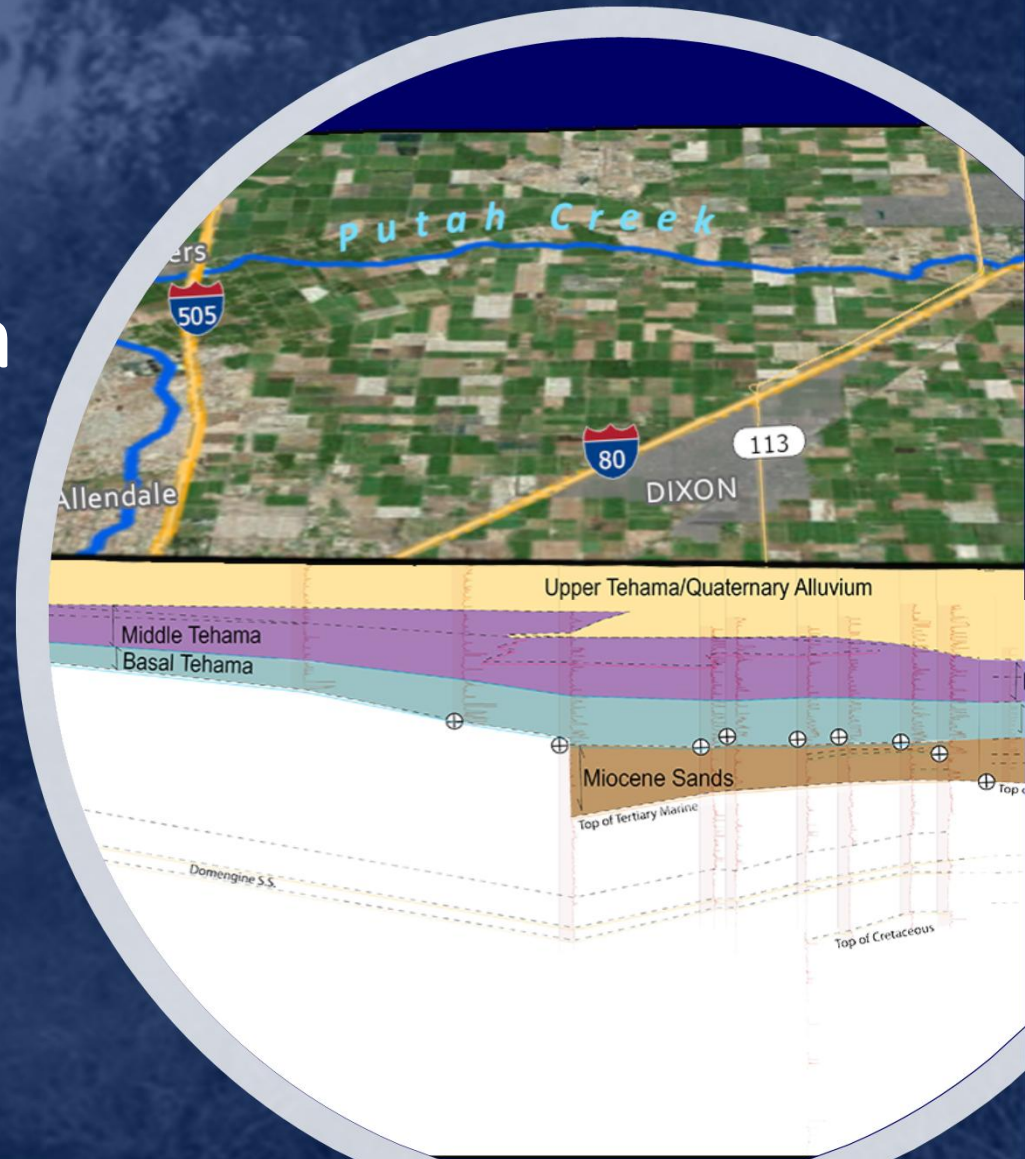


# Solano Subbasin Groundwater Sustainability Plan

October 11, 2018

*Maintaining a Sustainable Solano Subbasin*





# Objectives of Solano Subbasin GSP

## Compliant GSP

- Defensible Water Budget

## Multi Purpose GSP & Tools

- Water Budget (Surface Layer)
- Basin Scout
- GW Flow Model

## Evaluate & Select Appropriate Flow Model

- Optimize Existing Model Info

## Locally Specific, Projects/ Management Actions

- For Feasible Cost-Effective GW Sustainability

## Cost Effective GSP

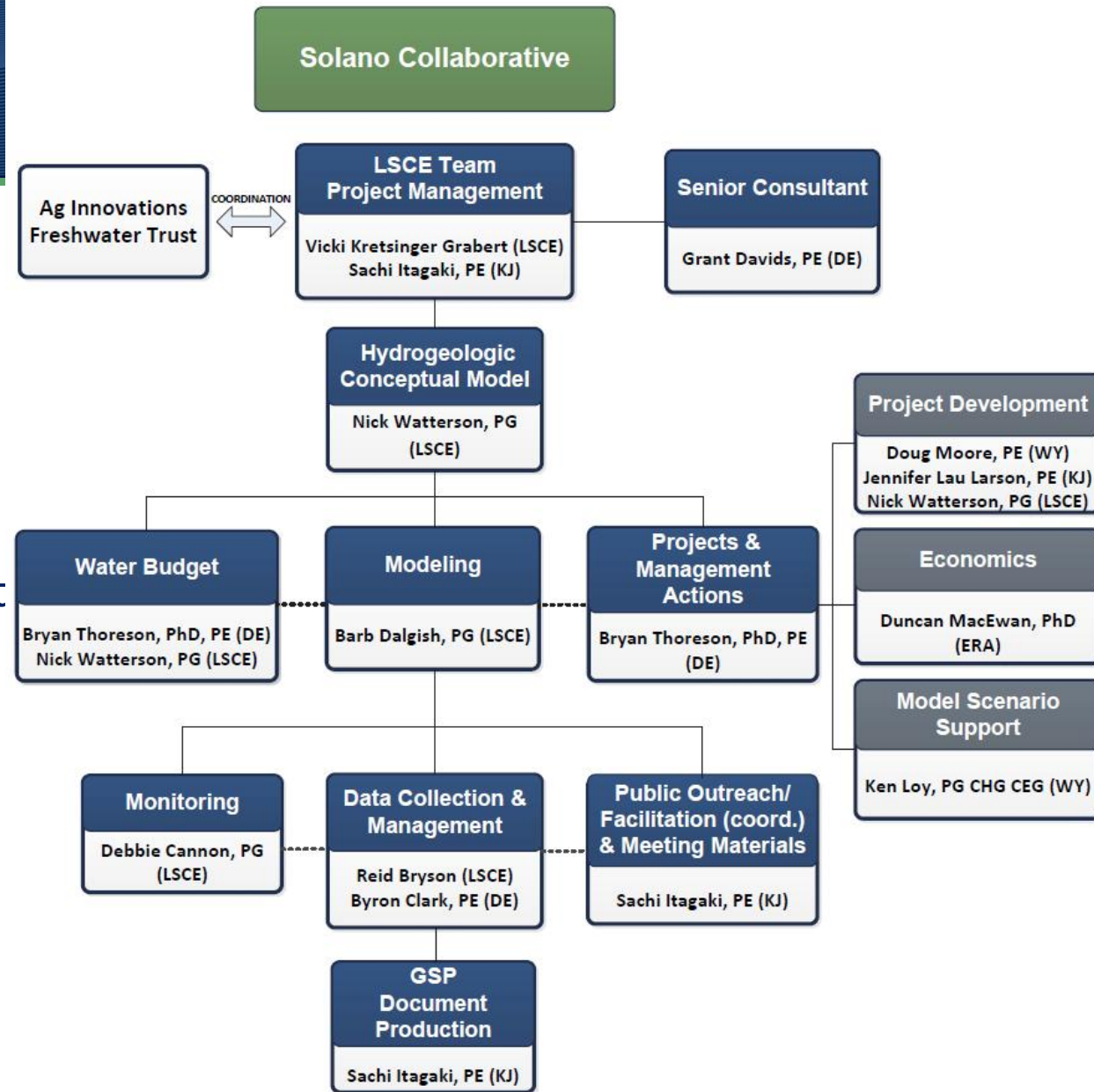
- Approved by State

# Schedule: Solano Subbasin GSP

2018		2019				2020				2021				2022
4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th		
GSP Development													GSP DEADLINE JAN 31 <sup>ST</sup>	
Stakeholder Outreach Materials														
Project Management														

**DWR Deadline to Submit GSP: January 31<sup>st</sup>, 2022**

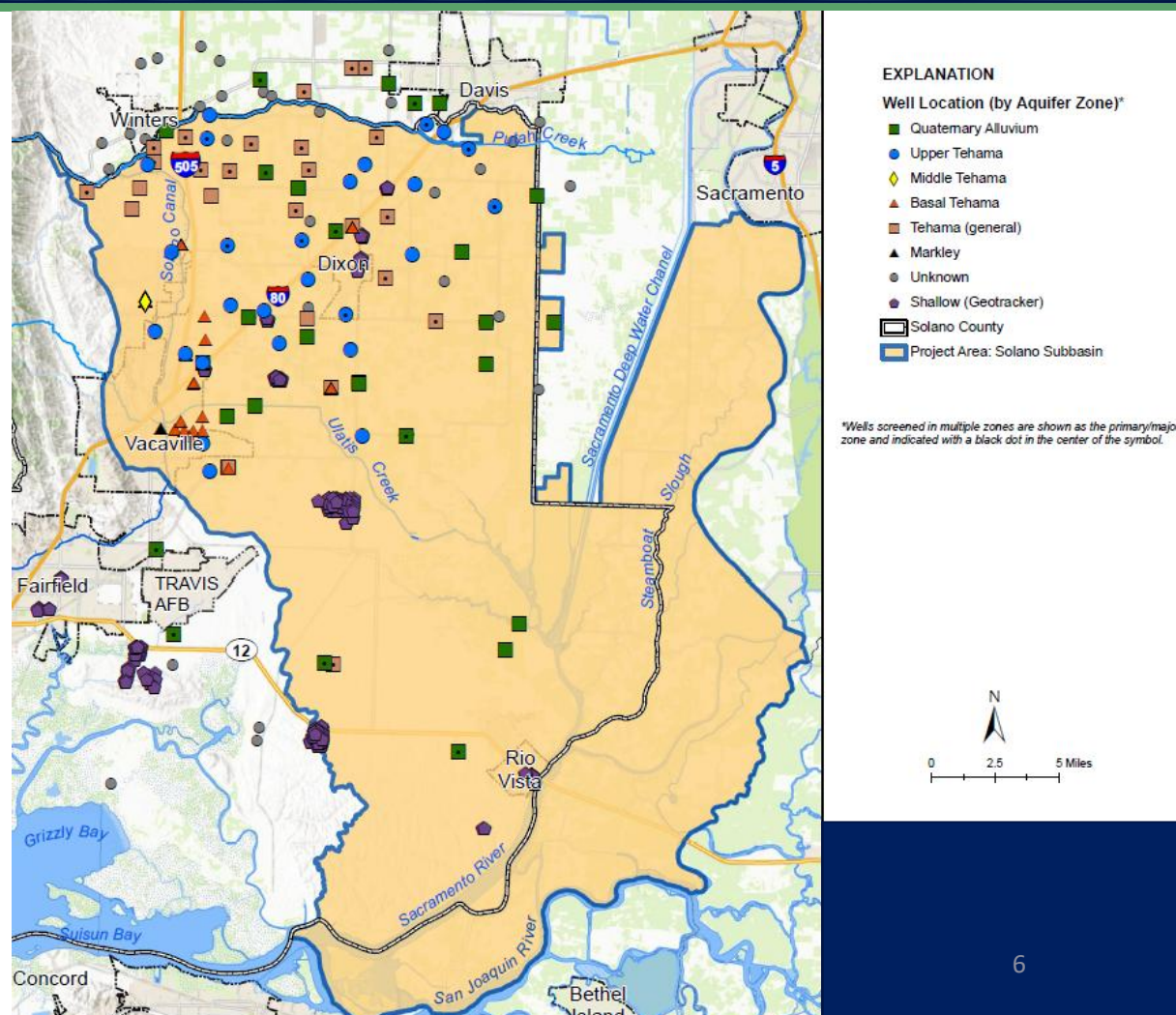
# Technical Team Organization



- **Coordination with:**
  - Solano Collaborative
  - Ag Innovations
  - The Freshwater Trust (TFT)
- **Team Roles**
  - LSCE: GSP all tasks
  - KJ: Meeting coordination; document production
  - DE: Water budget; projects & management actions
  - WY: Support projects & management actions
  - ERA: Economic/feasibility analyses

# Groundwater Monitoring

- Extensive CASGEM network where most groundwater used
- Well construction and formations represented
- Add'l monitoring facilities
  - SW/GW dedicated facilities



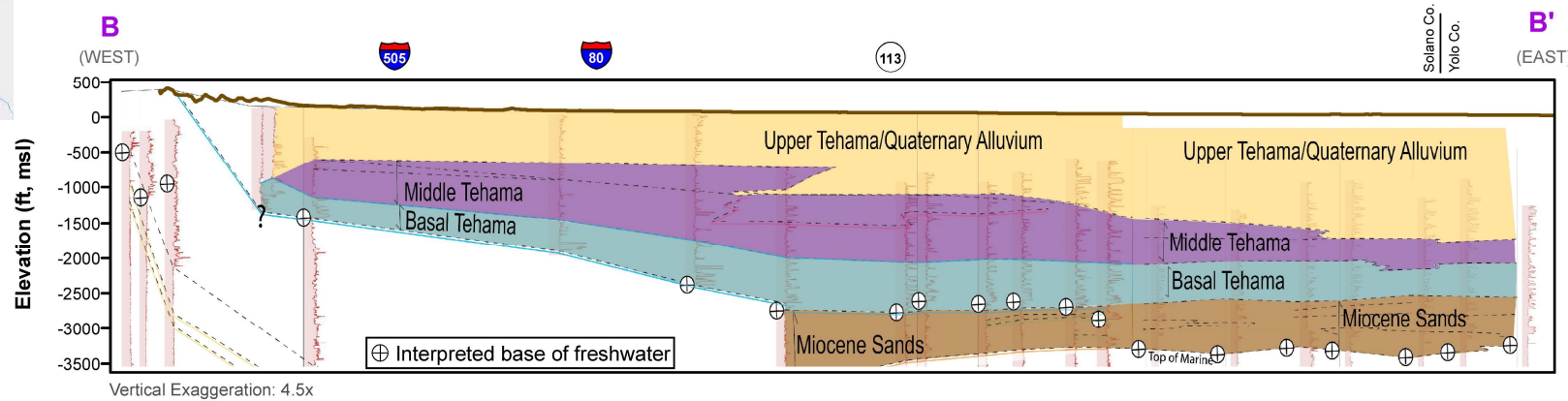
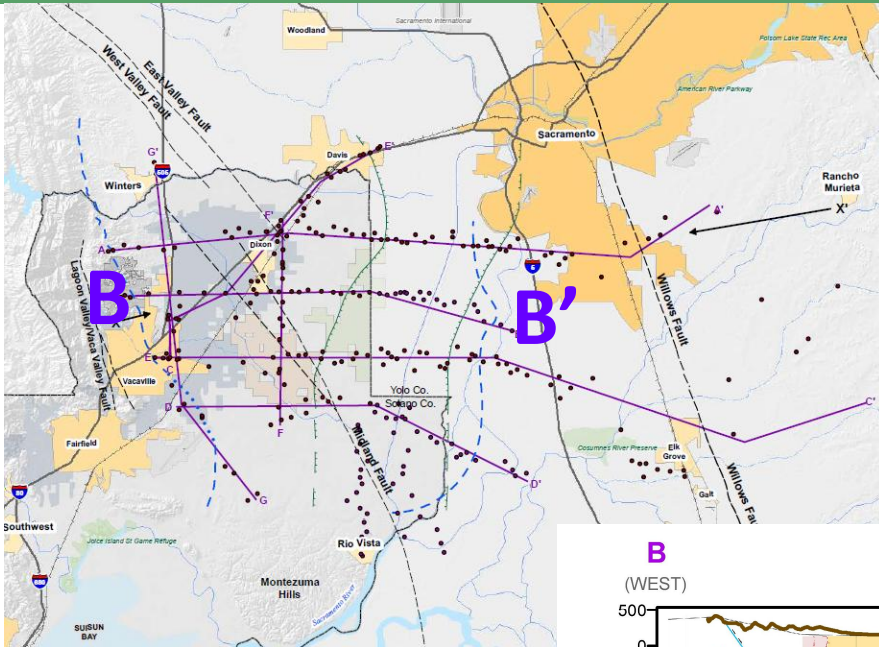


*Maintaining a Sustainable Solano Subbasin*

**Groundwater  
Conditions:  
High Level Overview**

# Hydrogeologic Conceptual Model: GSP Requirement

- Solano Geologic Cross Sections; many more than one mile deep
- Understand groundwater system response to recharge and pumping
- Important basis for GW flow model structure



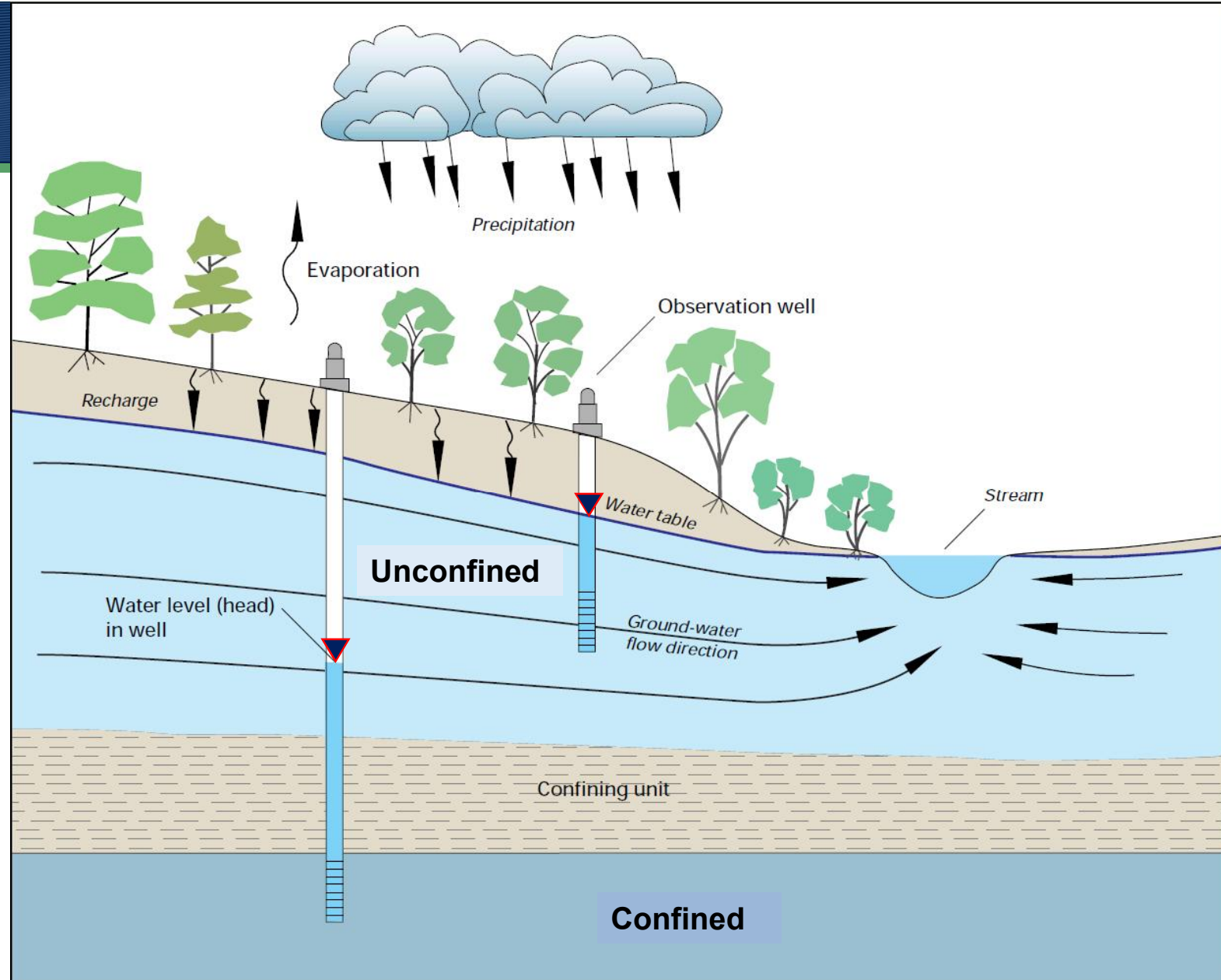
# Groundwater: Unconfined & Confined

## Unconfined:

At atmospheric pressure;  
no overlying low  
Permeability materials

## Confined:

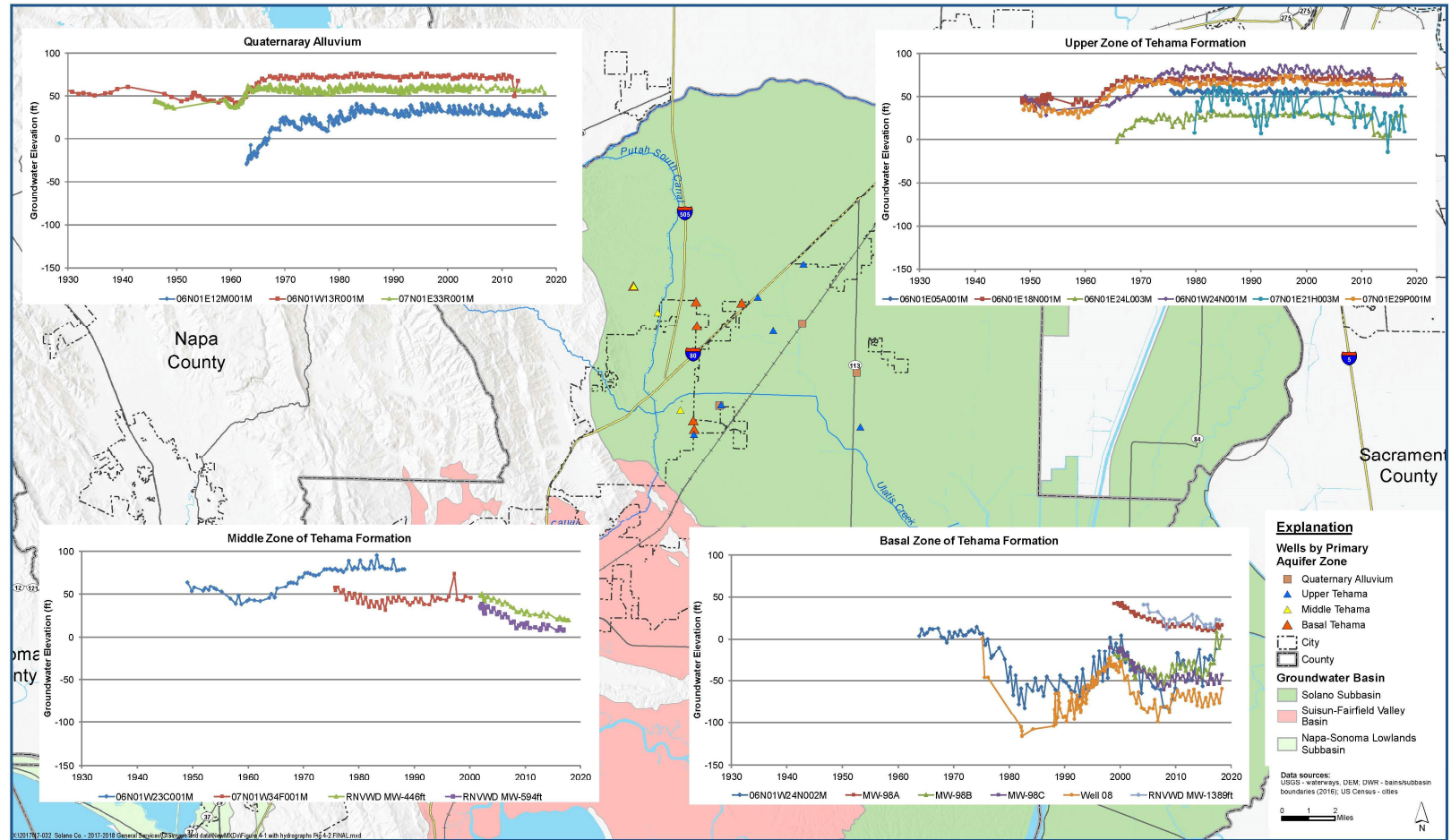
Groundwater under  
pressures greater than  
atmospheric by overlying  
low permeability  
(confining) materials



# Solano Subbasin: Groundwater Levels

## Stable

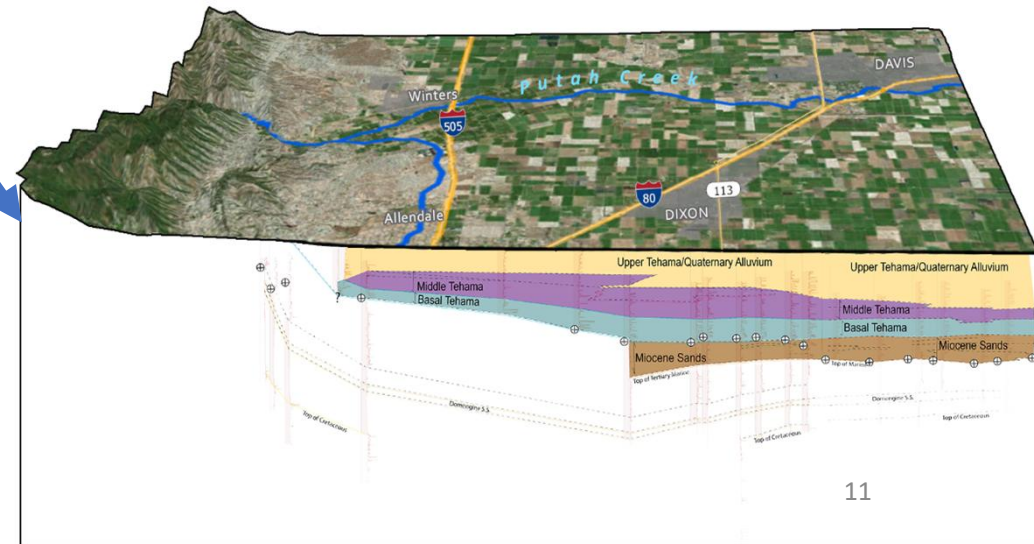
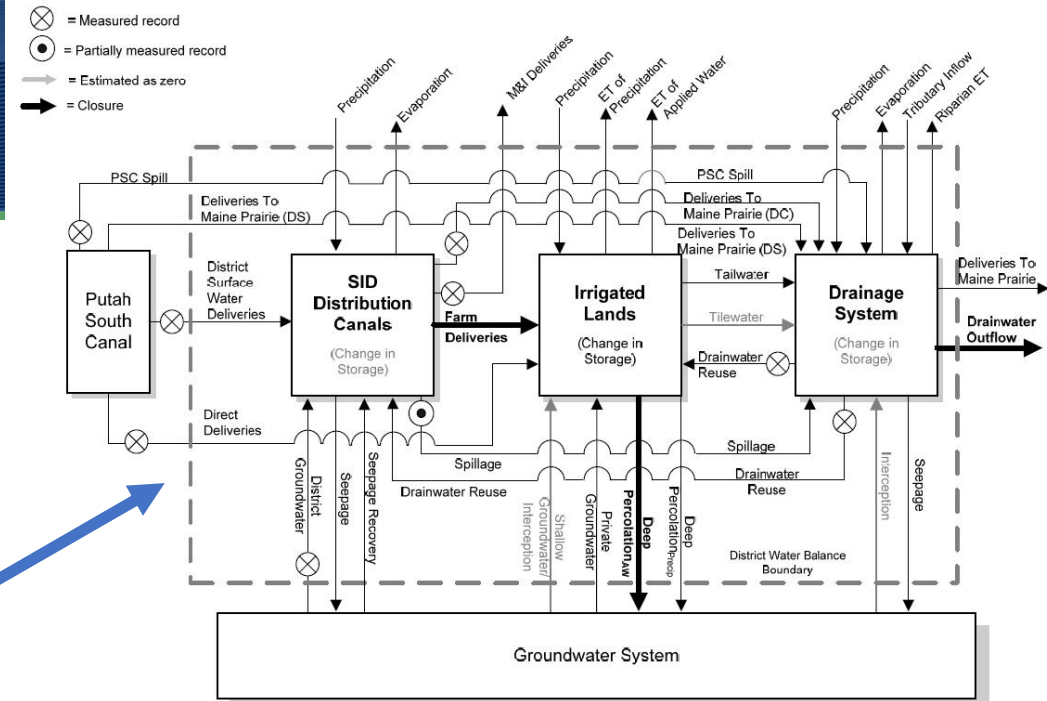
- Upper Zone of Tehama Formation and Quaternary Alluvium-Stable since 1970 (Unconfined)
- Basal Zone-Stable since 2008 (Confined)



*Maintaining a Sustainable Solano Subbasin*

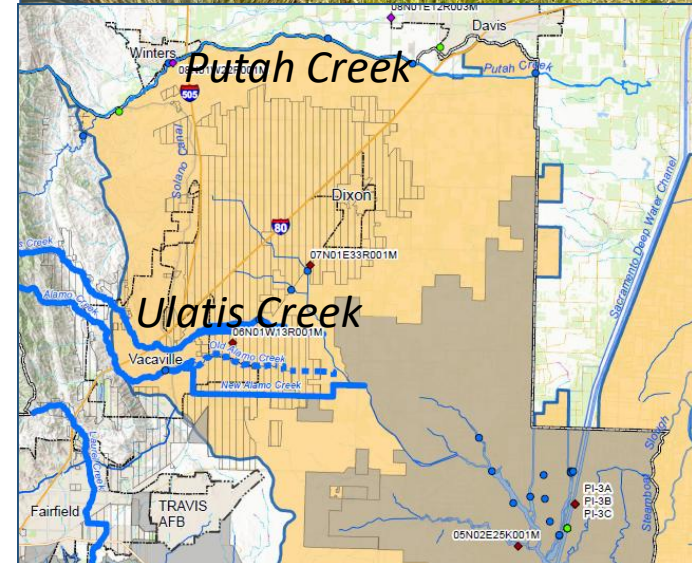
# Water Budgets

- Account for all water budget inflows and outflows
  - Historical base period and projected
- Describe relationship between SW and GW systems
- Use local knowledge to evaluate and improve existing GW Models
- Develop historical and future water budgets for:
  - All of Solano Subbasin
  - Each GSA



# Groundwater and Surface Water Interaction: A Key Sustainability Indicator

- Monitoring data and hydrogeologic understanding to characterize SW/GW relationship
  - Gaining and losing reaches
  - Groundwater Dependent Ecosystems (GDEs)
- Establish baseline data to accurately assess whether GW extraction is influencing streamflow
- Establish appropriate sustainability metrics



# Schedule: Solano Subbasin GSP

2018		2019				2020				2021				2022
4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	Jan	
									Executive Summary					GSP DEADLINE JAN 31ST
	Ch.1 Introduction													
	Ch.2 Plan Area													
	Ch.3 Basin Setting													
	Ch. 4 Water Supply													
		Ch.5 Water Budget												
		Ch.6 Sustainability Goal												
		Ch.7 Monitoring Data Management & Reporting												
					Ch. 8 Projects & Management Actions									
							Ch. 9 Plan Implementation							
		Ch. 10 References												
		GSP: Admin Draft, Draft, and Final										GSA's Approvals		
		Stakeholder Outreach Materials												
		Project Management												

✗ = Deliverables

# GSP Outline

- Draft TOC for GSP
- Annotated Outline to be Prepared

CHAPTER	GROUNDWATER SUSTAINABILITY PLAN SECTIONS
	Executive Summary
1	Introduction
2	Plan Area
3	Basin Setting
4	Historical, Current and Projected Water Supply
5	Water Budget
6	Solano Subbasin Sustainability Goal
7	Monitoring Data Management & Reporting
8	Sustainable GW Management: Projects and Mgmt Actions
9	Plan Implementation
10	References

# Ag Innovations

*Providing neutral, 3<sup>rd</sup> Party  
Facilitation of the Solano Subbasin  
Groundwater Sustainability Plan*

## Our scope includes

- **Inter-agency coordination**
- **Public stakeholder process**
- **Communications**

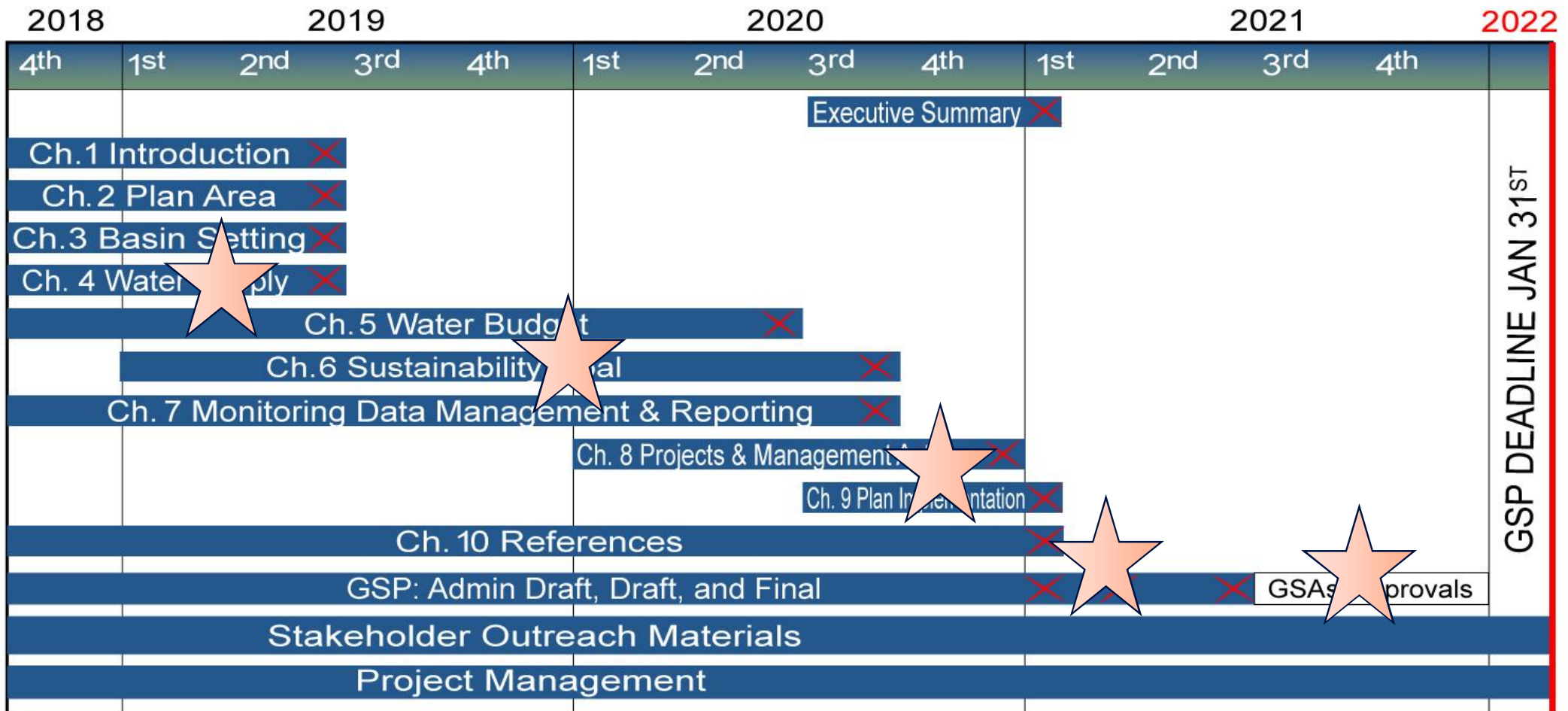


# Together, we are working towards a GSP that



- Is complete and meets DWR requirements, and that creates a foundation for being able to steward and manage groundwater more effectively in the Solano Subbasin;
- Contains a hydrological model for the subbasin and subbasin-specific sustainability goals relative to the 2015 levels;
- Informs other useable, practical sets of tools;
- Engages the community to create a stewardship understanding around water resources amongst the public for future generations.

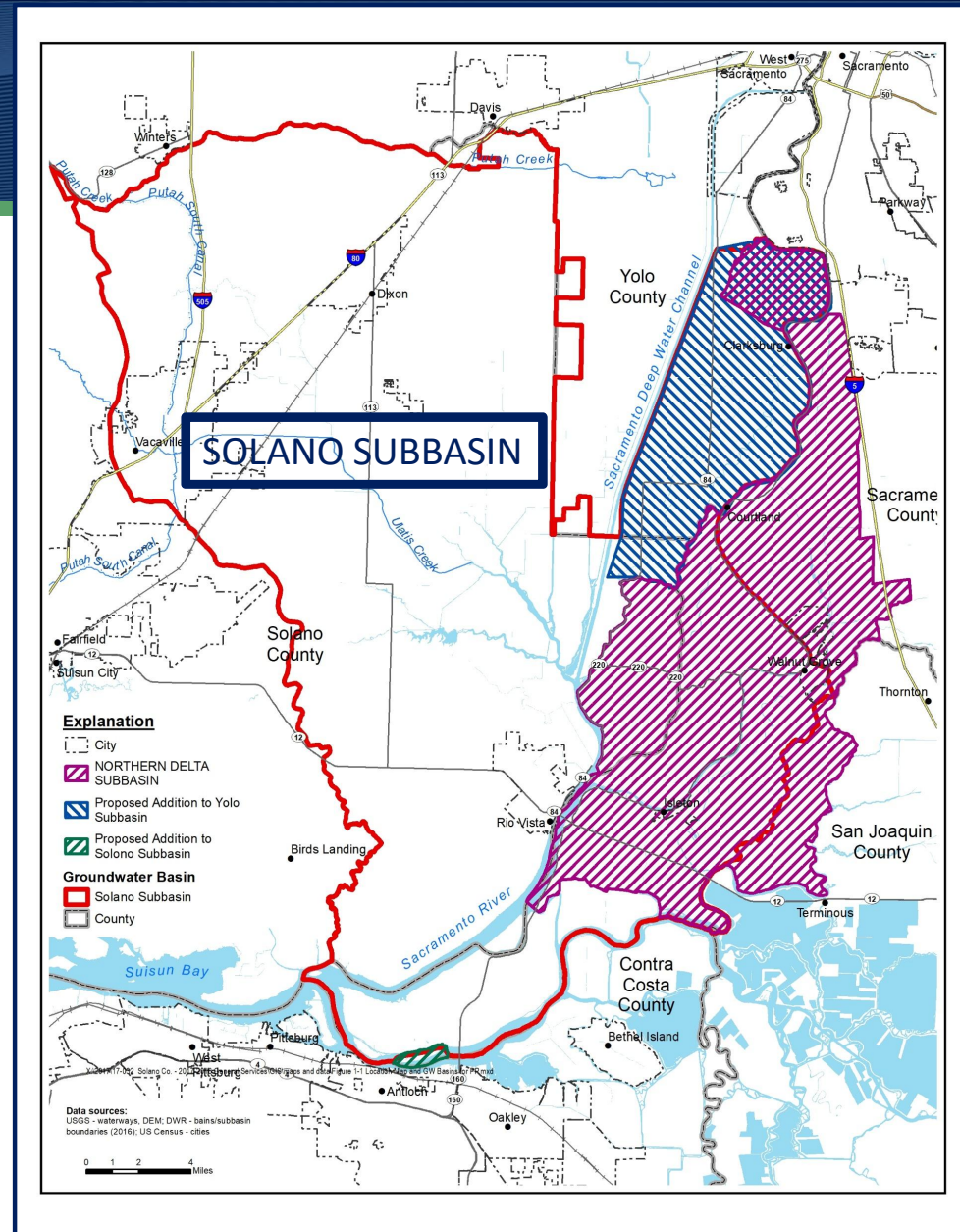
# Schedule: Approximate Stakeholder Engagement (Goal: Robust, worthwhile, meaningful, multiple locations)



✗ = Deliverables

# Solano Subbasin

- Basin Prioritization
- Solano Subbasin:  
Current Boundary (Red)
- Basin Boundary Modifications Requested
  - Yolo Subbasin (Blue)
  - Northern Delta Subbasin (Purple)
  - Sacramento County (Green)





Thank You