



**EASTERN SAN JOAQUIN  
GROUNDWATER AUTHORITY**

**East San Joaquin Subbasin GSP  
September 25, 2019**

# Agenda



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- I. SGMA Overview
- II. Current ESJ Basin Conditions
- III. Projects & Management Actions
- IV. GSP Finalization

# What is SGMA?



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.

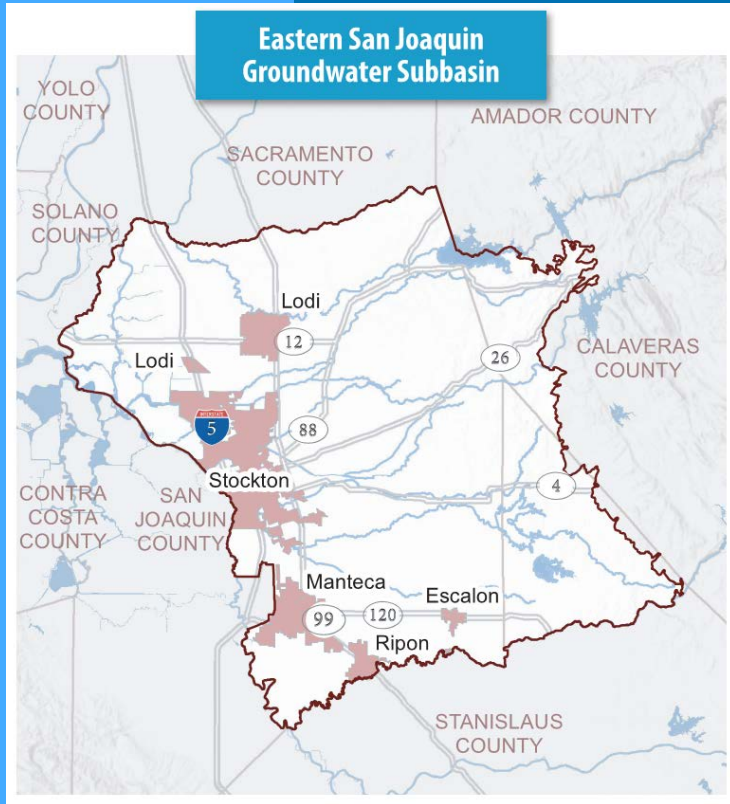
# What Does SGMA Require?



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- 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?



ESJ Subbasin boundaries:

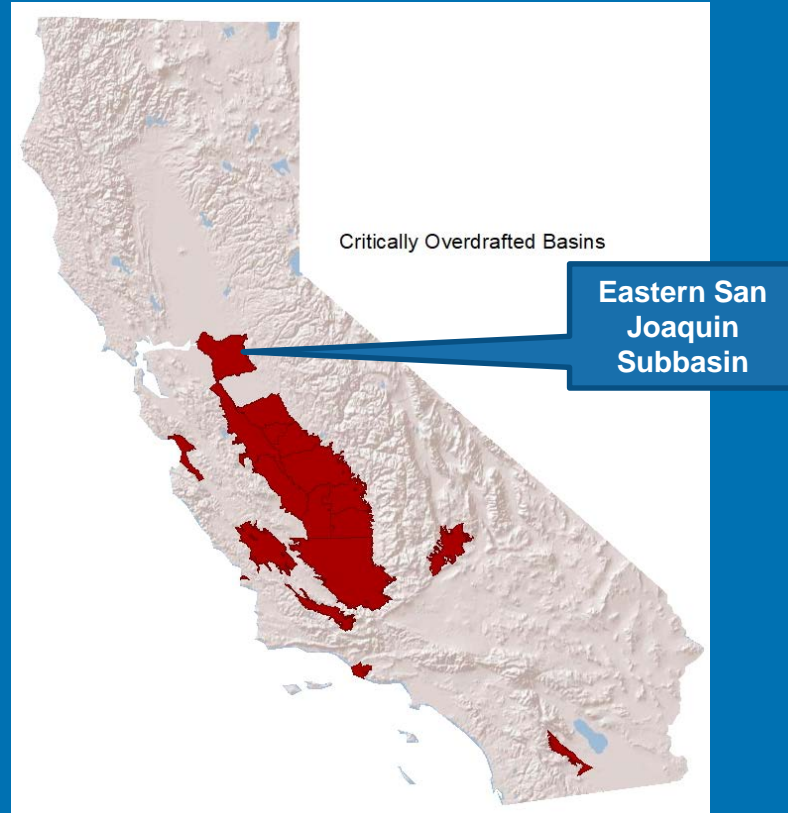
- North – Dry Creek
- West – San Joaquin River
- South – Stanislaus River
- East – Sierra Nevada Bedrock Outcrop

1,207 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



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## 1 Basin, 1 GSA, 1 Plan

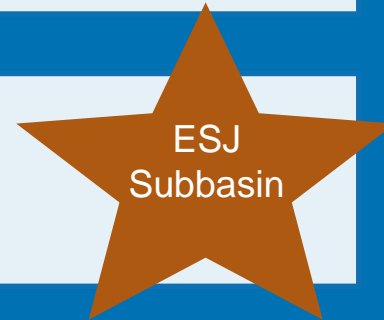
- One GSA assumes responsibilities and authorities for the entire basin
- New or existing agency

## 1 Basin, Multiple GSAs, 1 Plan

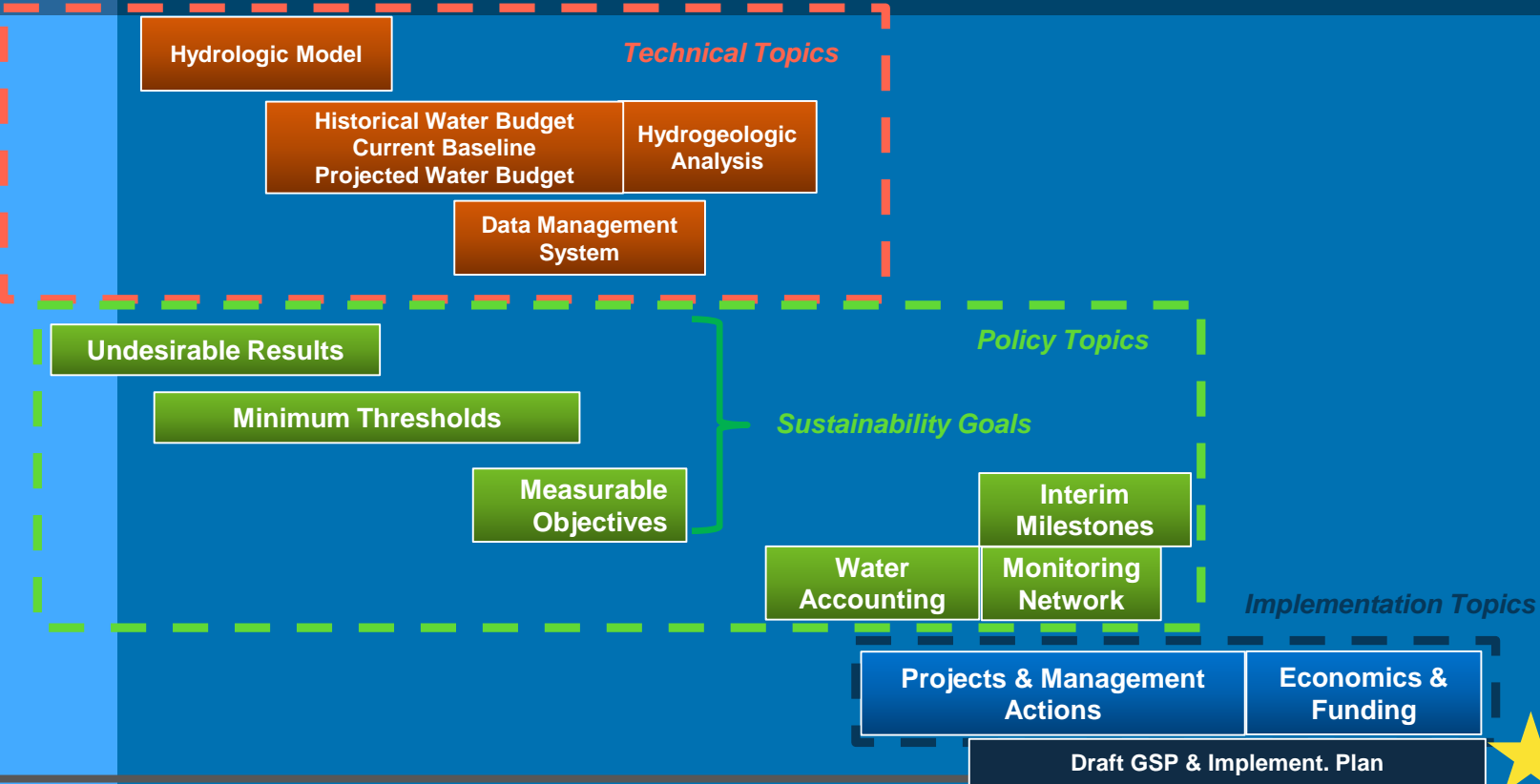
- Several GSAs in same basin
- Requires significant coordination among GSAs
- Still evaluated based on basin-level implementation of GSP

## 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

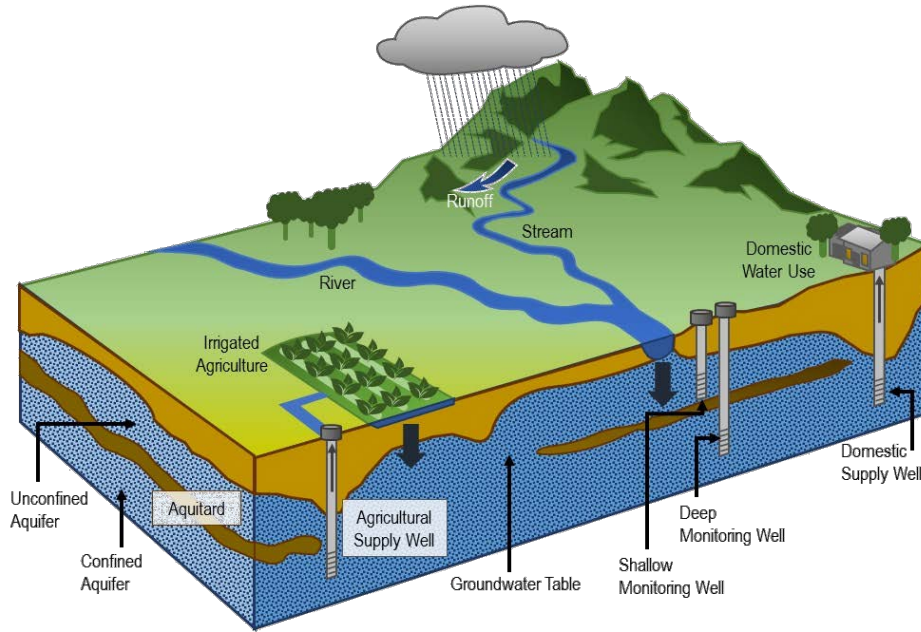




# SGMA Requires Accounting of All Water Uses and Sources



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- 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



# Overview of Current Basin Conditions

# Current Basin Conditions

What is the current status of Subbasin across each of the six sustainability indicators under SGMA?



Chronic  
lowering of  
groundwater  
levels



Degraded water  
quality



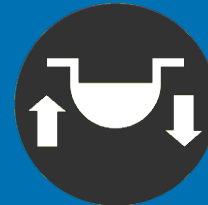
Reduction of  
groundwater  
storage



Land subsidence



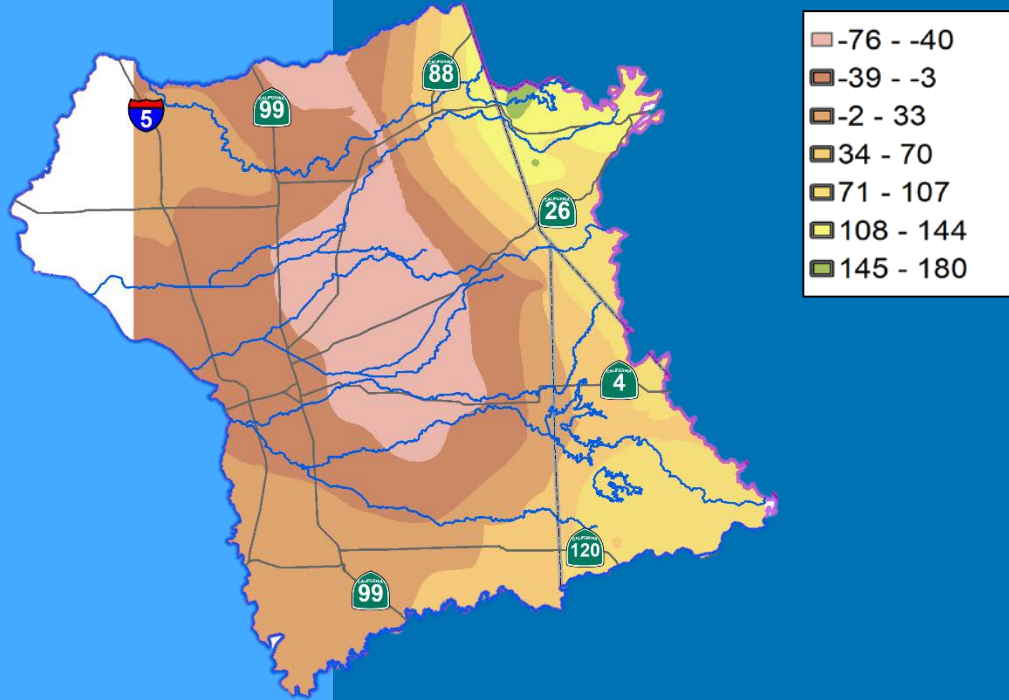
Seawater  
intrusion



Depletions of  
interconnected  
surface waters

# 1) Groundwater Elevations

## 4<sup>th</sup> Quarter 2017 Groundwater Elevation (ft.)



Groundwater elevations have declined in past decades due to increased pumping activity. However, over the last couple decades, the rate of decline has reduced.

## 2) Groundwater Storage

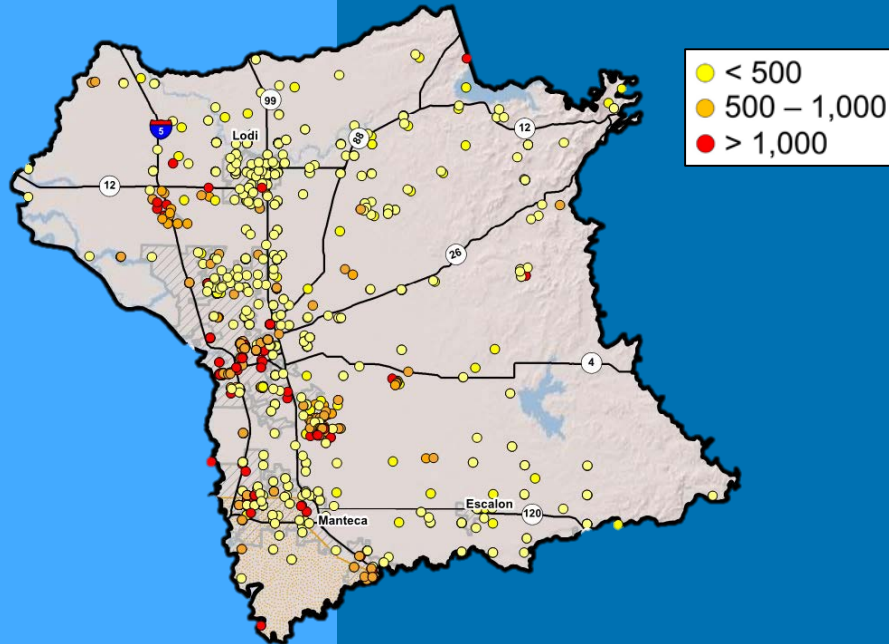


The Eastern San Joaquin Subbasin has large amounts of fresh groundwater stored in its aquifers – over 50 million acre-feet.

However, as groundwater elevations decline, it will become increasingly difficult and expensive to reach this water.

# 3) Water Quality

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



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.

# Identified Concerns for Water Quality

## – Addressed in the GSP



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### What we've heard from the Advisory Committee:

- Salinity
  - Arsenic
  - Nitrates
  - Point-source contamination
  - 1,2,3 TCP
- Historic WQ concern
  - Can be feasibly managed by a GSP/GSA
  - Measured using TDS as a proxy (most widely available data)
  - Min Threshold: 1,000mg/L TDS at identified wells
- Naturally occurring
  - Doesn't result from unsustainable groundwater extraction activities
  - No thresholds set

## 4) Seawater Intrusion

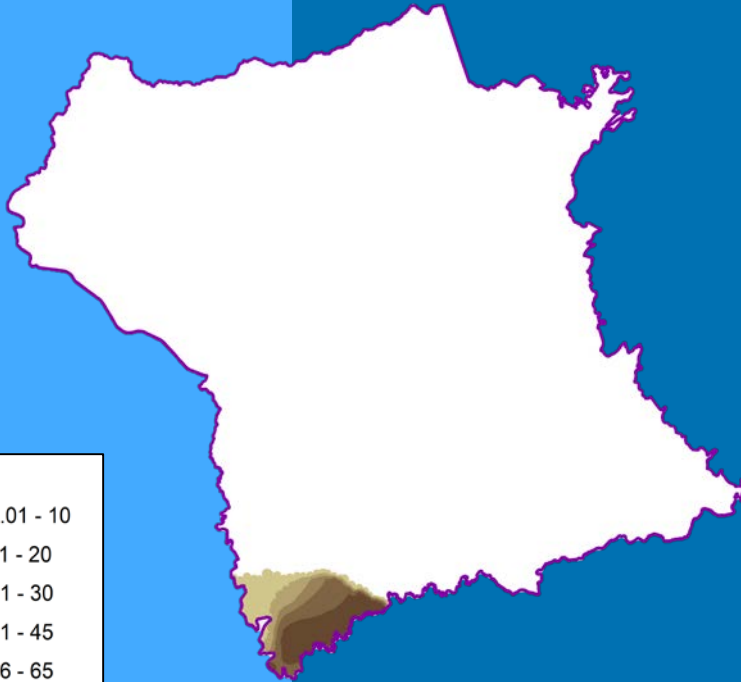


Direct seawater intrusion does not occur in the Subbasin. The potential for seawater intrusion under climate change/sea level rise scenarios may be considered for future conditions.



# 5) Land Subsidence

## Corcoran Clay Thickness (ft.)



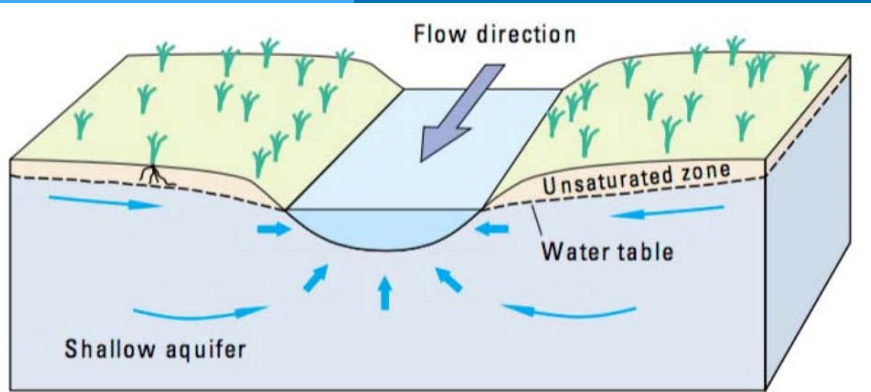
Subsidence potential exists in a small portion of the Subbasin where there is pumping from below the Corcoran Clay layer.

Groundwater elevations in this area are typically high compared to the rest of the basin, and land subsidence has not been experienced historically and is not likely to occur.

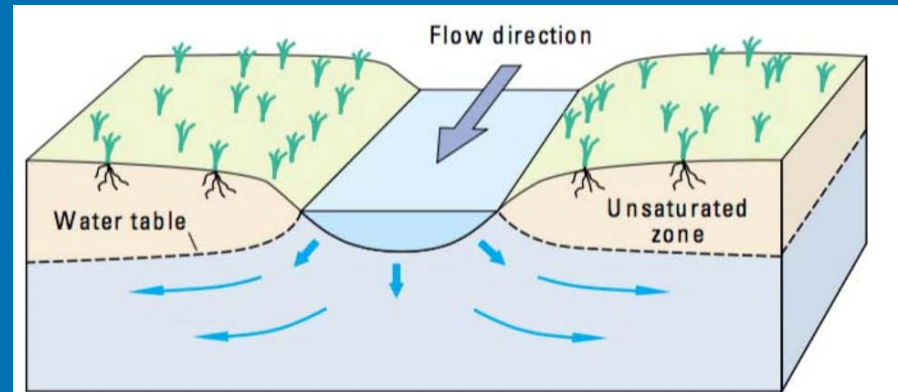
# 6) Depletion of Interconnected Surface Waters

Streams identified as hydraulically connected to groundwater and losing will be managed to protect against significant and unreasonable stream depletion.

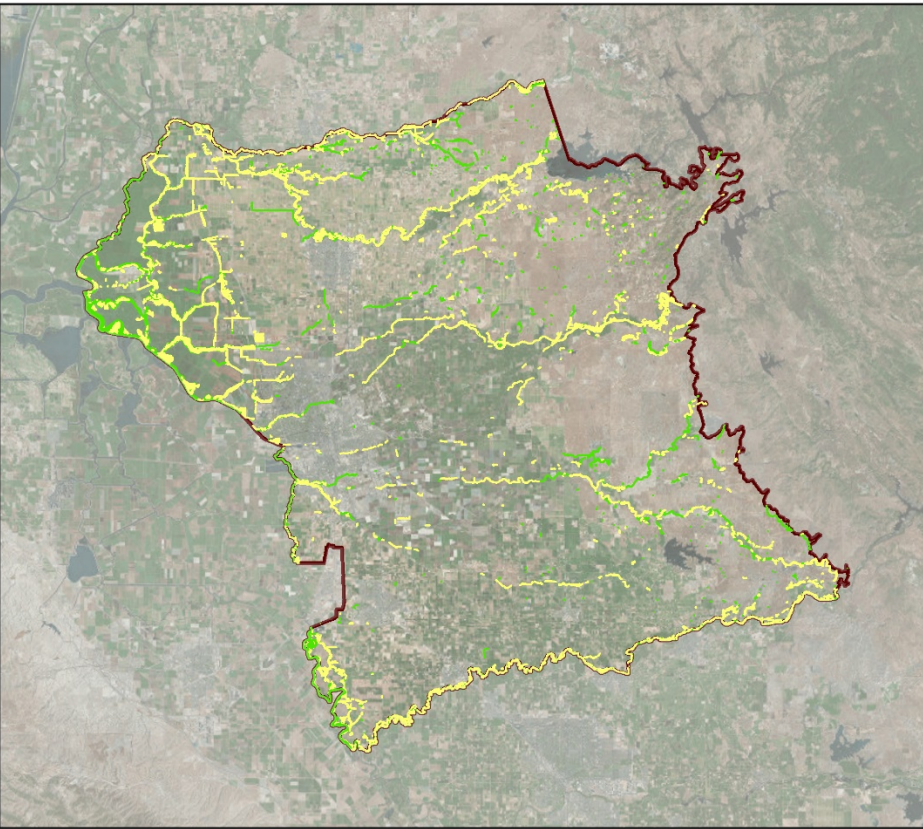
**Gaining Stream**



**Losing Stream**



# Identification of GDEs




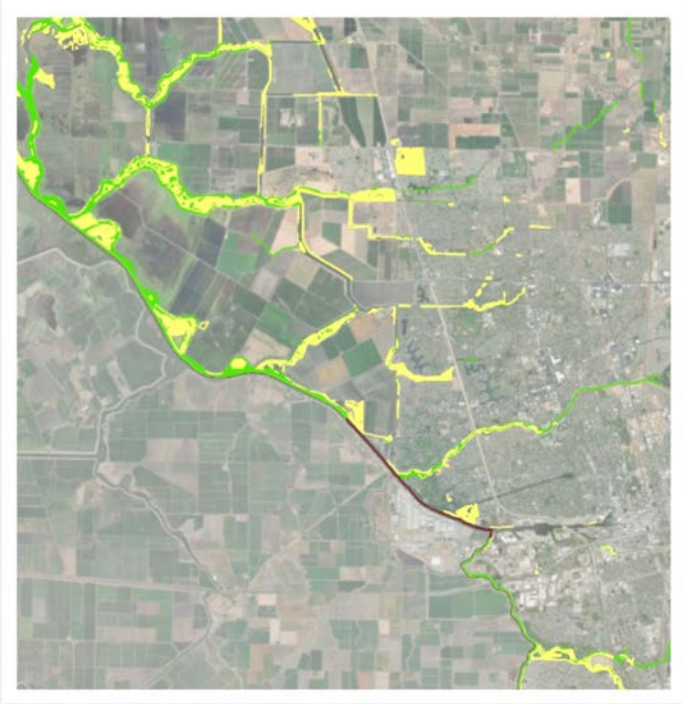

**Eastern San Joaquin Subbasin NCCAG**  
Eastern San Joaquin Subbasin GSP

**Legend**

-  Eastern San Joaquin Subbasin Boundary
-  Vegetative NCCAG
-  Wetland NCCAG

NCCAG: Natural Communities Commonly Associated with Groundwater  
GDE: Groundwater Dependent Ecosystems

0 1 2 3 4 5 10 Miles 



# Identifying NCCAGs Likely to Access Non-groundwater Water Supplies



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## Identified GDEs and NCCAGs not Identified as GDEs

Eastern San Joaquin Subbasin GSP

### Legend

- Eastern San Joaquin Subbasin Boundary
- NCCAG GDEs**
- NCCAG Vegetative GDE
- NCCAG Wetland GDE
- NCCAG Not GDEs**
- Depth to Water > 30 ft.
- Managed Wetland
- Adjacent to Agriculture
- Perennial Surface Water Bodies

NCCAG: Natural Communities Commonly Associated with Groundwater  
GDE: Groundwater Dependent Ecosystems



## Buffers Used

DTW 30+ ft.	Drawn from area of shallow DTW measurements
Managed Wetland	150 ft.
Adjacent to Ag.	50 ft.
Losing or Perennial Streams	150 ft.
Canals and Ditches	150 ft.



# Projects & Management Actions

# Projects & Management Actions



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
- You can learn about each and provide feedback at the Projects & Management Actions station

# Projects & Management Actions



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

**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.



# GSP Finalization



# Draft GSP Public Comment Period (July 10 – August 25)



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The Draft GSP is posted to the website homepage:  
*[www.esjgroundwater.org](http://www.esjgroundwater.org)*

- Public comments were due Aug 25, 2019

# Draft GSP – What's in it?



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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

# Next Steps



- Draft GSP Finalize, November 5, 2019
- Monitoring & Reporting
- Implement GSP Elements



# Thank You!

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