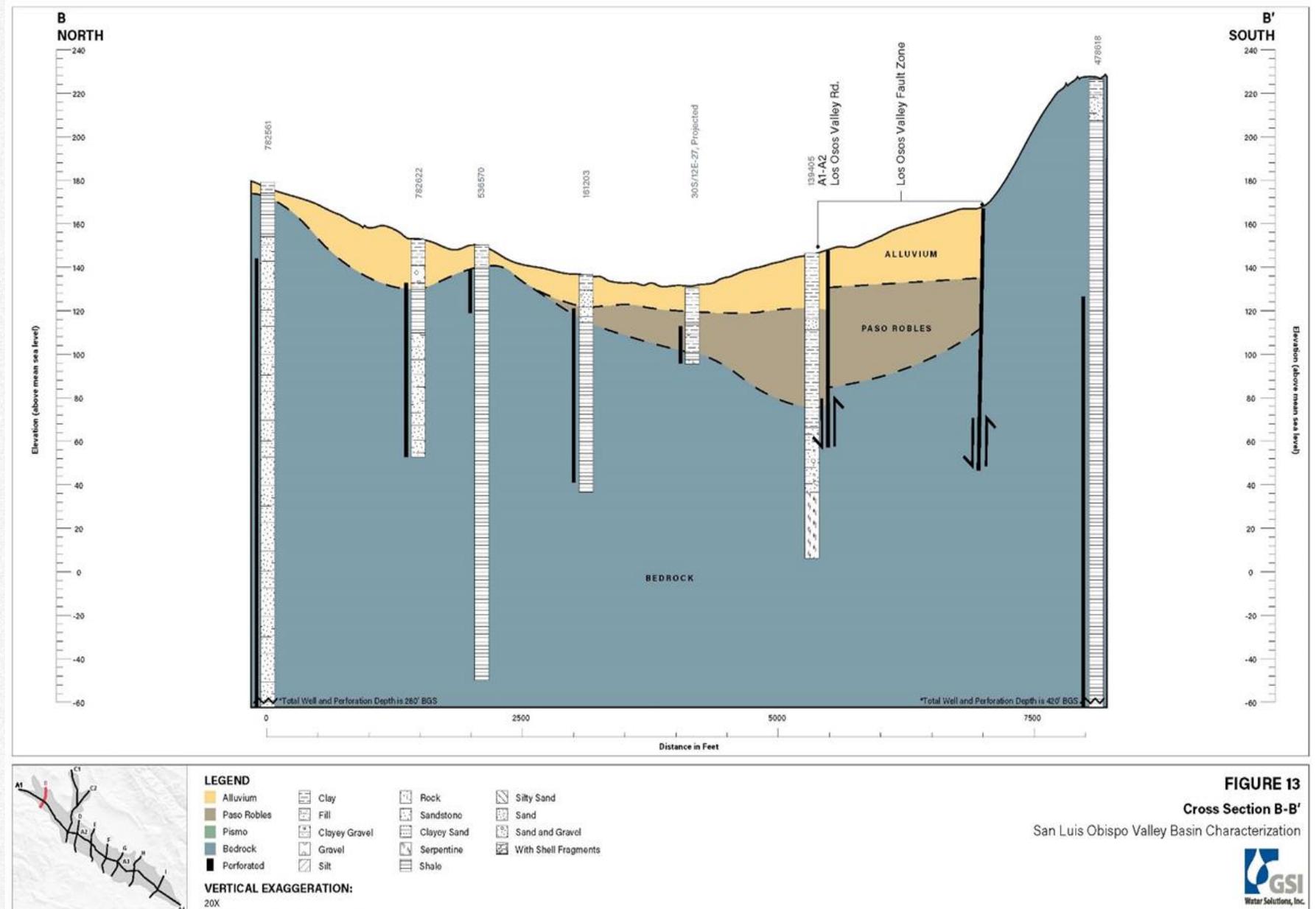
Basin is thicker in Edna Valley.



Basin Cross Section (N-S)

Bedrock formations are lumped together.

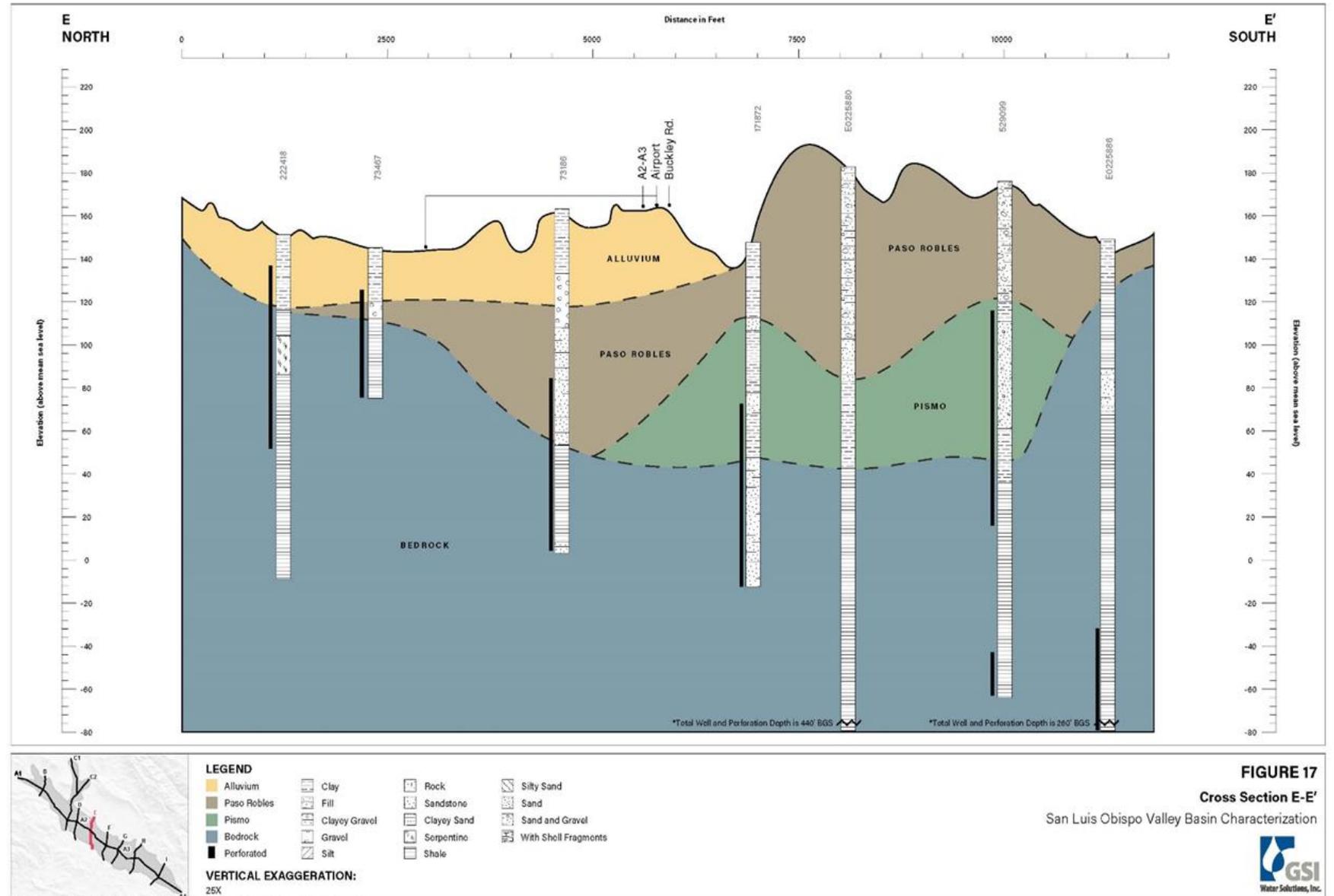
LOVR Corridor.



Basin Cross Section (N-S)

Bedrock formations lumped together.

Central Basin (near Airport).



Basin Cross Section (N-S)

Thick deposits of Pismo/Squire

Alluvium and Paso Robles Formation relatively thin

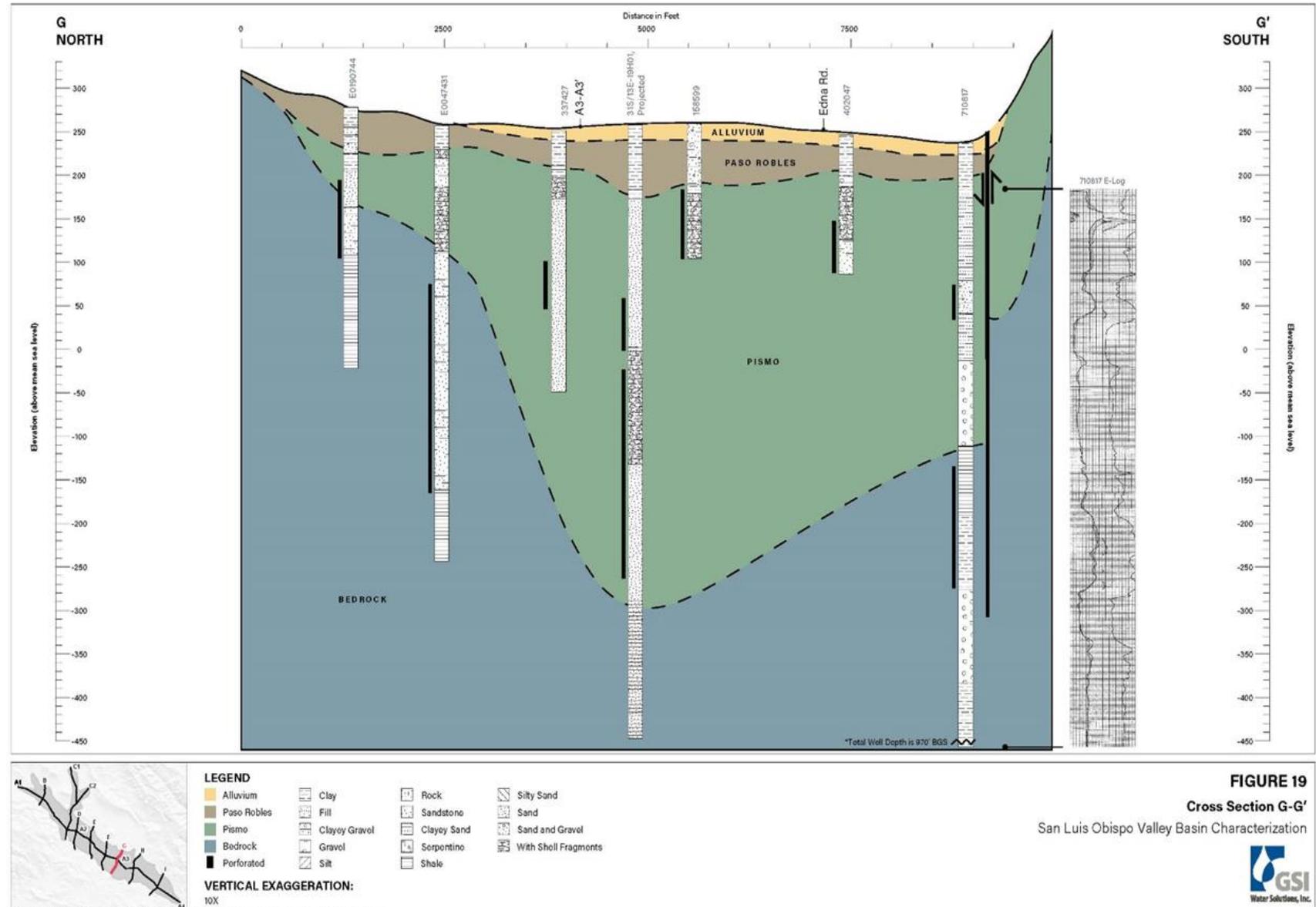


FIGURE 19
Cross Section G-G'
San Luis Obispo Valley Basin Characterization



Basin Cross Section (N-S)

Bedrock formations lumped together.

Southern Edna Valley

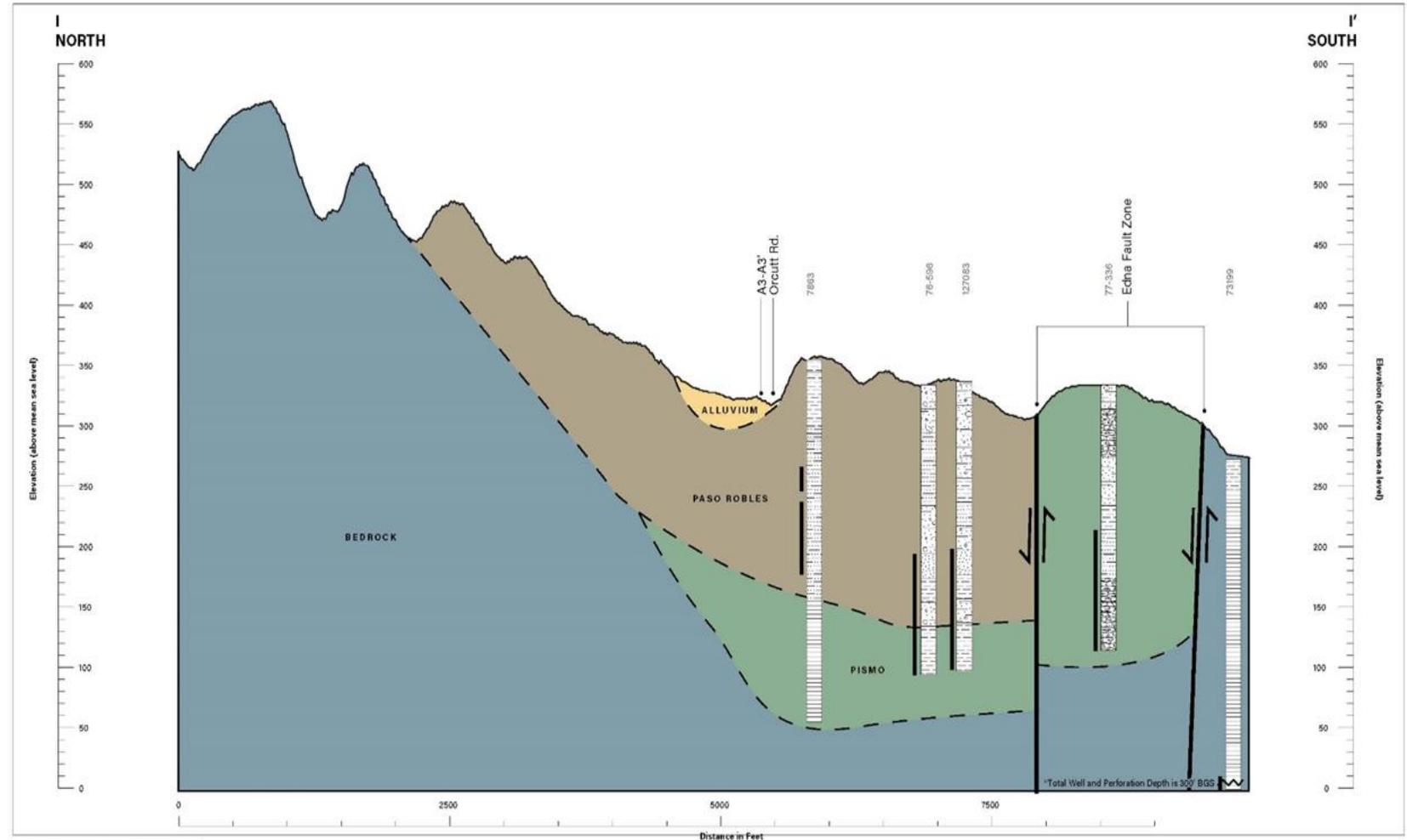


FIGURE 21
Cross Section I-I'
San Luis Obispo Valley Basin Characterization



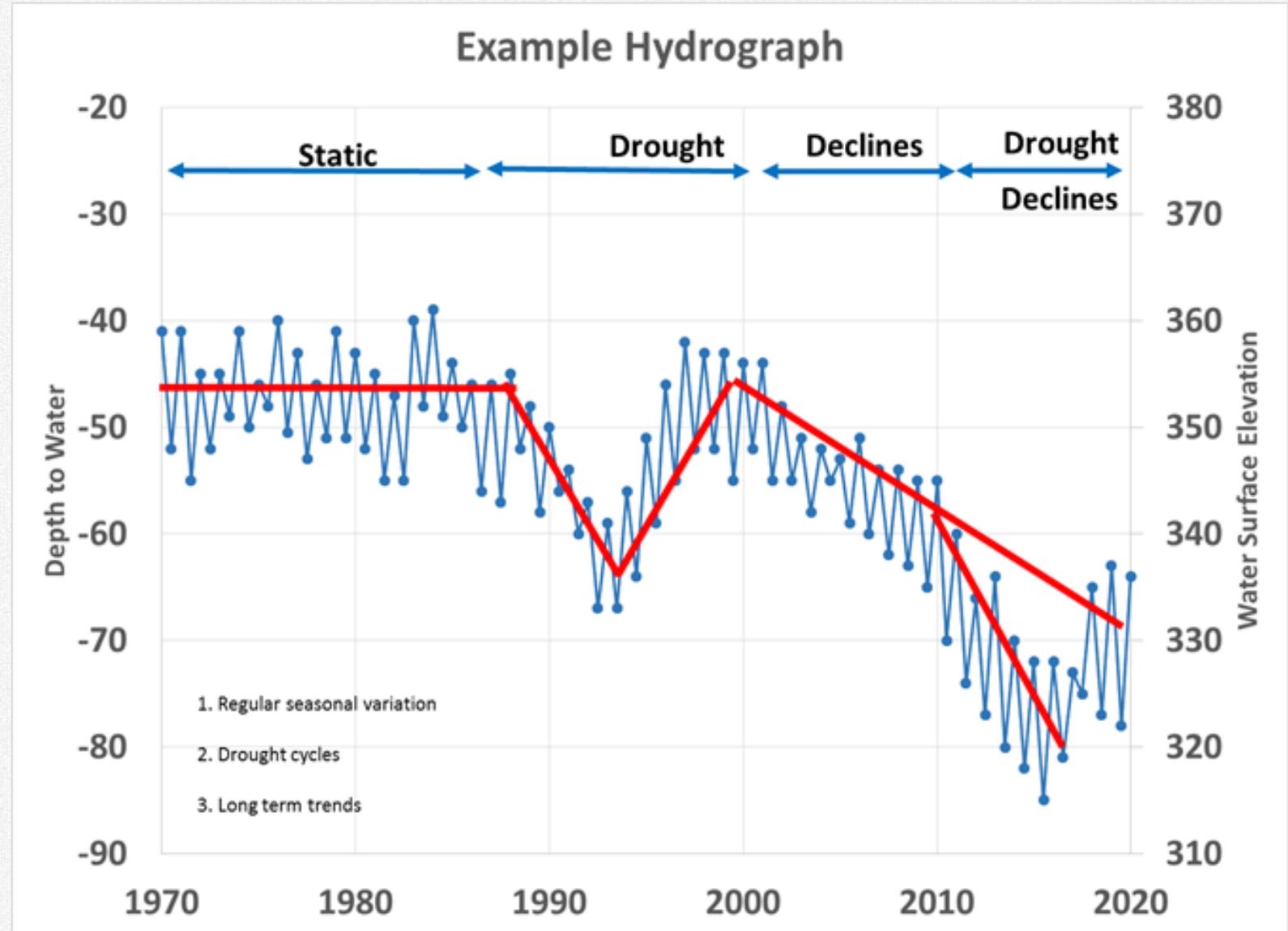
Groundwater Hydrograph (Example)

Normal Seasonal Fluctuation

Drought Cycles

Long-Term Trends

Slow Response Compared to Surface Water



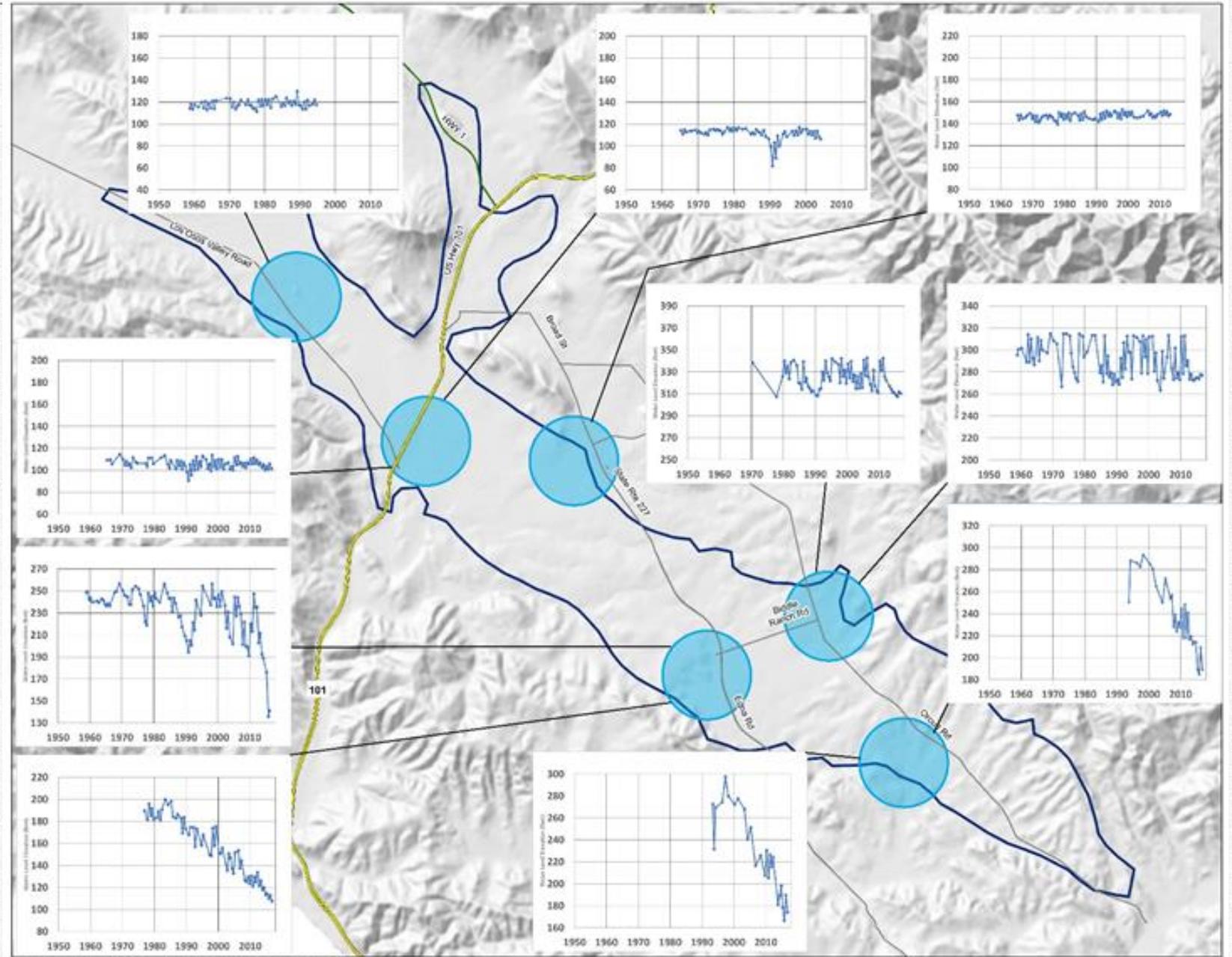
Groundwater Hydrographs

Not yet updated

Relatively Stable near SLO

Corral de Piedras
Recharge Area

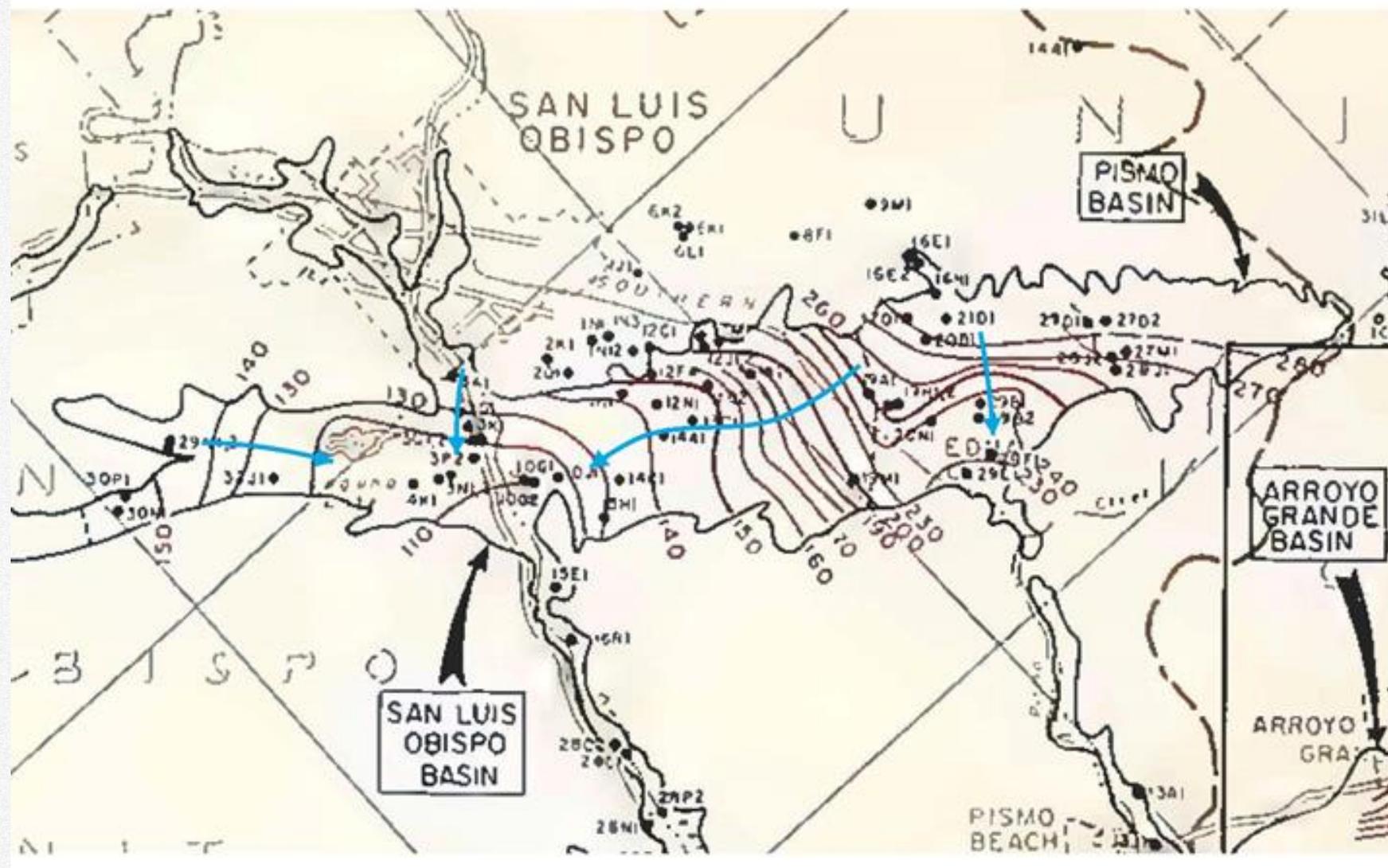
Edna Valley Declines



Groundwater Elevation Map - 1954

Flow pattern from Edna to SLO

Discharge from Basin at SLO Creek and Pismo Creek

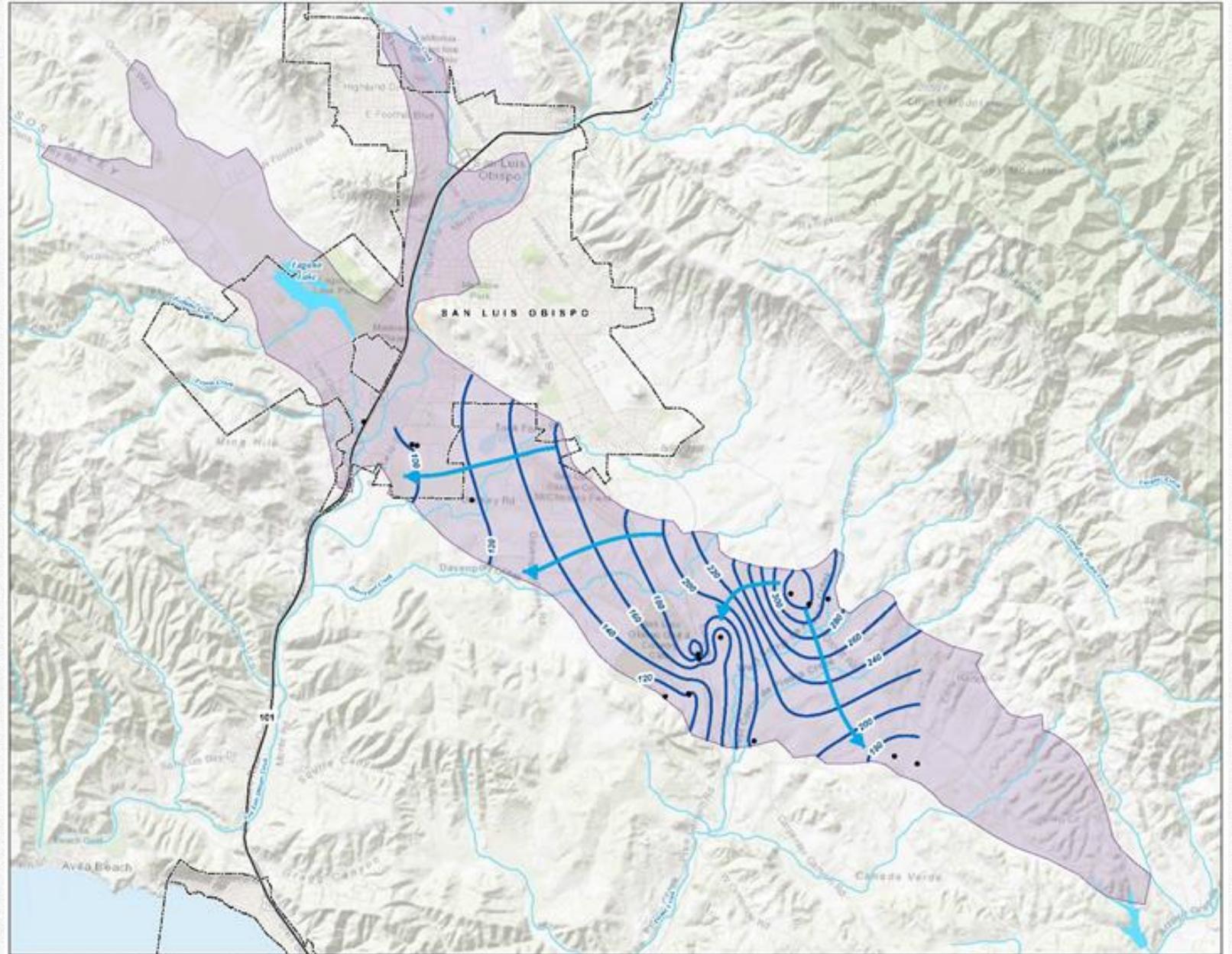


Groundwater Elevation Map – Fall 2017

Flow pattern from
Edna to SLO

Corral de Piedras
Recharge Area

New Pumping since 1954
Apparent in Water Levels

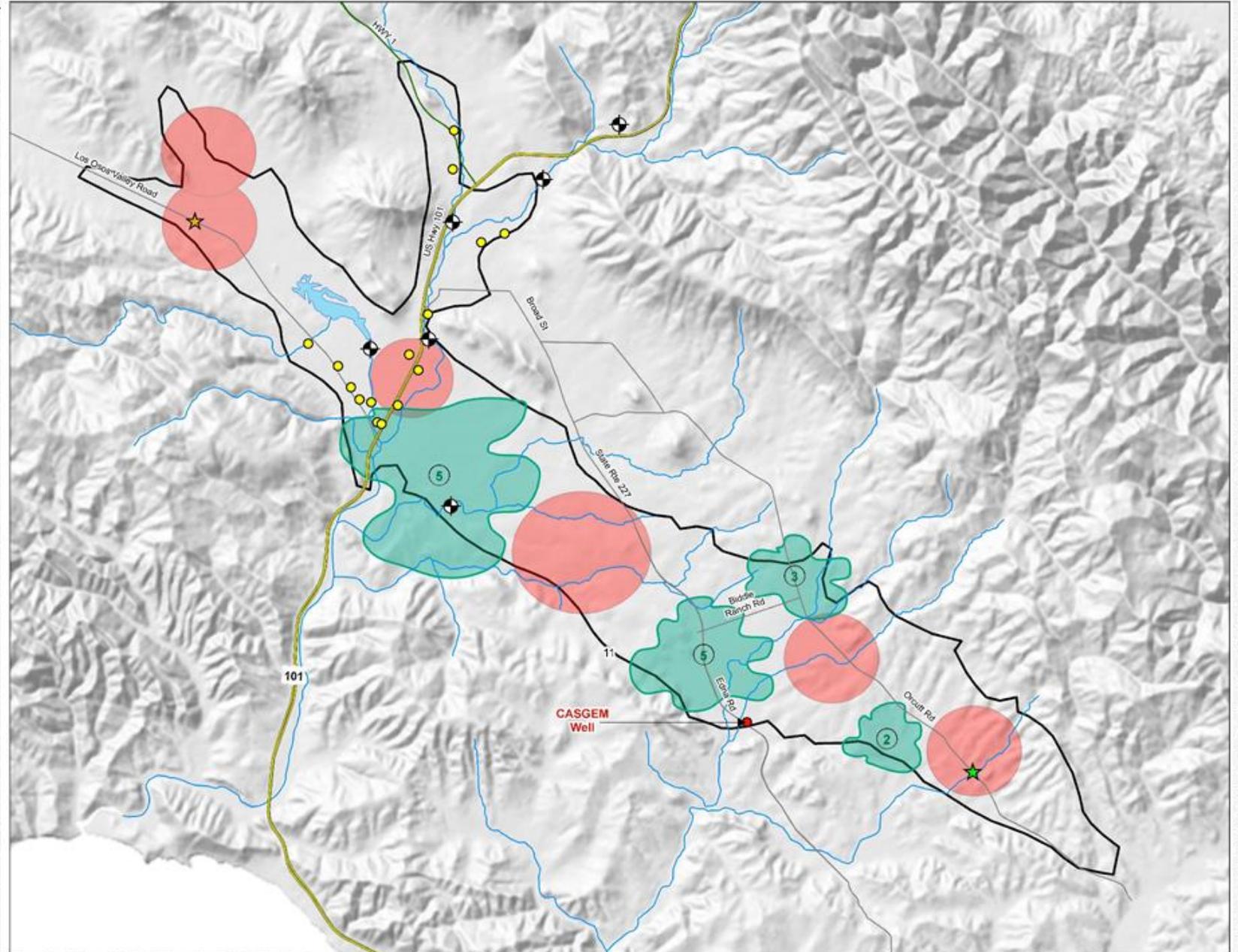


Basin Data Gaps

SLO City wells will likely be incorporated into monitoring network.

Seeking new wells to include in network.

Corral de Piedras Stream Gage?



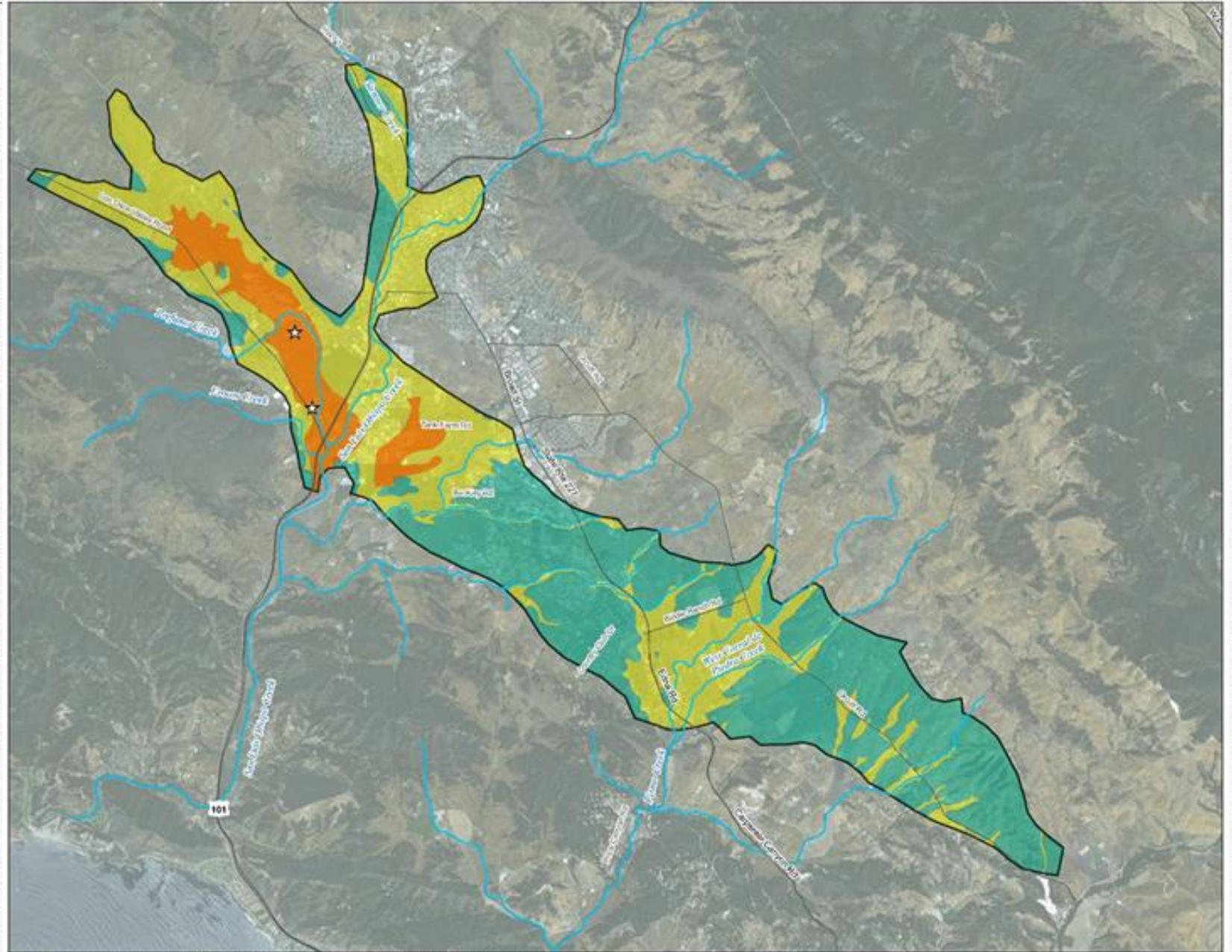
Subsidence

Is a SGMA undesirable effect.

Can occur if GW levels decline below clay or peat layers.

Happened along LOVR in early 1990s.

Needs to be monitored.



Summary

- Alluvium, Paso Robles Formation, and Squire member of Pismo Formation comprise Basin sediments.
- Some wells in Basin draw from the Monterey Shale.
- Greatest thickness of sediments in Edna Valley.
- Hydrographs indicate water levels in SLO are stable. Edna Valley water levels indicate declines over past 20 years.
- Recent water level maps reflect new pumping in Edna Valley.
- GSC's goal to expand groundwater monitoring network.
- Subsidence along LOVR.



Integrated Groundwater/Surface Water Model Update

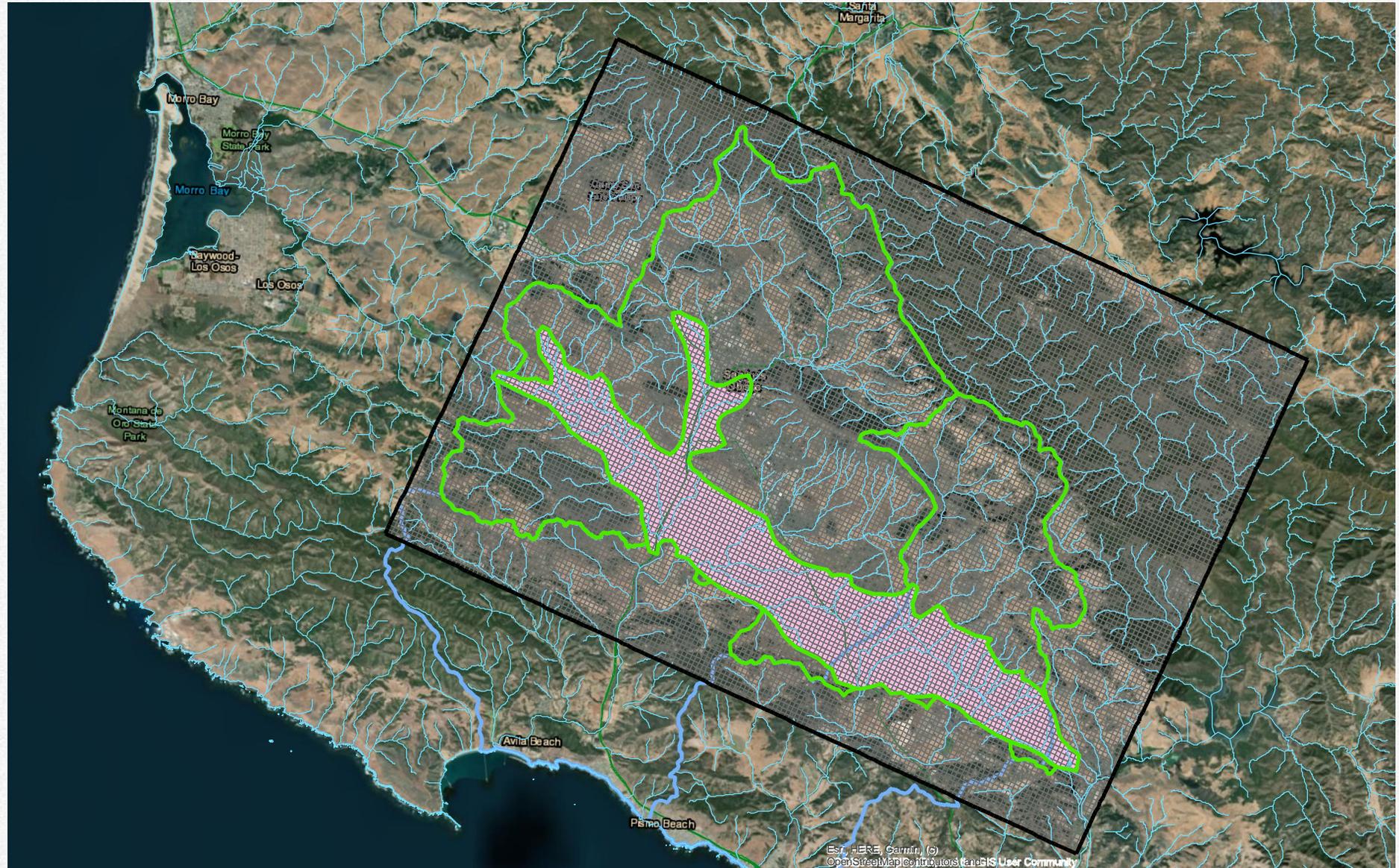
Dave O'Rourke, GSI

Integrated Groundwater/Surface Water Model

- Model – A simplified or idealized representation of reality
- Groundwater model is a tool to estimate effects of changing management actions or projects.
- The integrated model (using GSFLOW) will model both rainfall/runoff in upland watershed and groundwater flow in the Basin.
- $GSFLOW = MODFLOW$ (groundwater flow) + PRMS (rainfall/runoff)
- Calibrate the model to past observed conditions to gain confidence that system is accurately represented.
- Generate predictive simulations to model effects of projects, pumping changes, etc.

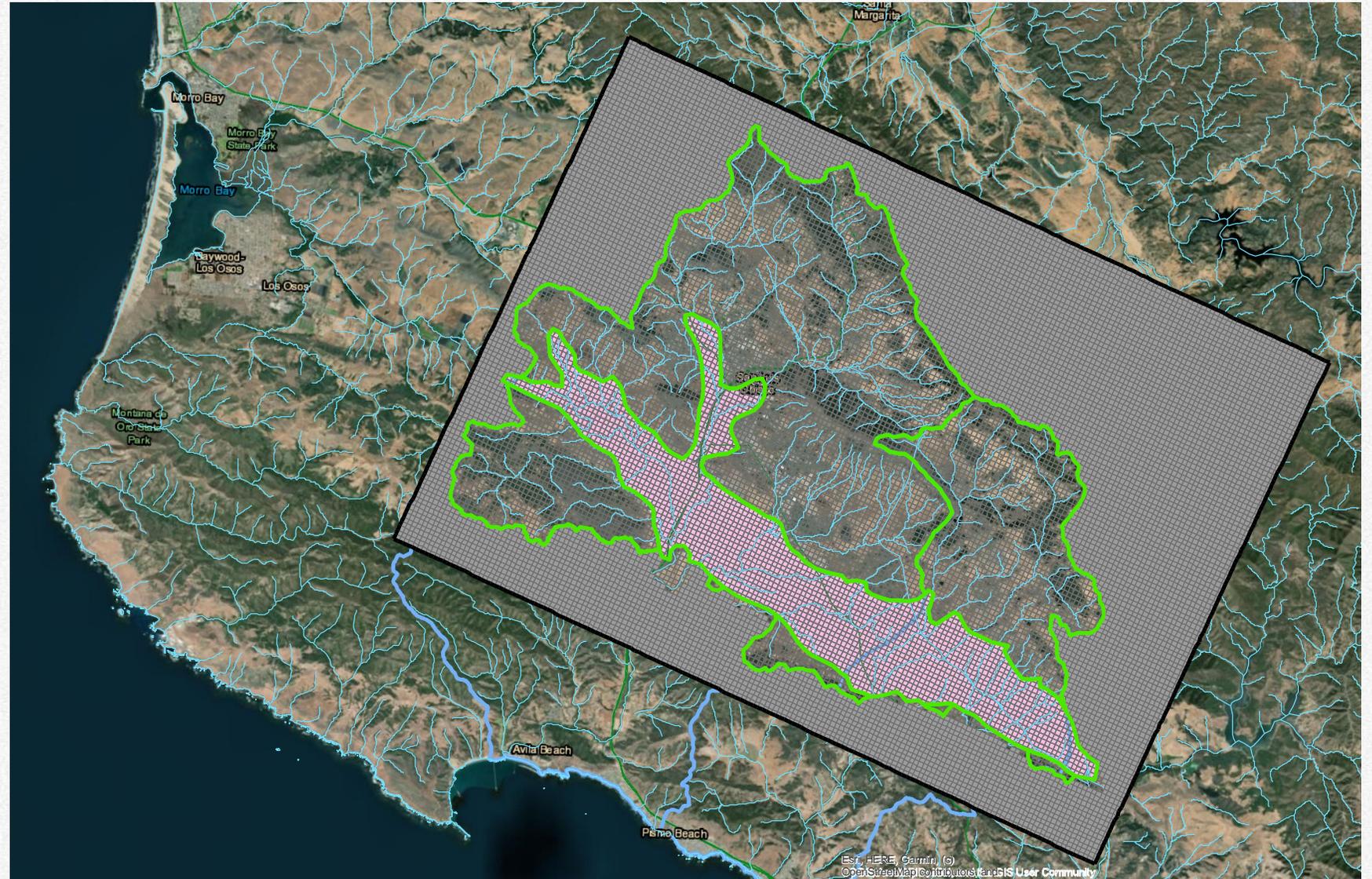
Model Grid

- Includes watershed areas that flow into Basin.
- 500 ft x 500 ft cells
- 115 Rows by 160 Columns
- 4 Layers:
 - Alluvium
 - Paso Robles Formation
 - Squire Member
 - Undifferentiated bedrock.



Active Area

- Omit areas outside of contributing watershed or downstream of Basin.

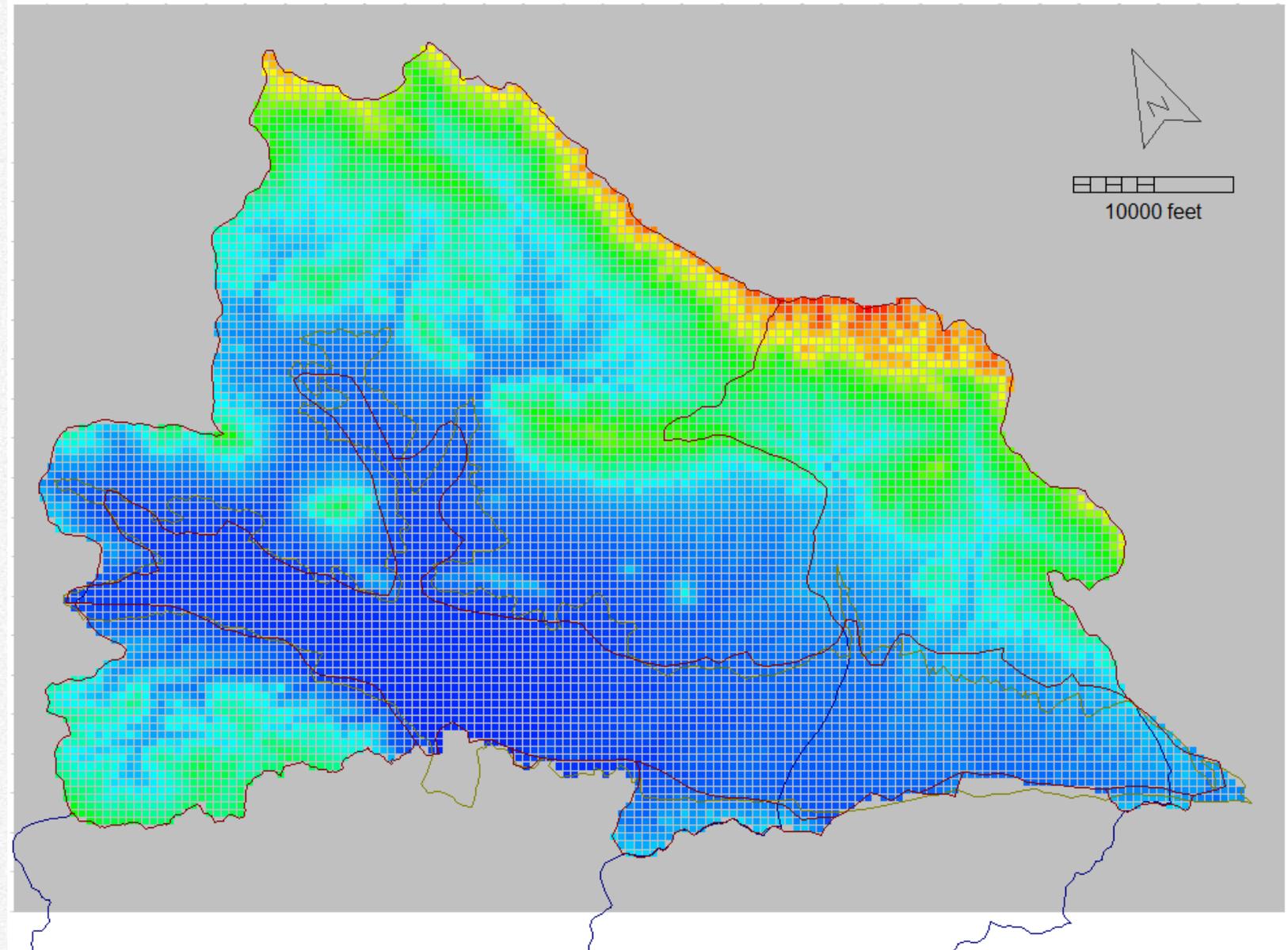


Grid Detail



Preliminary MODFLOW

- Incorporates grid and land surface elevations.
- Assignment of aquifer thicknesses not yet complete.





A PREVIEW OF WHAT'S NEXT

Michael Cruikshank, WSC

Timeline of Events



SLO Basin GSP Development Quarterly Newsletter Volume 2

Released in October via
SLOWaterBasin.com

- Meeting Summaries
- Project Milestones and Opportunities to Participate
- Project Timeline
- Key Terms



SECURING SUSTAINABLE GROUNDWATER
in the SLO Basin

A QUARTERLY UPDATE OF THE SLO BASIN GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT
VOLUME 1 | JULY 2019

Building a Sustainable Groundwater Future in the SLO Basin

During a normal year, nearly 40 percent of California's agricultural and urban water demand is met by the use of groundwater, which has resulted in declining groundwater levels in some groundwater basins throughout California. In an effort to ensure the sustainable use of California's groundwater and a water-secure future for the State, the Sustainable Groundwater Management Act (SGMA) was signed into law in 2014. The California Department of Water Resources (DWR) prioritized 515 groundwater basins in California into one of four categories; high, medium, low or very low priority based on a set of criteria.

SGMA is a State law that requires local governments and water agencies that overlie high and medium priority basins to form Groundwater Sustainability Agencies (GSAs) for the purpose of sustainably managing the groundwater basins. Locally, the San Luis Obispo Valley Groundwater Basin (SLO Basin) has been identified as a high priority basin by the State. Therefore, to meet SGMA requirements, the County of San Luis Obispo (County) and the City of San Luis Obispo (City) each formed a GSA. These two GSAs are the governmental entities tasked with developing and implementing the SLO Basin's Groundwater Sustainability Plan (GSP).

Although the GSAs were formed by the two local public agencies, representatives of the Golden State Water Company, Edna Ranch Mutual Water Company, Varian Ranch Mutual Water Company, and Edna Valley

Growers Mutual Water Company were engaged in developing a governance structure. In addition to the formation of the two GSAs, a Groundwater Sustainability Commission (GSC) — an advisory body to the GSAs — was established through a Memorandum of Agreement (MOA) between the GSAs and the above participating parties, and the terms under which the City GSA and County GSA will jointly develop a single GSP in coordination with the GSC.

GSP development recently began and will continue through January 2022. All interested stakeholders and members of the public are encouraged to participate to help guide the GSP development process. Visit SLOWaterBasin.com for details on how you can participate in this important process.

In this issue

- MEETING SUMMARIES — p. 2
- HOW TO PARTICIPATE — p. 3
- PROJECT TIMELINE — p. 4
- KEY TERMS — p. 4

Why am I receiving this?

- » You live or work in the SLO Basin
- » You may be affected by the SLO Basin's groundwater use
- » You subscribed to receive updates about SGMA or GSP development

Through the duration of the SLO Basin GSP development, this newsletter will be distributed quarterly to all subscribers of the SLOWaterBasin.com Portal and made available at GSC meetings and stakeholder workshops. To stop receiving these newsletters, go to SLOWaterBasin.com, scroll to the bottom of the page and click "unsubscribe."



THE SLO BASIN

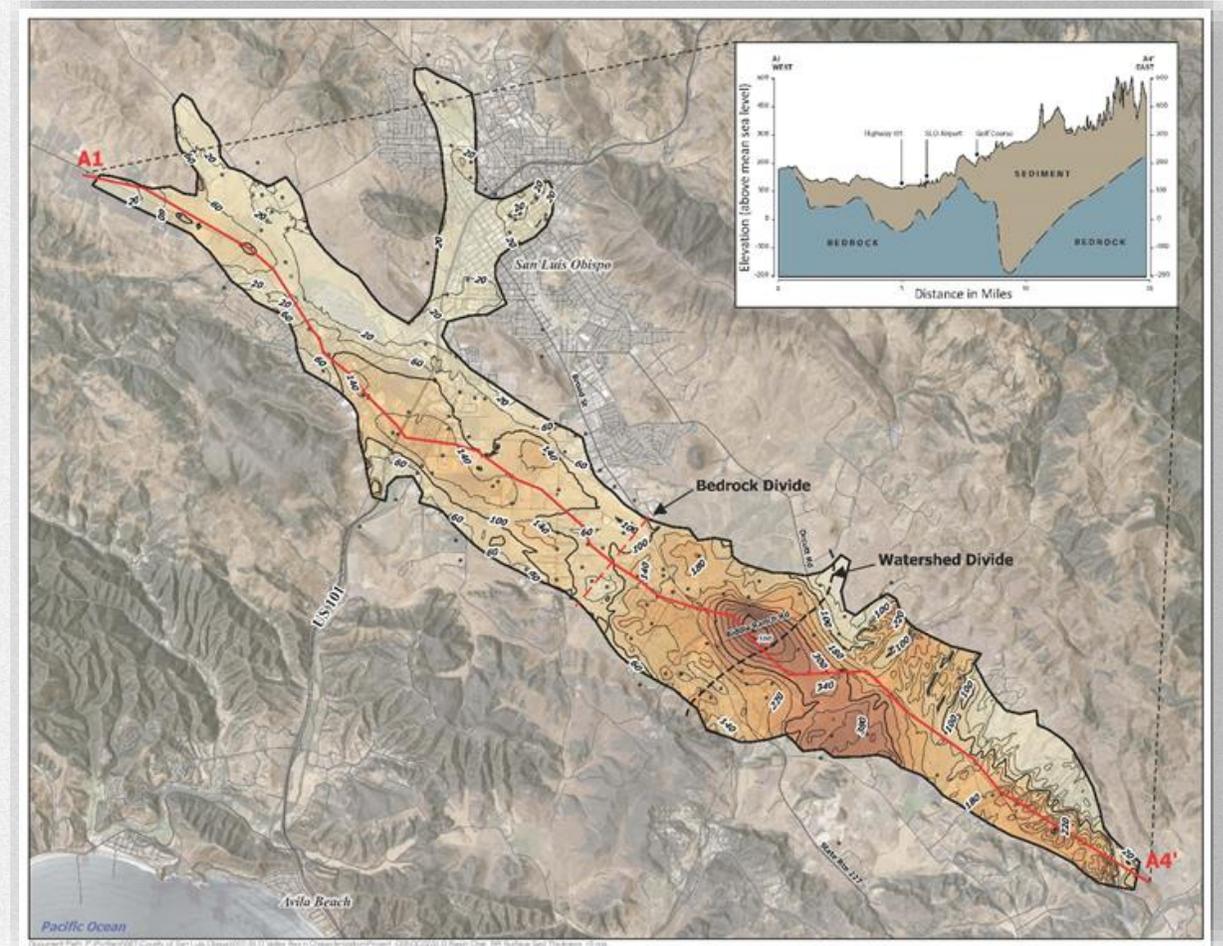
SAN LUIS VALLEY CITY OF SAN LUIS OBISPO EDNA VALLEY

TO PISMO

SLOWaterBasin.com — GET INVOLVED NOW

Upcoming Chapters For Review Released at the December GSC Meeting

- Chapter 3 – Plan Area
- Chapter 4 – Basin Setting
- Chapter 5 – Groundwater Conditions



Workshop #2 Sustainability vision and goals for SLO Basin

TBD: February 2020



GROUNDWATER SUSTAINABILITY INDICATORS



Chronic Lowering of
Groundwater Levels



Water Quality
Degradation



Reduction of
Groundwater
Storage



Interconnected
Surface Water
Depletions



Land Subsidence



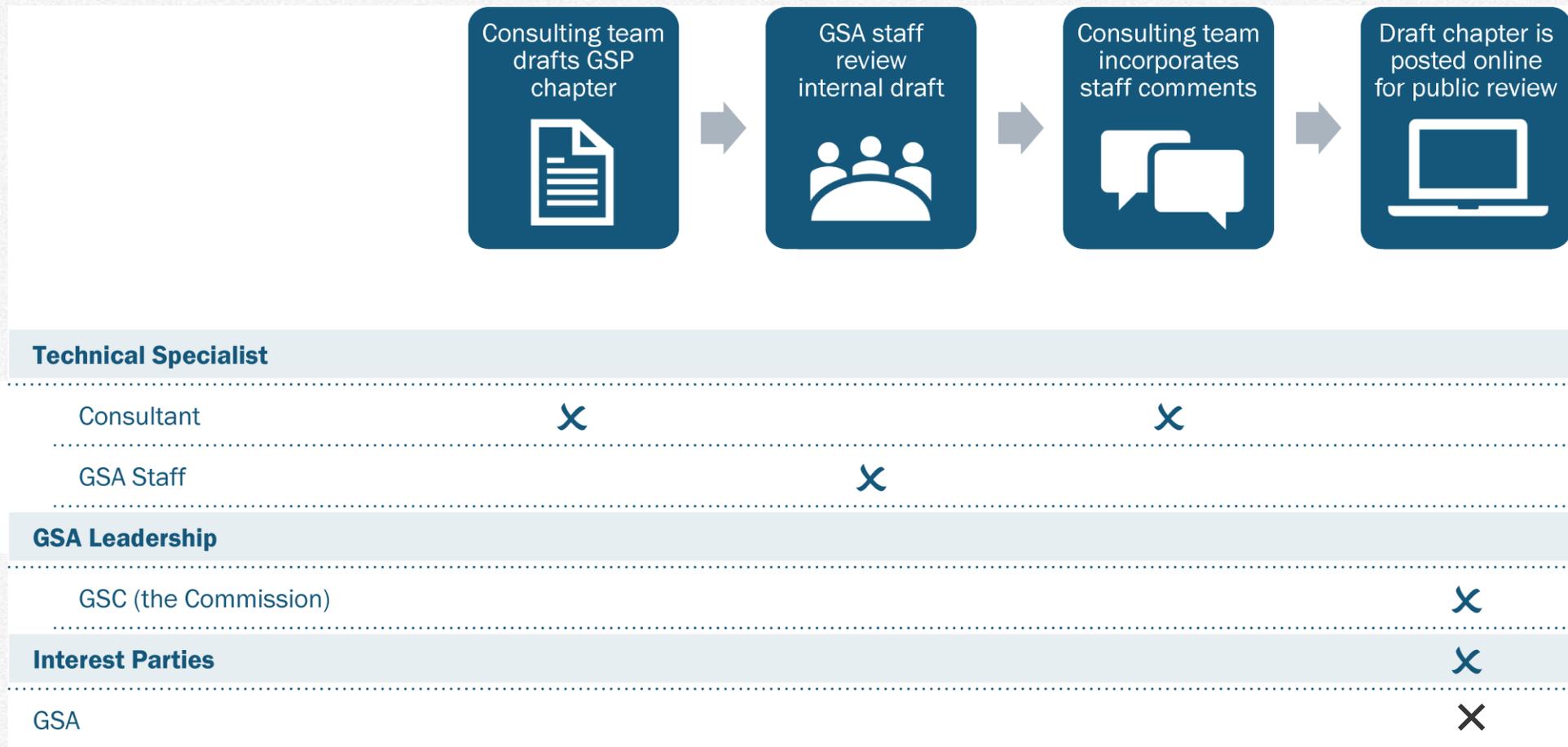
Seawater Intrusion



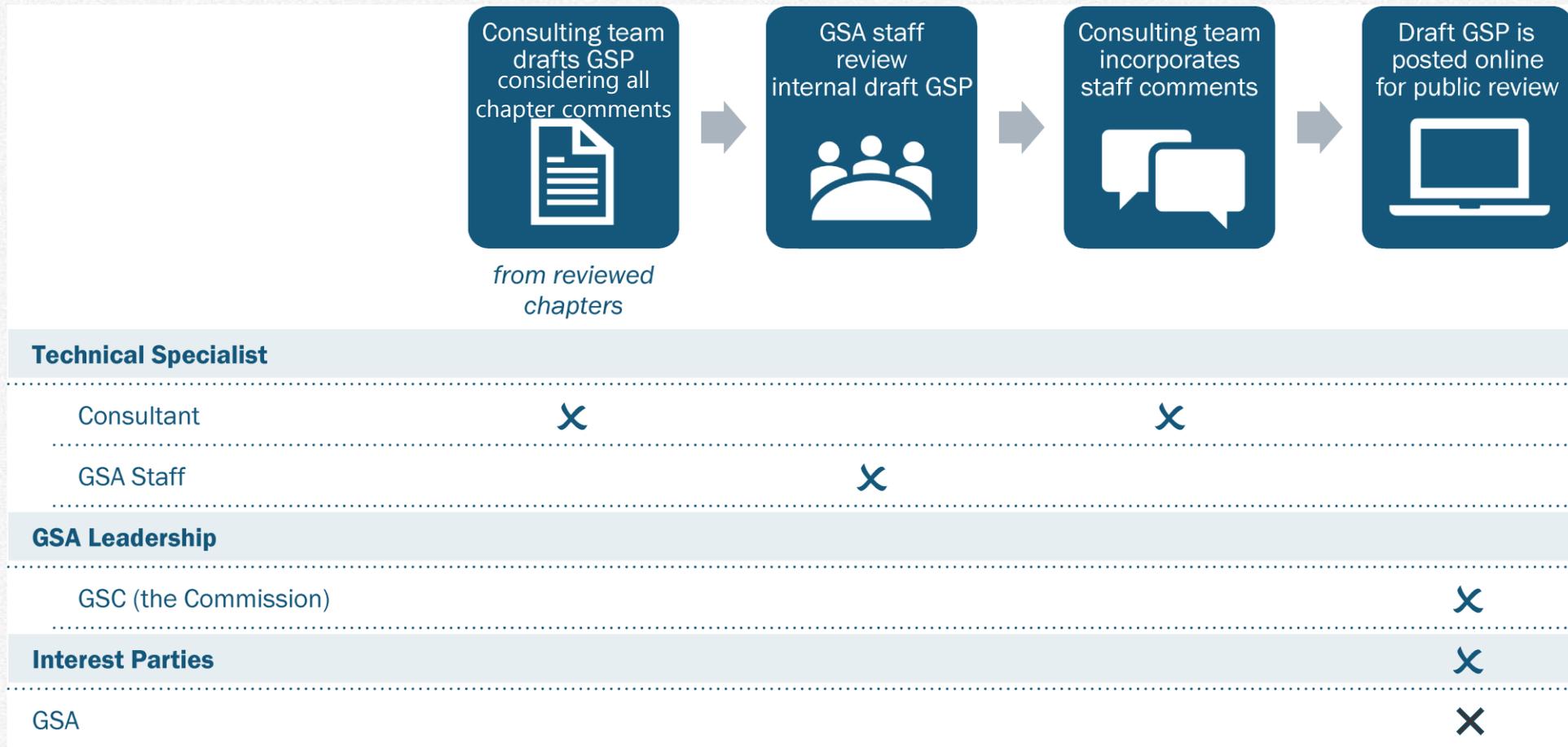
GSP REVIEW PROCESS UPDATE

Dick Tzou, County of San Luis Obispo

GSP CHAPTER REVIEW PROCESS



GSP REVIEW PROCESS



GSP APPROVAL PROCESS

