Eastern San Joaquin GSP Adoption

About SGMA

What is SGMA?

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

The **Sustainable Groundwater Management Act**, or SGMA, is new statewide legislation that establishes a path for the sustainable management of groundwater for the first time in California's history.

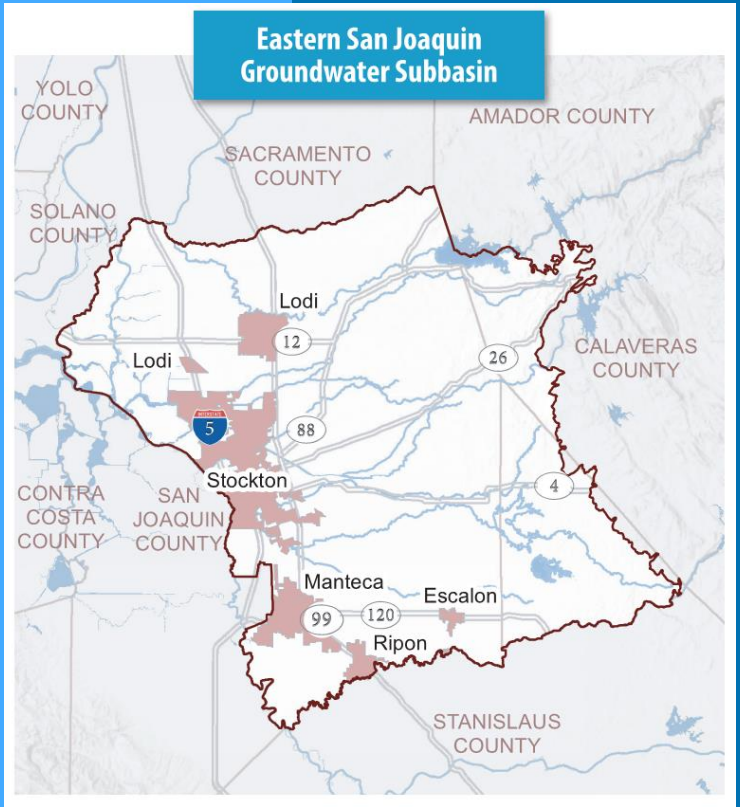
What Does SGMA Require?

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

- Groundwater Sustainability Agencies (GSAs) must be formed. GSAs must prepare and submit Groundwater Sustainability Plans (GSPs) by
  - **January 2020, for critically overdrafted basins**
  - January 2022, for remaining high and medium priority basins
- GSPs must include measurable objectives and milestones in increments of five years to achieve sustainability within 20 years of GSP adoption
- GSP development must be open and transparent

Where is the Eastern San Joaquin Subbasin Boundary?

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY



ESJ Subbasin boundaries:

- North – Dry Creek
- West – San Joaquin River
- South – Stanislaus River
- East – Sierra Nevada Bedrock Outcrop

1,195 square miles

Eastern San Joaquin is Classified as a High Priority Critically Overdrafted Basin

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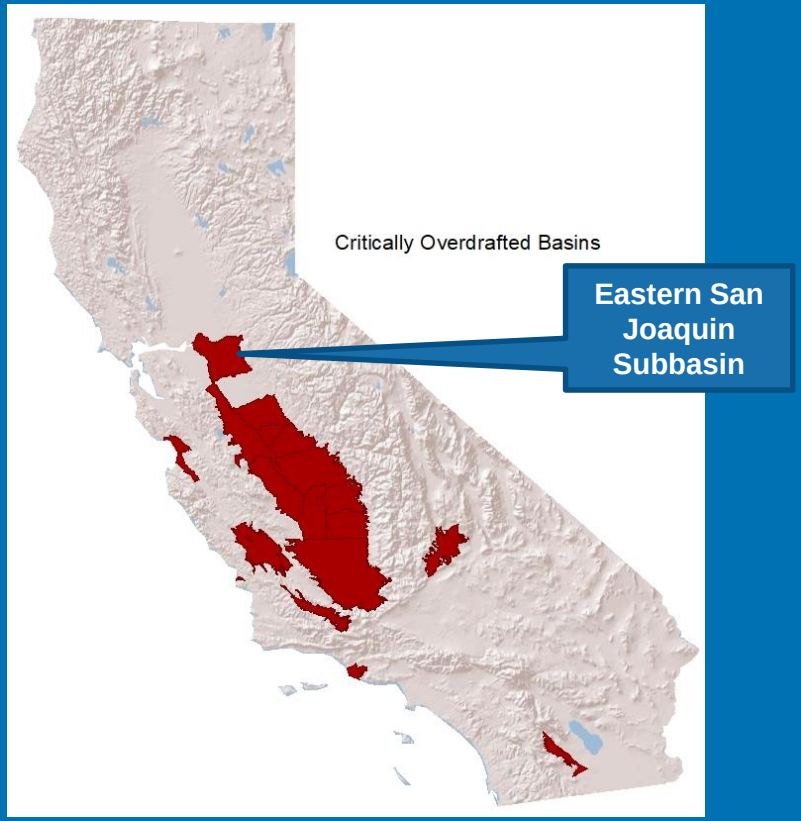


This means an accelerated GSP submittal deadline of January 31, 2020

GSP Development Approaches

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

1 Basin, 1 GSA, 1 Plan

- One GSA assumes responsibilities and authorities for the entire basin
- New or existing agency

1 Basin, Multiple GSAs, 1 Plan

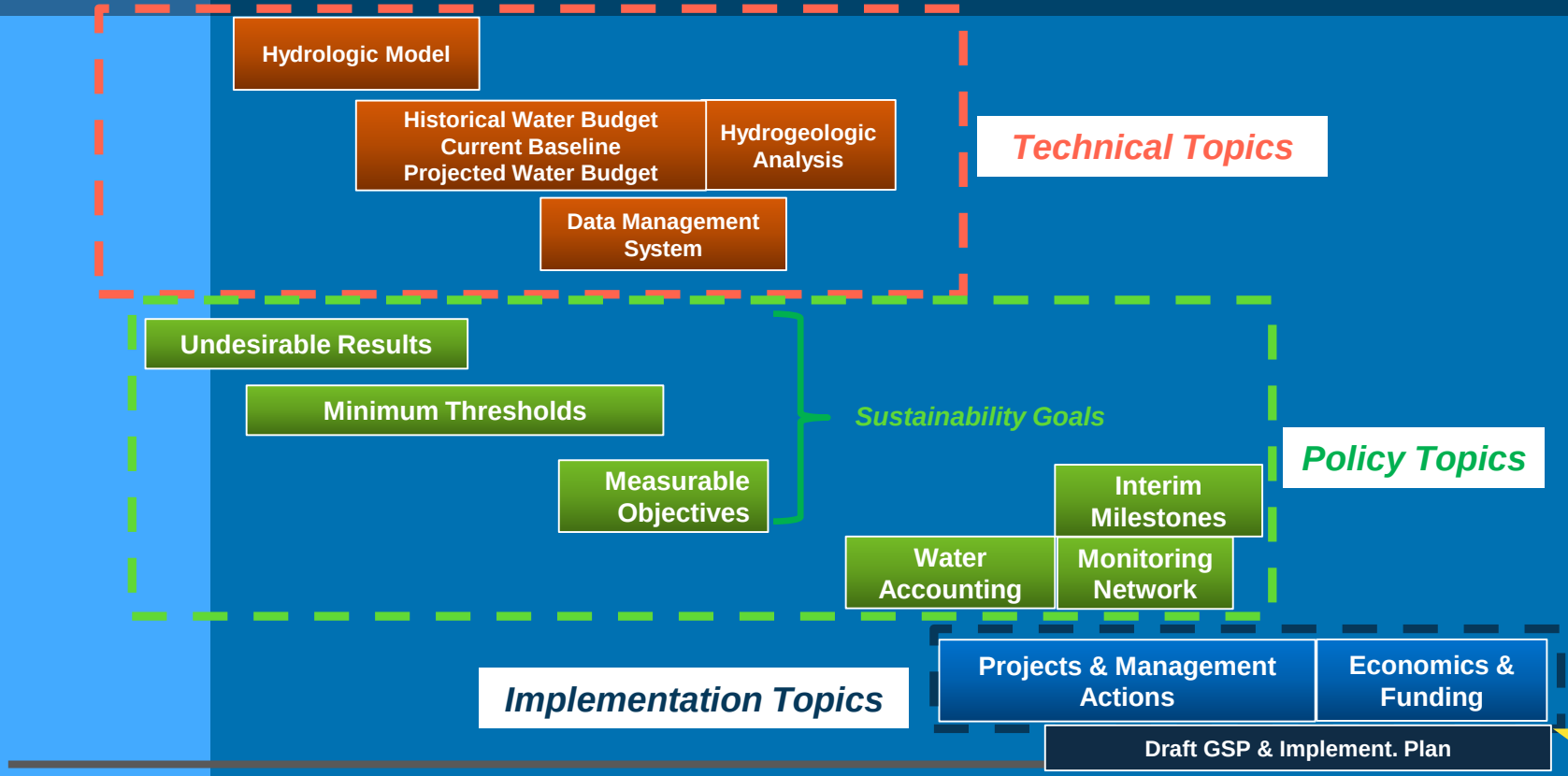
- Several GSAs in same basin
- Requires significant coordination among GSAs
- Still evaluated based on basin-level implementation of GSP

1 Basin, Multiple GSAs, Multiple Plans

- Flexibility in terms of responsibilities and authorities
- Requires a single coordination agreement among all GSAs for the entire basin
- Still evaluated based on basin-level implementation of GSP (could get messy)

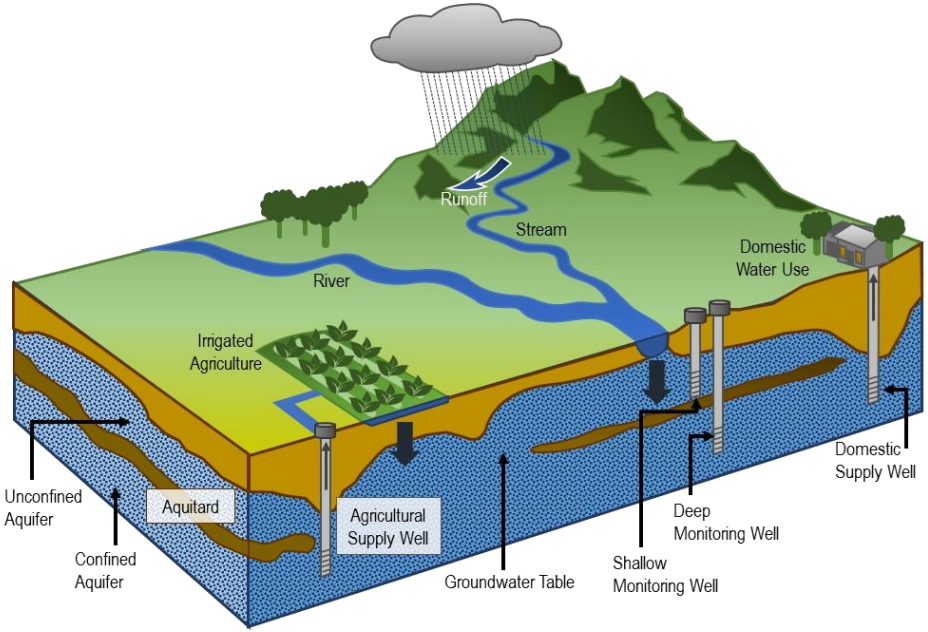
GSP Development Tasks

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY



SGMA Requires Accounting of All Water Uses and Sources

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY



- SGMA requires an accounting of all groundwater and surface water entering and leaving a basin
- Through SGMA, GSAs are required to bring the basin into balance, halting groundwater overdraft

SGMA Requires Six Sustainability Indicators to be Addressed

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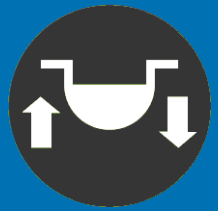
Chronic lowering of groundwater levels

Degraded water quality

Reduction of groundwater storage

Land subsidence

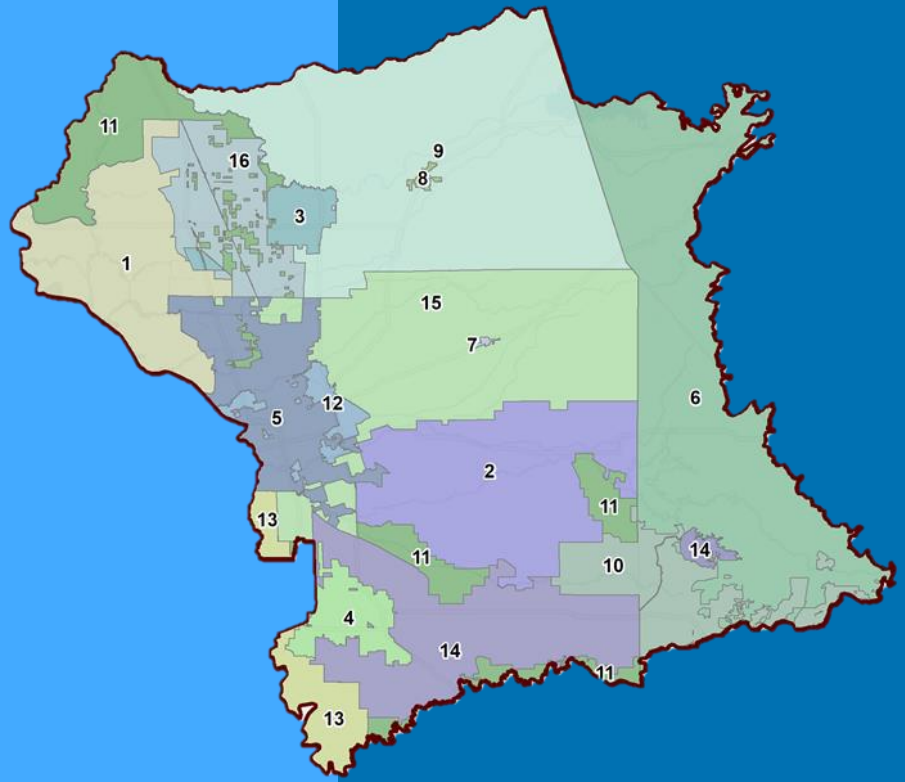
Seawater intrusion



Depletions of interconnected surface waters

ESJ Subbasin: 16 GSAs, 1 GSP

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY



16 GSAs are working collaboratively to develop a single GSP.

The GSAs formed the Eastern San Joaquin Groundwater Authority (GWA) to jointly develop and implement the Eastern San Joaquin GSP.

Plan Contents – Chapter Titles

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

1. Agency Information, Plan Area, and Communication
2. Basin Setting
   - Hydrogeologic Conceptual Model
   - Current & Historical Conditions
   - Water Budget
3. Sustainable Management Criteria
4. Monitoring Networks
5. Data Management System
6. Projects & Management Actions
7. Plan Implementation
8. References

Release of Public Draft

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

- Published on Website **July 10**
- Hard copies posted in libraries and at GSA main offices
- Notices and press releases in English and Spanish
- 45-day public comment period closed **August 25**

Lodi Public Library
Cesar Chavez Central Library
Margaret Troke Library
Maya Angelou Library
Fair Oaks Branch Library
Weston Ranch Library

18 Public Comment Letters Received

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

NGOs

- The Nature Conservancy
- Restore the Delta
- Sierra Club, Delta-Sierra Group
- California Poultry Federation
- California Sportfishing Protection Alliance
- Joint comments (includes The Nature Conservancy, Audubon California, Clean Water Action, Clean Water Fund, American Rivers, Union of Concerned Scientists)

Neighboring Subbasins

- Cosumnes Subbasin
- Tracy Subbasin
- The Freshwater Trust

GSAs

- North San Joaquin WCD
- South San Joaquin GSA
- Stockton East Water District

State and Federal Agencies

- California Department of Fish and Wildlife, North Central Region

Others

- Jane Wagner-Tyack (Consultant)
- EBMUD
- Larry Walker Associates
- The Wine Group
- Terra Land Group, LLC

Response to Public Comments

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Public comments and response to comments are included in the Final GSP.

- **Appendix 1-I. Public Comments Received**

- **Appendix 1-J. Response to Public Comments**
  - Changes to the Plan language and approach were made in several areas in response to public comments based on input from the GWA Board and Comment Review Ad-Hoc Committee.

Sustainable Management Criteria

SGMA Terminology

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- Minimum Thresholds are quantitative thresholds set at the point at which significant and unreasonable undesirable results may begin to occur. It is the lowest the basin can go at an identified monitoring point without something significant and unreasonable happening to groundwater.
- Measurable Objectives are 2040 targets that establish the high side of an operating margin that the basin will be managed to in order to prevent undesirable results (above the minimum thresholds).

Sustainable Management Under SGMA

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SGMA requires the Subbasin to set minimum thresholds and measurable objectives for 6 sustainability indicators under SGMA.

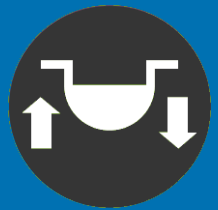
Chronic lowering of groundwater levels

Degraded water quality

Reduction of groundwater storage

Land subsidence

Seawater intrusion



Depletions of interconnected surface waters

1) Groundwater Elevations

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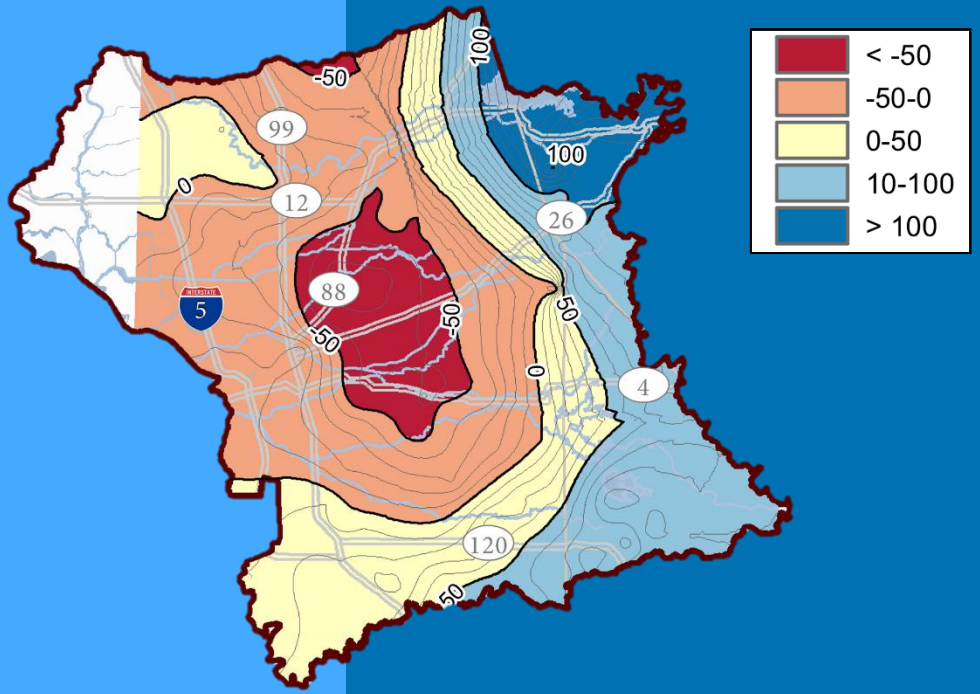
4th Quarter 2017 Groundwater Elevation (ft.)



Current Condition

Groundwater elevations have declined in recent decades due to increased pumping activity.

Currently, a “cone of depression” exists in the central portion of the Subbasin, where elevations are at their lowest.

1) Groundwater Elevations

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Approach in the GSP: Minimum Thresholds and Measurable Objectives are based on the shallower of historical drought lows or domestic/municipal depth, evaluated at identified representative monitoring wells.

- MO = The deeper of 1992 and 2015-2016 groundwater levels.
- MT = The deeper of 1992 and 2015-2016 groundwater levels with a buffer of 100 percent of historical range applied, or the 10th percentile domestic well depth, whichever is shallower. In municipalities that require domestic users to connect to City water, the 10th percentile municipal well depth is used in place of domestic well depth.

2) Groundwater Storage

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Current Condition

The Eastern San Joaquin Subbasin has large amounts of fresh groundwater stored in its aquifers – over 50 million AF.

Undesirable results related to groundwater storage in the Subbasin have not occurred historically, are not currently occurring, and are not likely to occur in the future.

2) Groundwater Storage

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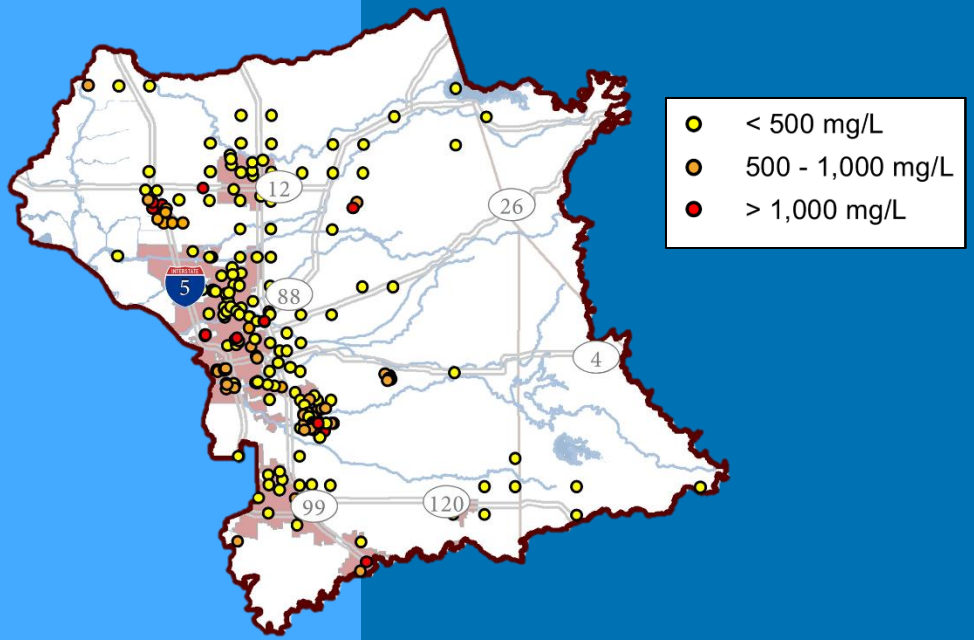
Approach in the GSP

Minimum thresholds and measurable objectives for groundwater levels are used as a proxy for groundwater storage.

3) Water Quality

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Maximum Total Dissolved Solids (TDS) 2008-2018 (mg/L)



Current Condition

Salinity contamination of freshwater wells is a concern in some areas of the Subbasin. These areas are primarily located in the western portions of the Subbasin.

3) Water Quality

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MO = 600
mg/L TDS

MT = 1,000
mg/L TDS

SMCL = 500 mg/L (recommended)

SMCL = 1,000 mg/L (upper limit)

Approach in the GSP

- Minimum thresholds and measurable objectives are established for TDS at identified representative wells
  - MO = 600 mg/L TDS (based on SMCL + 100 mg/L buffer)
  - MT = 1,000 mg/L TDS (upper limit SMCL)

- Additional parameters will be monitored more broadly for informational purposes (cations/anions, arsenic, field parameters). This includes nitrates and chloride.

4) Seawater Intrusion

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Current Condition

While the Delta ecosystem evolved with a natural salinity cycle that brought brackish tidal water in from the San Francisco Bay, practices are now in place to prevent the inland movement of seawater through the Delta. Some areas experience water quality issues related to salinity, which are addressed under water quality.

4) Seawater Intrusion

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MO = 500
mg/L chloride along identified isocontour line

MT = 2,000
mg/L chloride along identified isocontour line

Trigger = 1,000
mg/L chloride

SMCL = 250 mg/L (recommended)

SMCL = 500 mg/L (upper limit)

Approach in the GSP

- Minimum thresholds and measurable objectives are established as an isocontour line for chloride located in the western portion of the Subbasin.
  - MO = 500 mg/L chloride (SMCL = 250 mg/L)
  - MT = 2,000 mg/L chloride (upper limit SMCL)
  - Monitoring Trigger = 1,000 mg/L chloride

5) Land Subsidence

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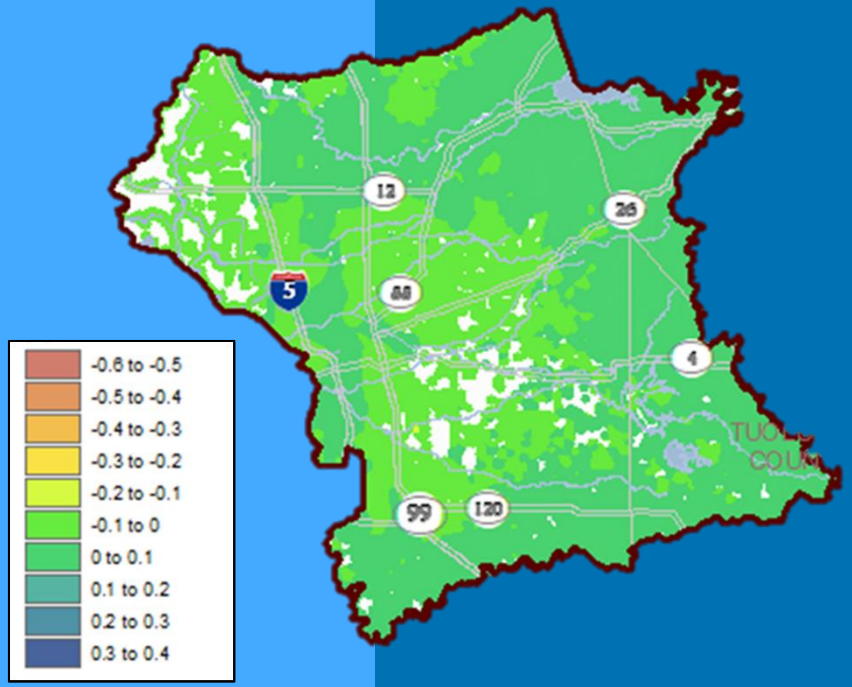
Vertical Displacement (ft. per year)



Current Condition

Land subsidence has not historically been an area of concern in the Subbasin and there are no records of land subsidence caused by groundwater pumping.

5) Land Subsidence

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Approach in the GSP

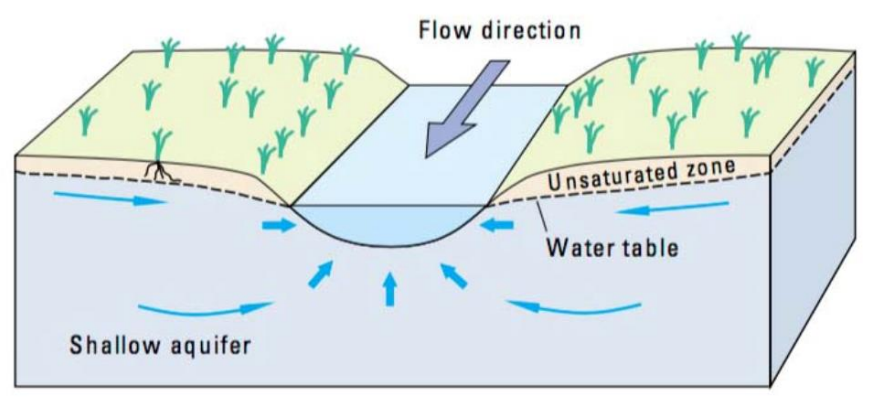
Minimum thresholds and measurable objectives for groundwater levels are used as a proxy for land subsidence.

6) Depletions of Interconnected Surface Waters

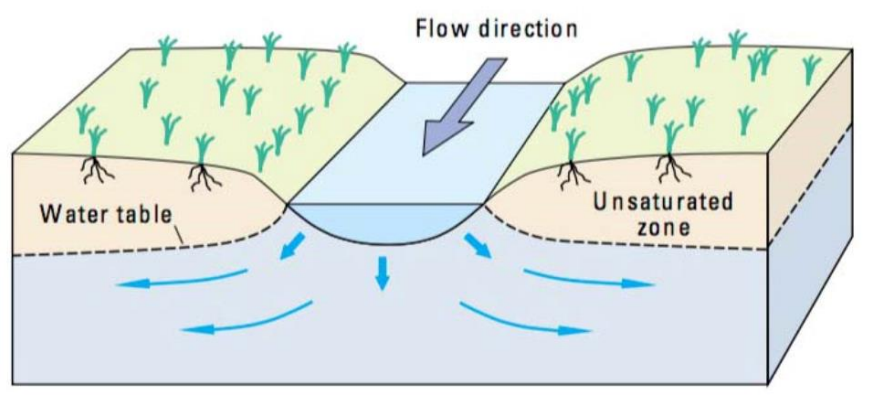
EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Current Condition: Major river systems in the Subbasin are highly managed to meet instream flow requirements for fisheries, water quality standards, and water rights of users downstream.

Gaining Stream



Losing Stream



6) Depletions of Interconnected Surface Waters

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Approach in the GSP

Minimum thresholds and measurable objectives for groundwater levels are used as a proxy for depletions of interconnected surface waters.

Projects & Management Actions

Projects & Management Actions

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

How will we reduce reliance on groundwater sources, increase recharge, and bring the basin into balance by 2040?

- 23 potential projects have been proposed to date
- These projects include a range of groundwater recharge, surface water transfers, conservation and more.

Projects & Management Actions

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

The Plan proposes 3 categories of projects: Planned, Potential, and Longer-Term/Conceptual.

Planned Projects – Projects in this category are planned to be completed and online prior to 2040.

Potential Projects – Projects in this category represent a "menu of options" for the Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the "Planned" projects.

Longer-term or Conceptual Projects – Projects in this category are in the early conceptual planning stages and would require significant additional work to move forward.

Timeline for GSP Adoption

Timeline for GSP Adoption

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

- Public Draft comment period July 10 – Aug. 25
- NOI to adopt GSP distributed – Aug. 16
- Final GSP distributed – Nov. 5
- JPA recommendation to adopt – Nov. 13
- Individual GSAs adopt Final GSP – Nov. 14 – Jan. 1
- JPA action to accept Plan – Jan. 8
- GSP submittal deadline – Jan. 31, 2020

Board Recommendation for GSP Adoption

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

On November 13, 2019, the Eastern San Joaquin Groundwater Authority Board of Directors voted to recommend that individual GSAs formally adopt the GSP.

GSA Adoption Dates

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Agency Name	Public Hearing Date	Meeting Time
Central Delta Water Agency	10-Dec-19	9:30 AM
Central San Joaquin Water Conservation District	21-Nov-19	Noon
City of Lodi	20-Nov-19	7:00 PM
City of Manteca	3-Dec-19	7:00 PM
City of Stockton	10-Dec-19	5:30 PM
Linden County Water District	5-Dec-19	6:00 PM
Lockeford Community Services District	12-Dec-19	9:00 AM
North San Joaquin Water Conservation District	16-Dec-19	2:00 PM

GSA Adoption Dates

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Agency Name	Public Hearing Date	Meeting Time
Oakdale Irrigation District	10-Dec-19	9:00 AM
San Joaquin County #1	10-Dec-19	9:00 AM
San Joaquin County #2	10-Dec-19	9:00 AM
South Delta Water Agency	4-Dec-19	1:30 PM
South San Joaquin GSA	20-Nov-19	9:00 AM
Stockton East Water District	17-Dec-19	Noon
Woodbridge Irrigation District	12-Dec-19	9:00 AM

GSA Adoption Dates

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Agency Name	Public Hearing Date	Meeting Time
Eastside San Joaquin GSA		
Calaveras County Water District	11-Dec-19	9:00 AM
Stanislaus County	10-Dec-19	9:00 AM
Calaveras County	10-Dec-19	9:00 AM
Rock Creek Water District	11-Dec-19	6:00 PM


Thank You!

Eastern San Joaquin GSP Adoption