Santa Maria Basin
Basin Boundary Modification Requests
April 12, 2018
Arroyo Grande, CA

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Agenda

Overview of Feedback and Clarification

Santa Maria Basin Boundary Modification Requests

Key Dates and Next Steps

Q&A

General Comments Received

Received about 10 comments:

- General support written and verbal
- Technical clarifications on the draft study report
- Concerns about potential future groundwater quality issues in the Pismo Creek Fringe Area due to the Arroyo Grande Oil Field

Some Water Quality Laws

Federal Safe Drinking Water Act (SDWA) (1974)

- Protects the quality of all surface and underground drinking water in the US
- Protects underground sources from endangerment by underground injection of fluids

California Porter-Cologne Water Quality Control Act (1969)

- Protects both surface and groundwater quality in the State

Sustainable Groundwater Management Act (2014)

- Establishes sustainable management in groundwater basins
  - Prevents or mitigates the six undesirable results

Coordinated Oversight and Implementation of Groundwater Laws

Regulatory Agencies:

1. US Environmental Protection Agency (EPA)
2. California Division of Oil, Gas, and Geothermal Resources (DOGGR)
3. Water Boards (State and Regional)

Coordinated Oversight and Implementation of Groundwater Laws

Local Agencies:

4. County of San Luis Obispo
5. Groundwater Sustainability Agency (GSA)

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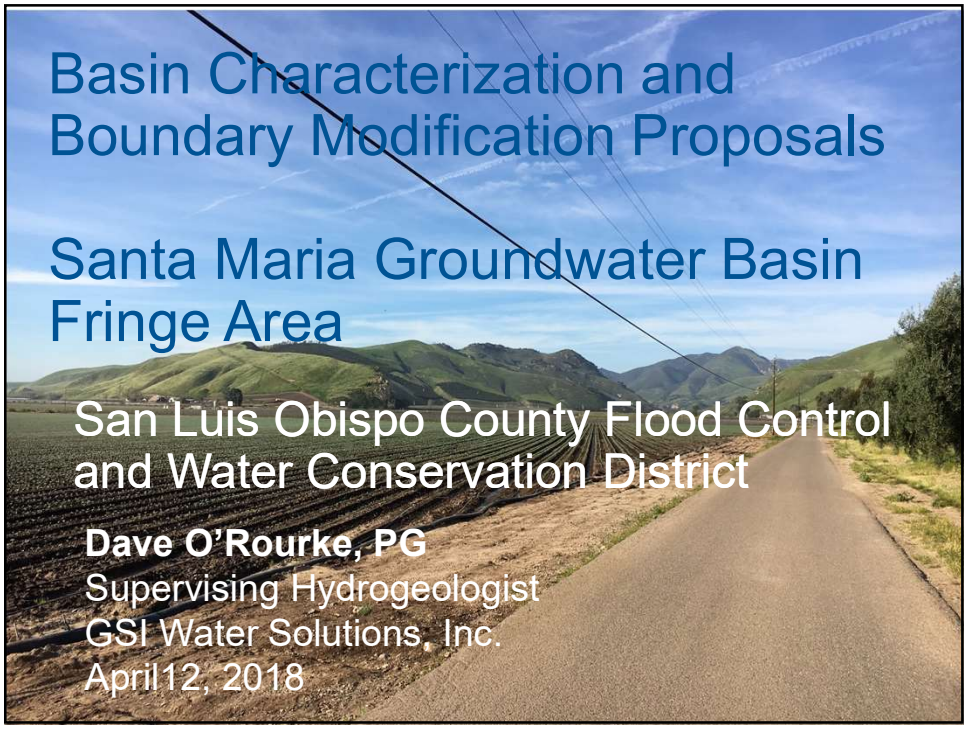
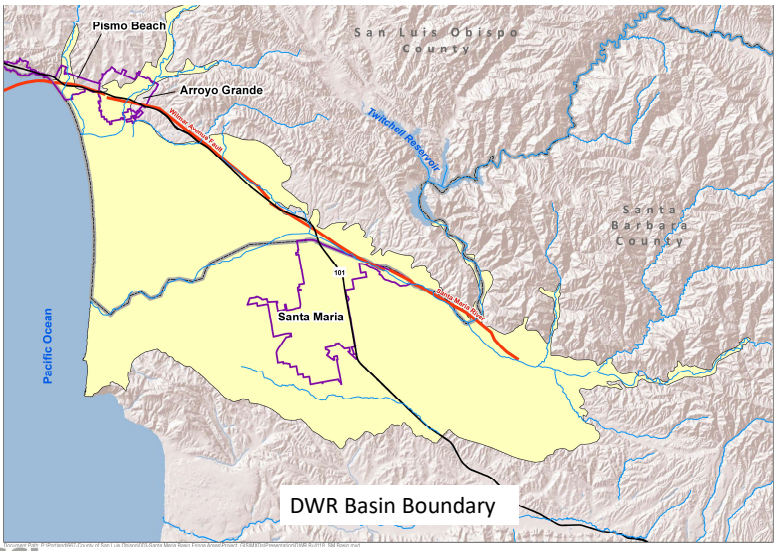
GSI Scope of Work

- **Prepare geologic and hydrogeologic characterization of Fringe Areas**
  - Well completion reports, basin extent, boring logs, cross sections, aquifer tests, water levels, flow calculations, geophysical study, etc.
- **Evaluate hydrogeologic connection between Fringe Areas and Adjudicated Area**
  - Effect of faults, groundwater underflow, comparative water levels, relative productivity, etc.
- **Technical Reports**
  - Characterization Report (Foundational Study), BBMR Technical Report for submission to DWR



Santa Maria River Valley Groundwater Basin (SMRVGB)



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What is SGMA?

- **Sustainable Groundwater Management Act**
  - Groundwater Sustainability Agencies by 2017
  - Groundwater Sustainability Plans in 2022
  - Annual reporting requirements
  - Sustainability by 2042

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What is Adjudication?

- A formal court judgment on a disputed matter over legal rights to the water supply.
  - Court defines the area
  - Results in a legally binding set of required groundwater management actions
- SMRVGB adjudication.
  - Judgment finalized in 2008
  - Three management areas (NCMA, NMMA, SMVMA)

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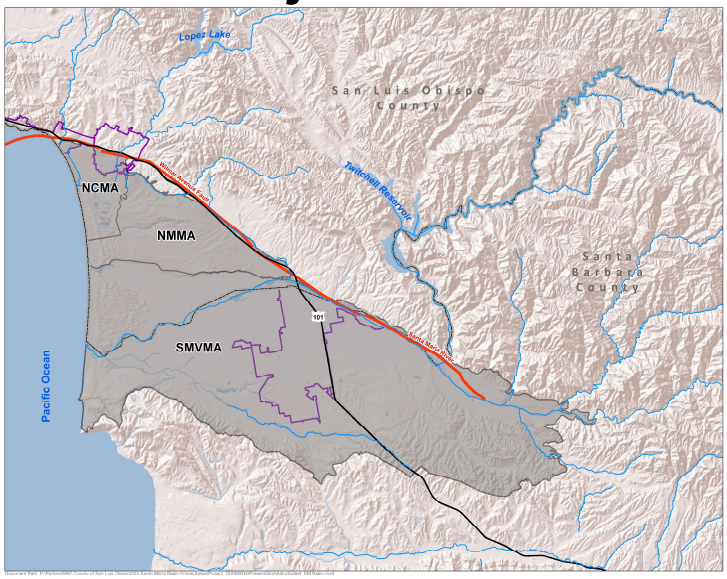
SMRVGB Adjudicated Boundary



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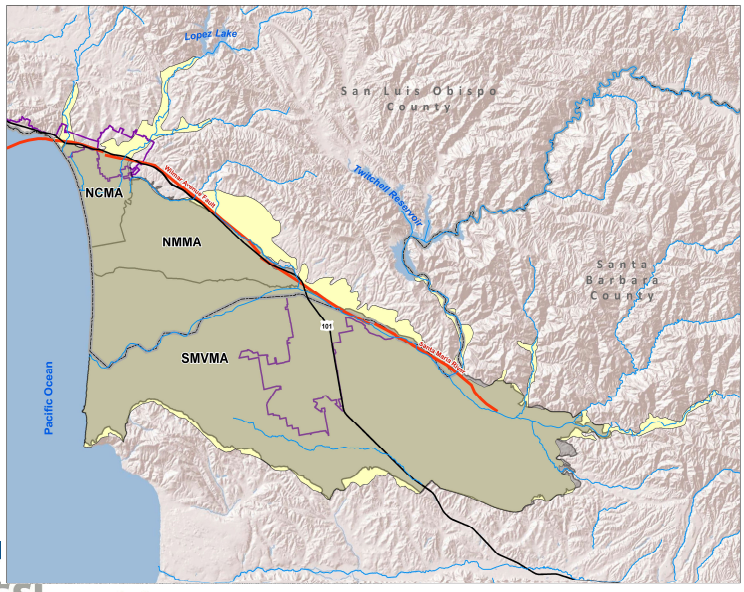
What is a Fringe Area?



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What is BBMR?

- **B**asin **B**oundary **M**odification **R**equest
  - A State-defined administrative process to amend established Basin Boundaries
  - Based on scientific and technical characterization
  - Must be submitted to DWR by June 30, 2018.

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Why Request BBMR?

- Why pursue BBMR?
  - Reconcile scientific basis of boundary
  - Focus resources where needed
- Options in SMRVGB Fringe Areas
  - Request concurrence that a fringe area is a non-basin (scientifically exclude from SMRVGB)
  - Scientifically re-define fringe area as hydrologically distinct <u>subbasin</u> of SMRVGB

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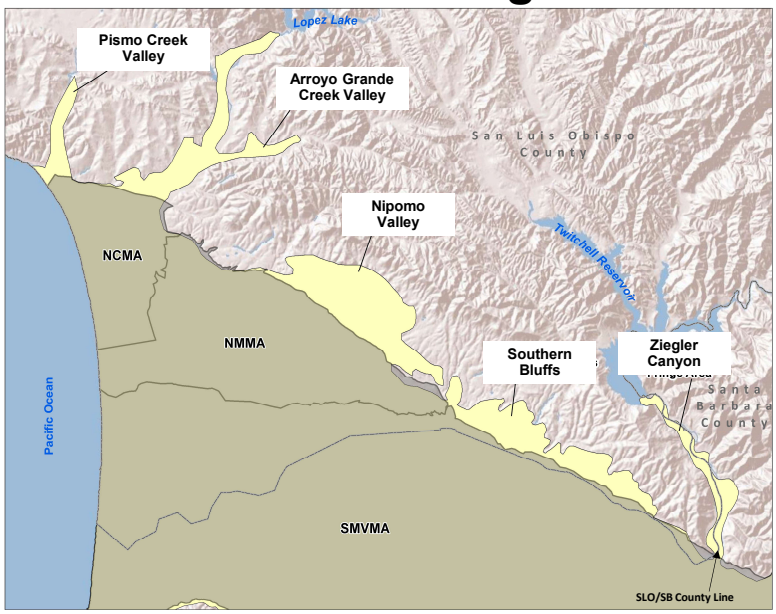
Overview of Fringe Areas



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Approach to Basin Characterization

- Physical Setting – Air photos, topographic maps, land use, water use, hydrology
- Geologic Setting – Geologic maps, cross sections
- Hydrogeologic Setting – Hydraulic parameters, hydrographs, water level maps, SW/GW interaction, underflow calculations

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Pismo Creek Valley Fringe Area

Basin Boundary Modification Request

Modification Request Number 1:

Scientific External Boundary Modification

Exclude the Pismo Creek Valley Fringe Area from the SMRVGB and modify the Basin boundary to be coincident with the adjudicated area boundary.

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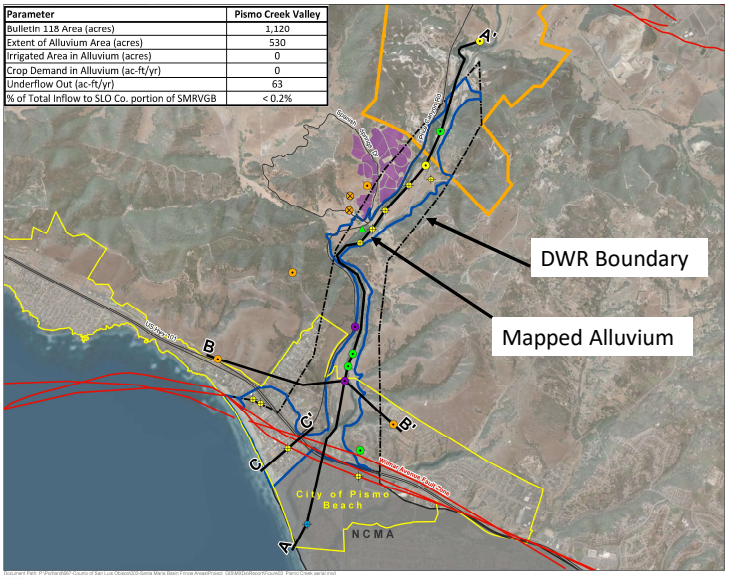
Pismo Creek Valley

Parameter	Pismo Creek Valley
Bulletin 118 Area (acres)	1,120
Extent of Alluvium Area (acres)	530
Irrigated Area in Alluvium (acres)	0
Crop Demand in Alluvium (ac-ft/yr)	0
Underflow Out (ac-ft/yr)	63
% of Total Inflow to SLO Co. portion of SMRVGB	< 0.2%



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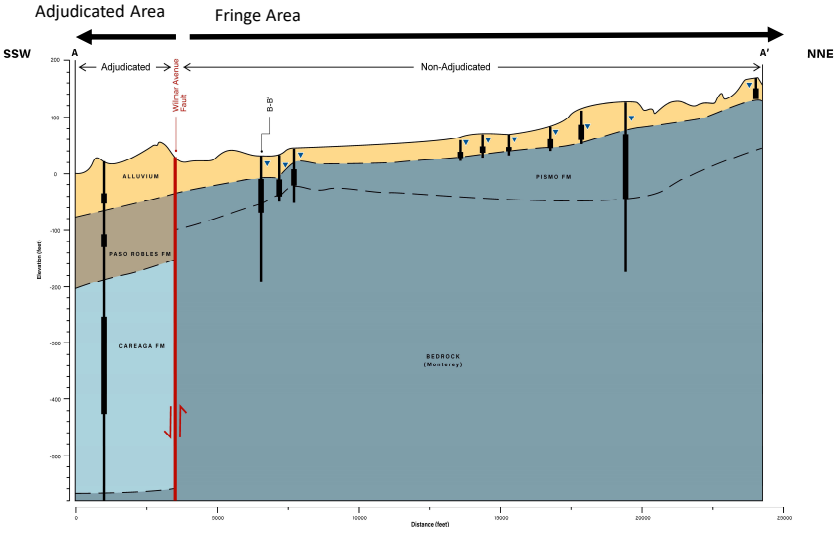
Pismo Creek Valley Cross Section A-A'



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Pismo Creek Fringe Area Summary

- No significant alluvial groundwater use.
- Underflow to SMRVGB estimated at 63 AFY, or 0.2% total recharge to Basin. Not significant.
- Wilmar Avenue Fault places hundreds of feet of Basin sediments against bedrock
- Actions in the Basin do not affect groundwater sustainability in Pismo Creek Valley, vice versa

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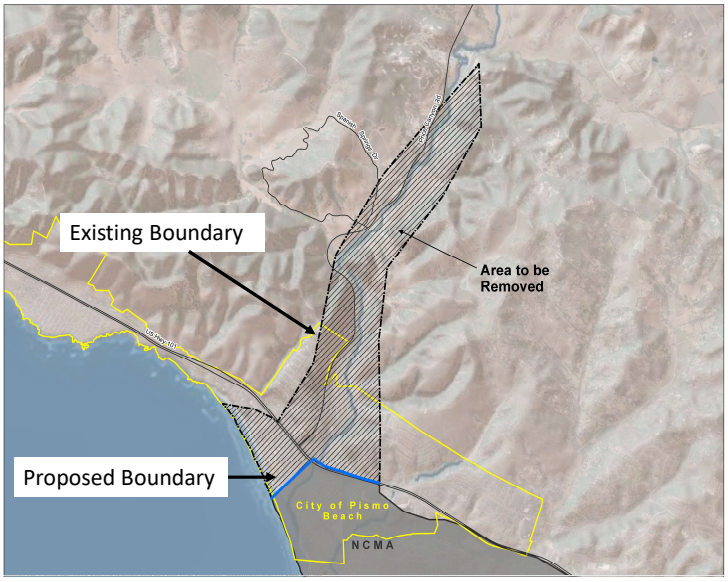
Pismo Creek Fringe Area BBMR



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Arroyo Grande Creek

Basin Boundary Modification Request

Modification Request Number 2 – Amend the boundary of the Arroyo Grande Creek Valley Fringe Area northeast of the adjudicated area boundary to coincide with the mapped extent of the Recent Alluvium.

Modification Request Number 3 – Create a new "Santa Maria River Valley – Arroyo Grande Subbasin" defined by the extent of mapped Recent Alluvium north of the adjudicated area boundary.

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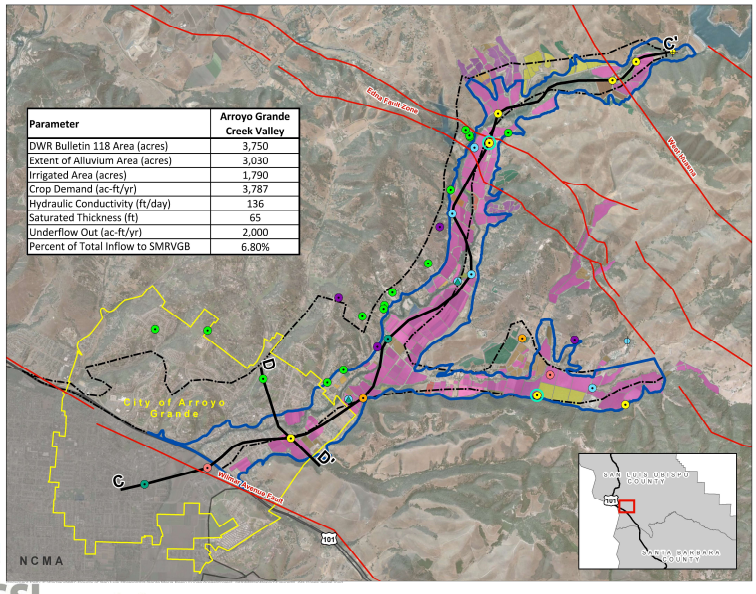
Arroyo Grande Creek Valley



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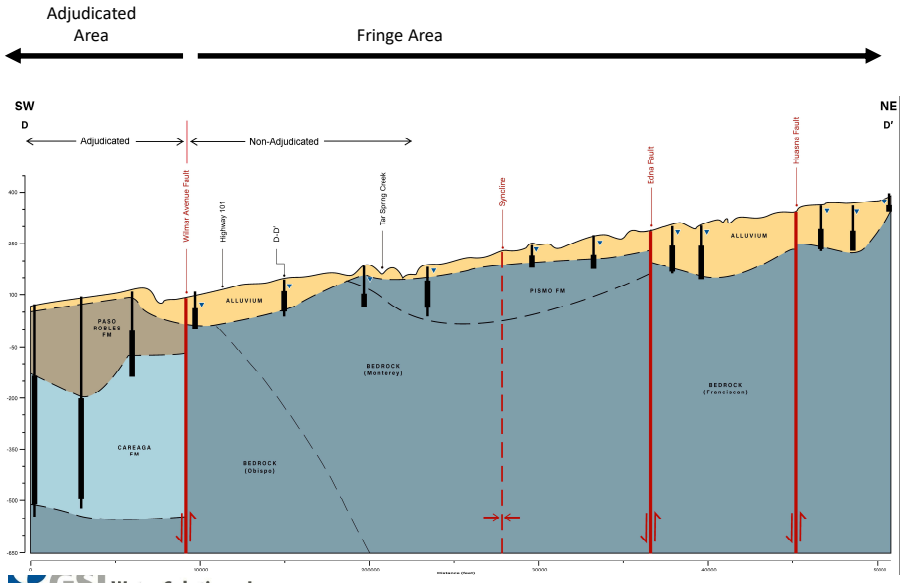
Arroyo Grande Creek Valley Cross Section D-D'



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Arroyo Grande Creek Fringe Area Summary

- Significant use of groundwater for irrigation.
- Groundwater levels are stable, due to regular recharge of alluvium from Lake Lopez releases.
- Underflow to SMRVGB estimated at 2,000 AFY, or 7% total recharge of Basin.
- Wilmar Avenue Fault places Basin sediments against bedrock.

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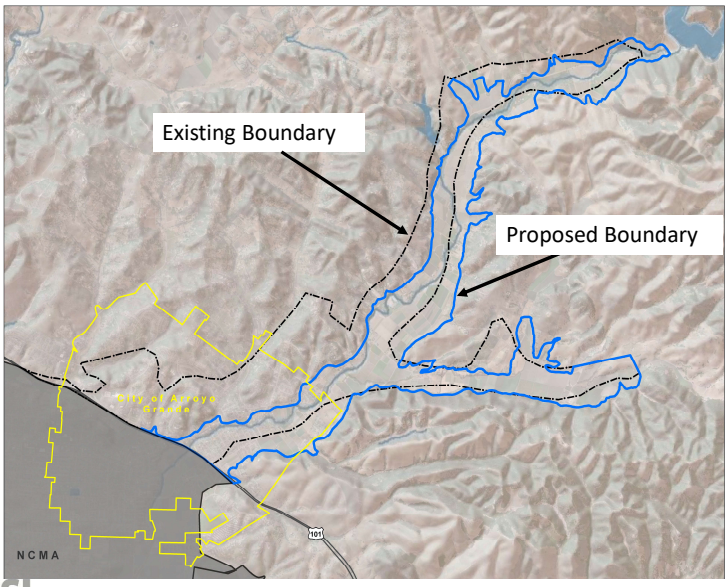
Arroyo Grande Creek Fringe Area BBMR



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Nipomo Valley

Basin Boundary Modification Request

Modification Request Number 4 — Exclude the Nipomo Valley Fringe Area from the SMRVGB, and modify the Basin boundary to be coincident with the adjudicated area boundary.

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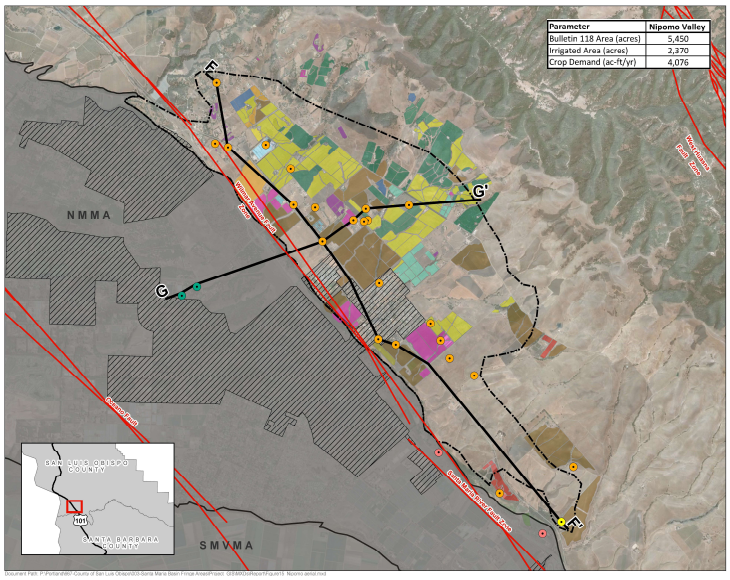
Nipomo Valley



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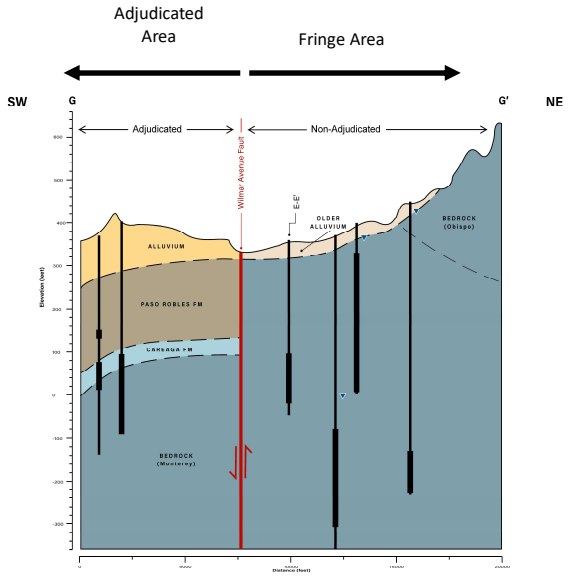
Nipomo Valley Cross Section G-G'



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Nipomo Valley Fringe Area Summary

- Older Alluvium is not an aquifer
- Groundwater use is from bedrock formations, which are not part of the Basin
- Wilmar Avenue Fault places bedrock against the sediments of the SMRVGB

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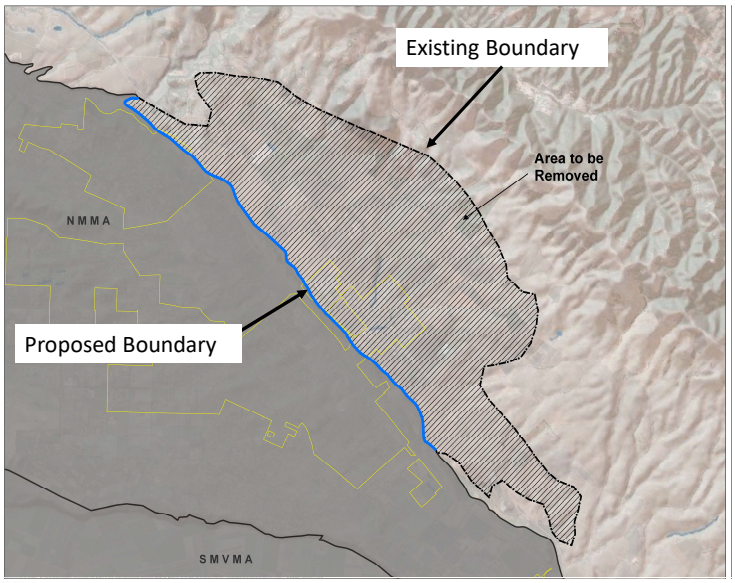
Nipomo Valley Fringe Area BBMR



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Southern Bluffs

Basin Boundary Modification Request

Modification Request Number 5 –Exclude the Southern Bluffs Fringe Area from the SMRVGB, and modify the Basin boundary to be coincident with the adjudicated area boundary.

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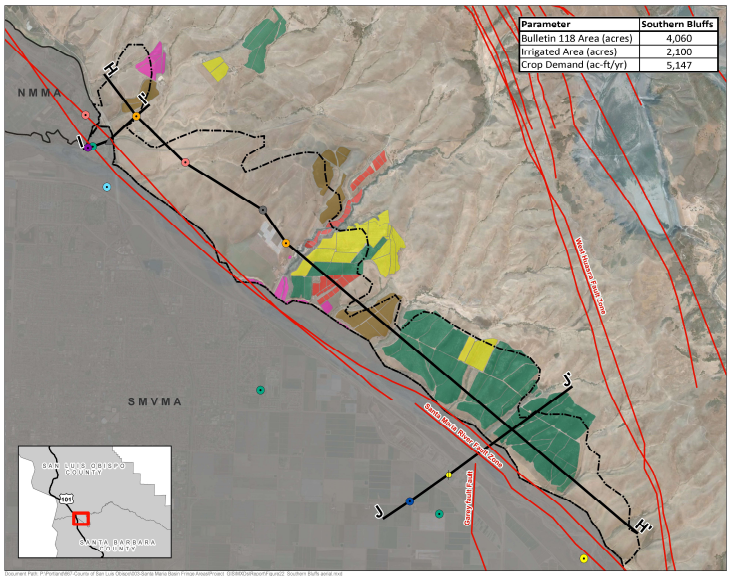
Southern Bluffs



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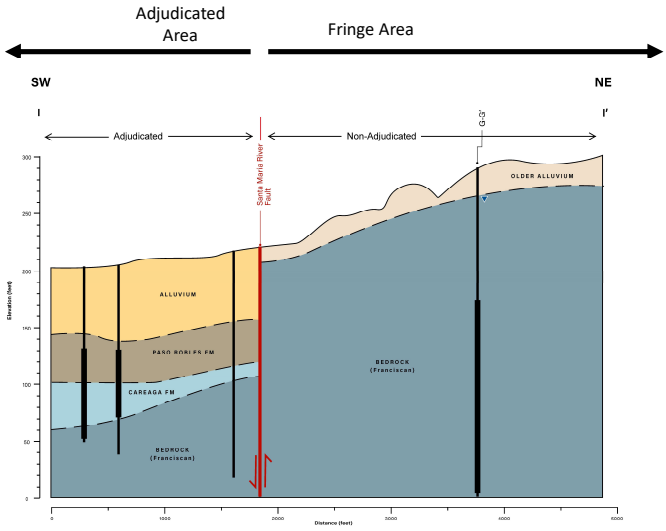
Southern Bluffs Cross Section I-I'



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Southern Bluffs Fringe Area Summary

- Orcutt Formation (like Older Alluvium in Nipomo Valley) is not an aquifer.
- Groundwater use draws from bedrock formations, which are not part of SMRVGB.
- Wilmar Avenue Fault/Santa Maria River Fault places bedrock against the sediments of the SMRVGB.

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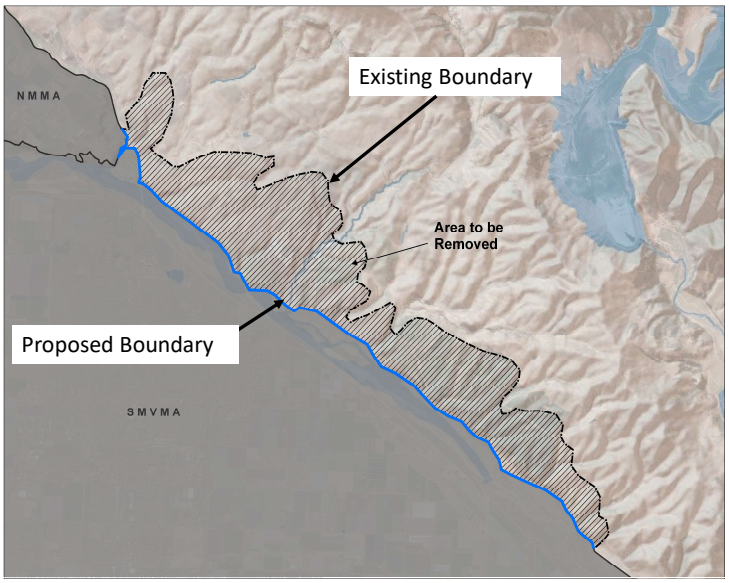
Southern Bluffs Fringe Area BBMR



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Ziegler Canyon

Basin Boundary Modification Request

Modification Request Number 6 –Exclude the Ziegler Canyon Fringe Area from the SMRVGB, and modify the Basin boundary to be coincident with the adjudicated area boundary.

(Request to be designated a separate subbasin of SMRVGB, with refined alluvial boundary.)

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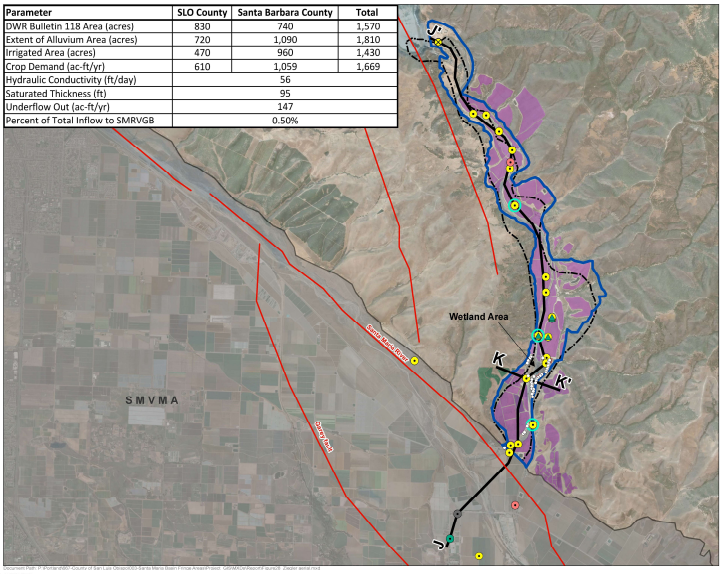
Ziegler Canyon

Parameter	SLO County	Santa Barbara County	Total
DWR Bulletin 118 Area (acres)	830	740	1,570
Extent of Alluvium Area (acres)	720	1,090	1,810
Irrigated Area (acres)	470	960	1,430
Crop Demand (ac-ft/yr)	610	1,059	1,669
Hydraulic Conductivity (ft/day)	56		
Saturated Thickness (ft)	95		
Underflow Out (ac-ft/yr)	147		
Percent of Total Inflow to SMRVGB	0.50%		



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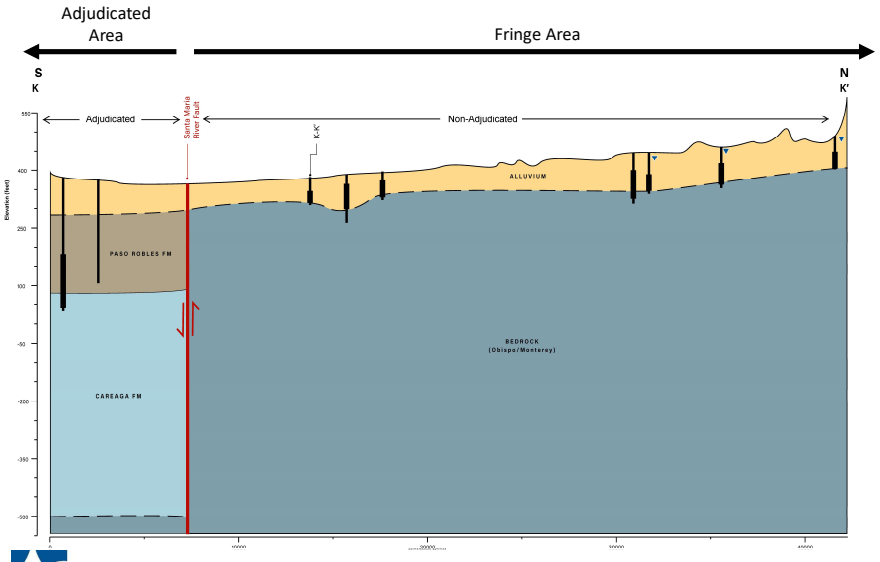
Ziegler Canyon Cross Section K-K'



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Ziegler Canyon Fringe Area Summary

- Significant irrigation use
- Fault places bedrock against SMRVGB sediments
- Groundwater levels return to pre-drought levels with Twitchell downstream releases
- Underflow to SMRVGB estimated at 0.1% total recharge
- Groundwater boundary isolates upper 75% of valley from SMRVGB

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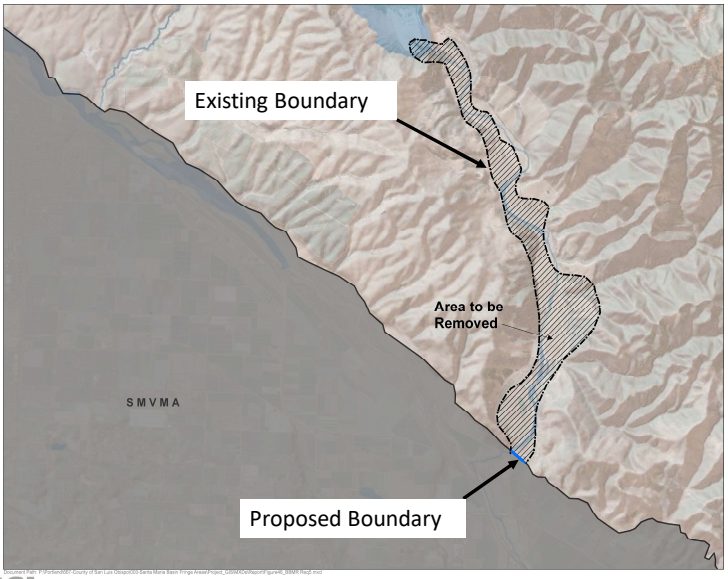
Ziegler Canyon Fringe Area BBMR



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Proposed BBMR Summary

- Nipomo Valley and Southern Bluffs
  - Exclude area from SMRVGB, designate area as “non-basin”.
- Pismo Creek and Ziegler Canyon
  - Exclude area from SMRVGB, designate area as “non-basin”.
- Arroyo Grande Creek
  - Create separate subbasin of SMRVGB.
  - Refine basin boundary consistent with mapped alluvium.

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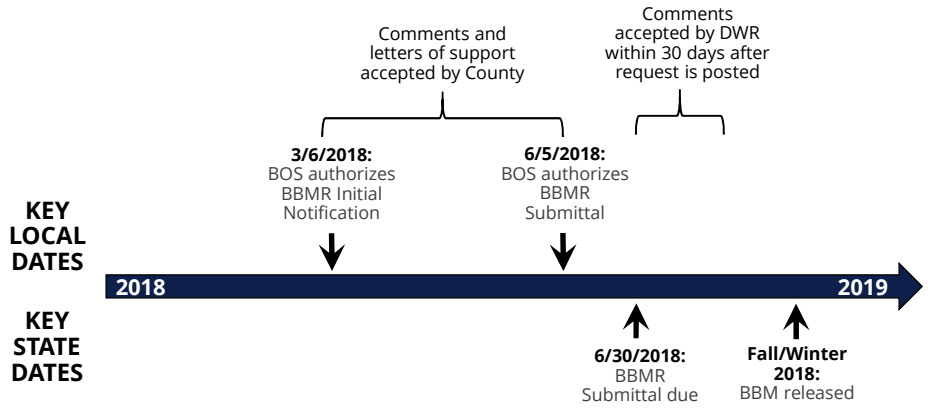
Key Dates



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Future Items

Public Review and Comments

- Draft reports may be viewed online at: https://slocountywater.org/sgma/
  - Santa Maria Basin Fringe Area Characterization Study (comments closed)
  - BBMR Technical Report (comments due 4/27/2018)
- All written comments may be submitted to dtzou@co.slo.ca.us
- Please see handout

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Questions and Feedback

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Thank you!

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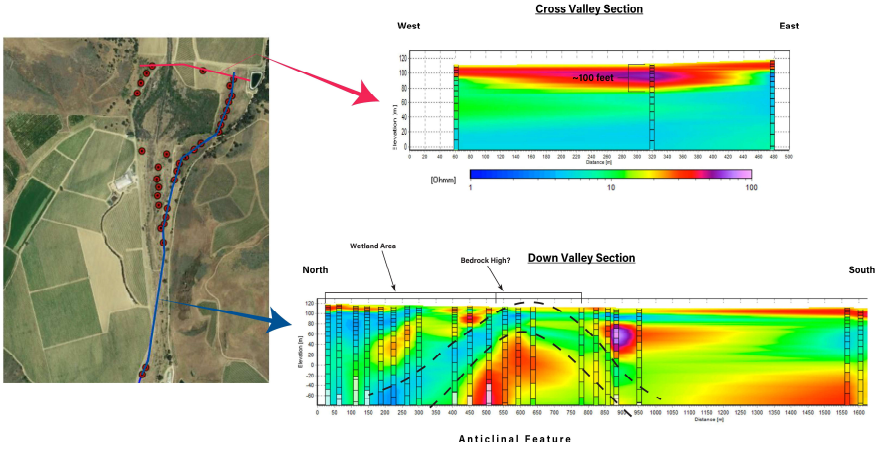
Ziegler Canyon
TDEM Surface Geophysical Survey



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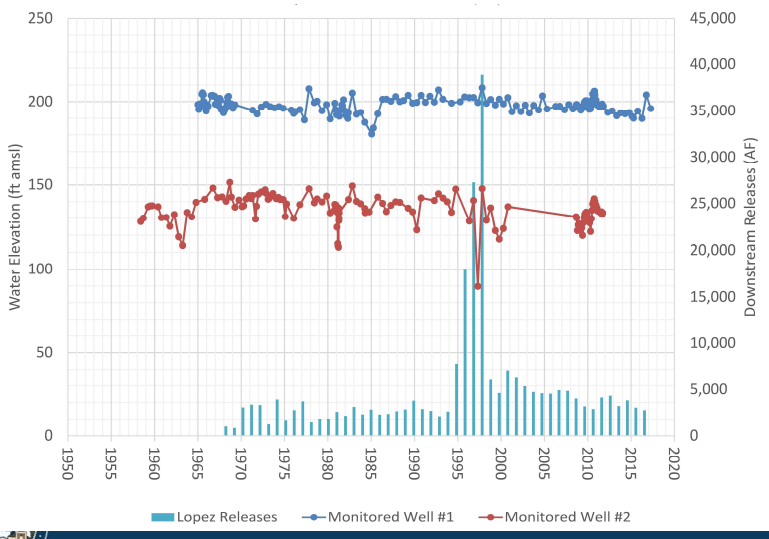
AG Groundwater Elevation Hydrographs and Lopez Downstream Releases



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