



# YSGA Working Group Meeting

---

July 29, 2021



# Agenda

---

- Approve Minutes
- Executive Officer Update
- GSP Development:
  - Review of Sustainable Management Criteria
  - Projects and Management Actions
  - Areas of Special Concern – Winters and Hungry Hollow
  - Draft Chapters of the GSP
  - Report of Data Sharing Efforts
  - Public Workshops
  - Future Working Group Discussions
- Wrap up and Next Steps

# Approve Minutes

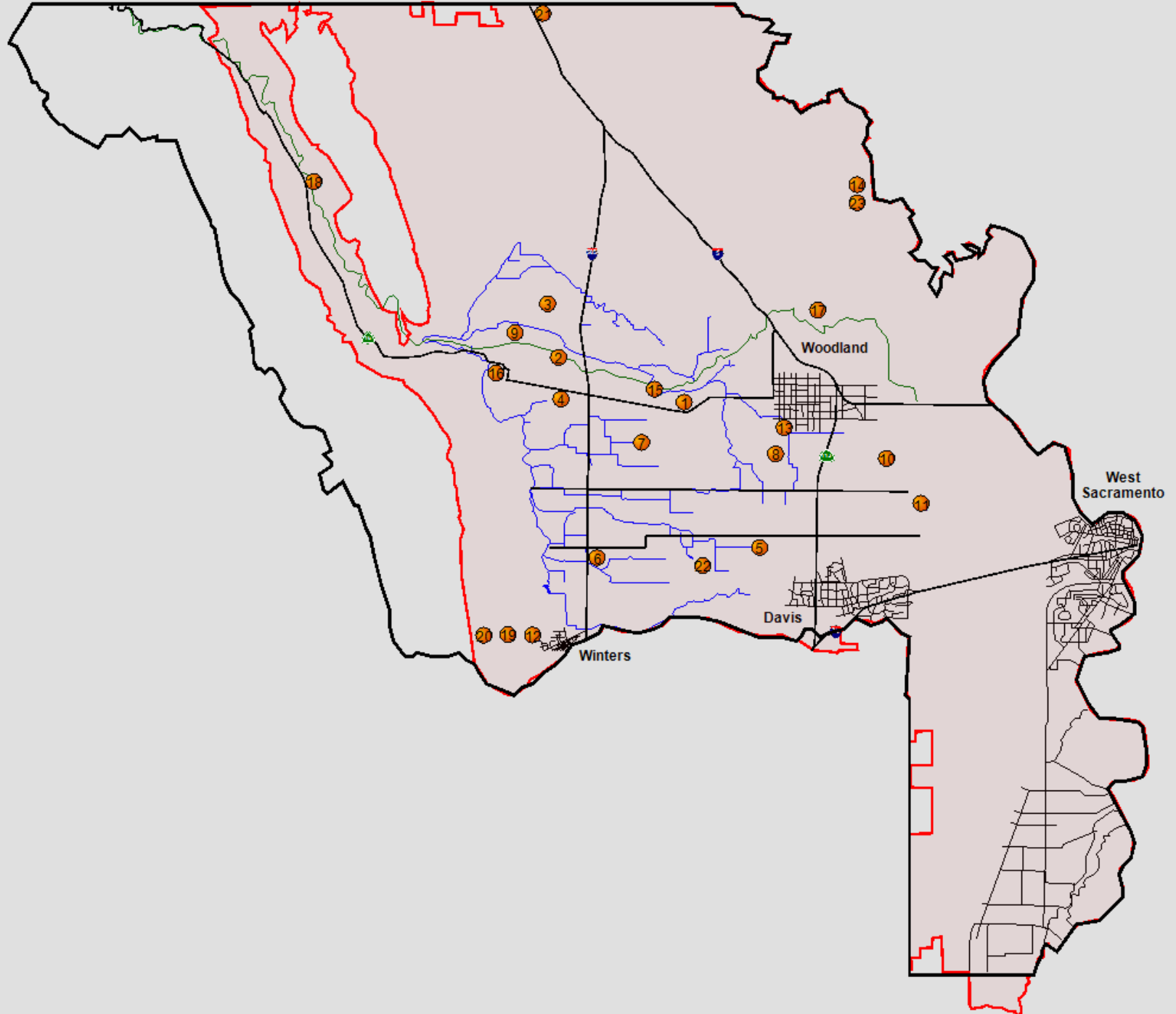
—

# Executive Officer Update

- Real-time monitoring update for 23 groundwater wells (2 new wells)
- Monthly measurements of biannual wells within YCFC&WCD service area – July 2021 update
- Yolo County Board of Supervisors meeting and Local Emergency Declaration (Wild Wings CSA)
- Drought mitigation efforts (PMA development)
- Funding opportunities
  - DWR Drought Assistance
  - ARP
  - DWR SGMA Implementation

# Well Monitoring

Real-Time





SCADA Links


Comparison Trends

Comparison Table

### Legend

Monitoring Site 

YSGA 

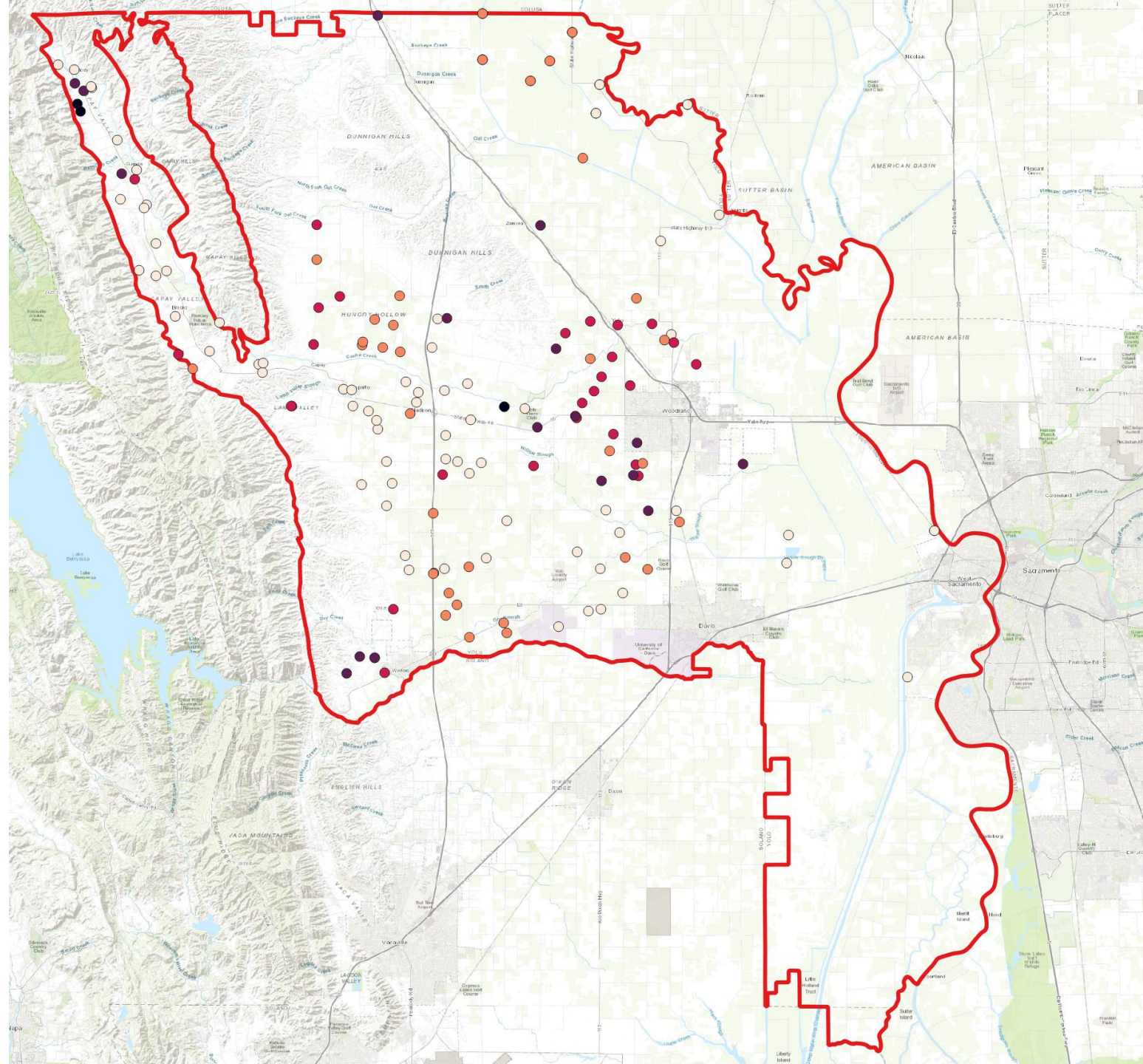
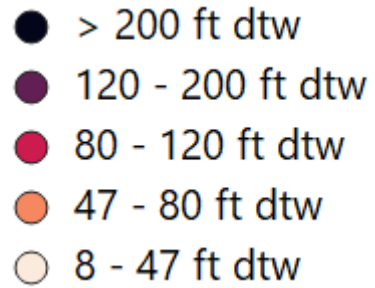
County 





# July 2021 Depth to water

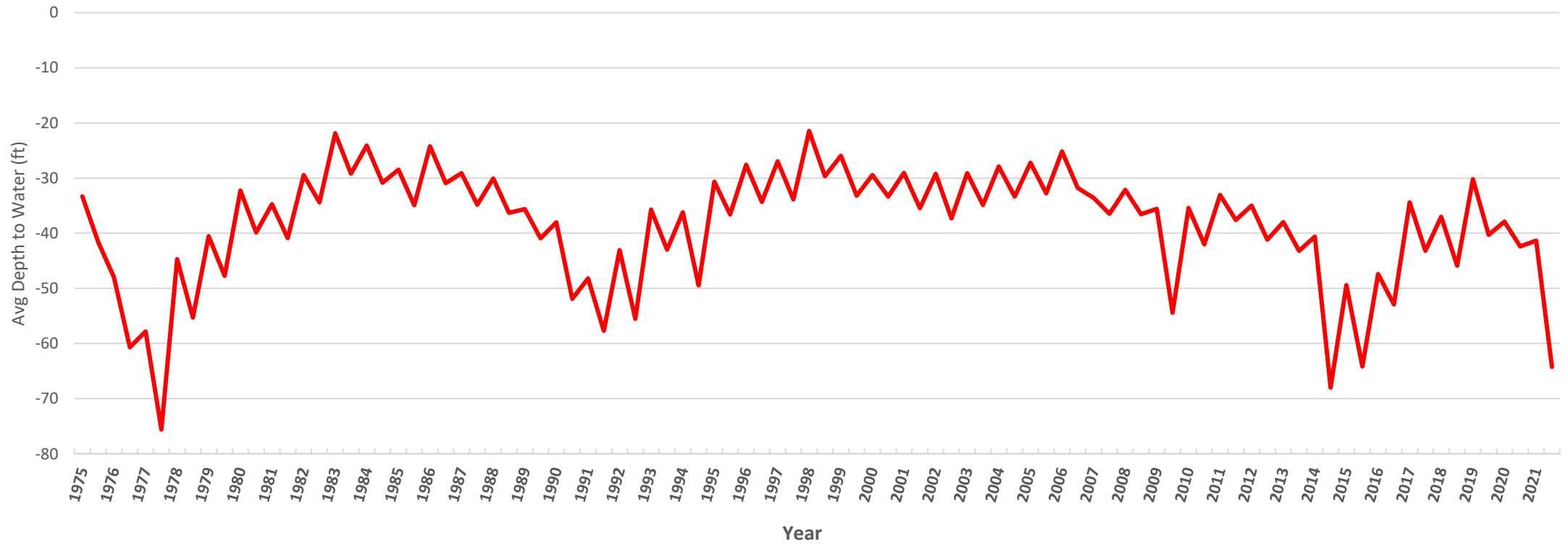
- Incorporates YCFC network & DWR measurements from June - July



# Executive Officer Update

## YFCWCD Average Groundwater

*Depth by Season (July 2021 is 114 wells)*





# Sustainable Management Criteria

- 
- Sustainability Goal
  - Sustainability Indicators
    - Groundwater Level
    - Groundwater Storage
    - Land Subsidence
    - Water Quality
    - Depletions of Interconnected Surface Waters

# Yolo Subbasin Sustainability Goal

The Sustainability Goal for the Yolo Subbasin are as follows:

- Achieve sustainable groundwater management in the Yolo Subbasin by maintaining or enhancing groundwater quantity and quality through the implementation of projects and management actions to support beneficial uses and users.
- Maintain surface water flows and quality to support conjunctive use programs in the Subbasin that promote increased groundwater levels and quality.
- Operate within the established sustainable management criteria and maintain sustainable groundwater use through continued implementation of a monitoring and reporting program.
- Maintain sustainable operations to maintain sustainability over the implementation and planning horizon.

# Groundwater Levels - Groundwater Storage

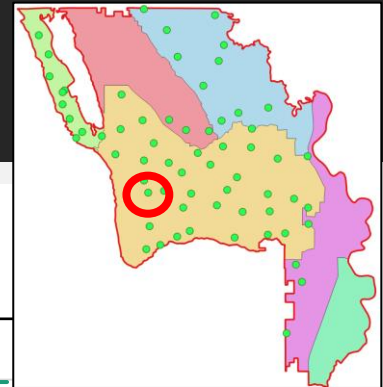
---

The Undesirable Result occurs when the **minimum threshold** criteria is exceeded in **51% or more** of representative monitoring wells in **two (2) management areas**.

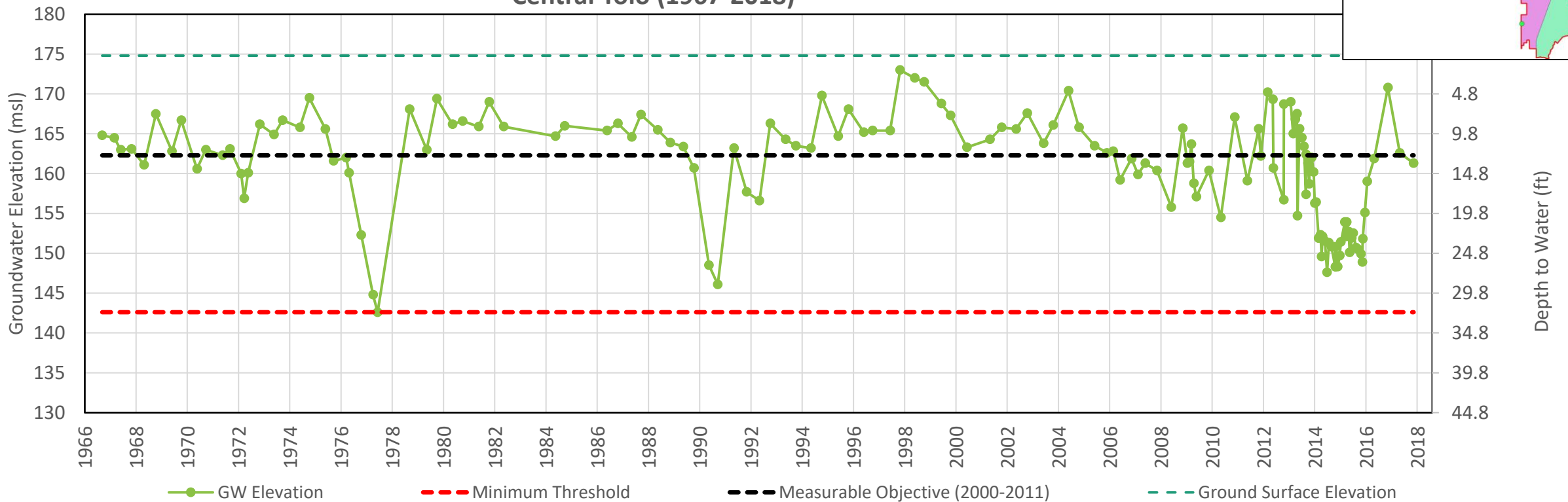
The Minimum Threshold for each representative well is the exceedance of the **historic maximum depth to water** for **two consecutive years**.

The Measurable Objective for each representative well is the **average fall** depth to water between **2000 and 2011**

# Groundwater Levels - Groundwater Storage

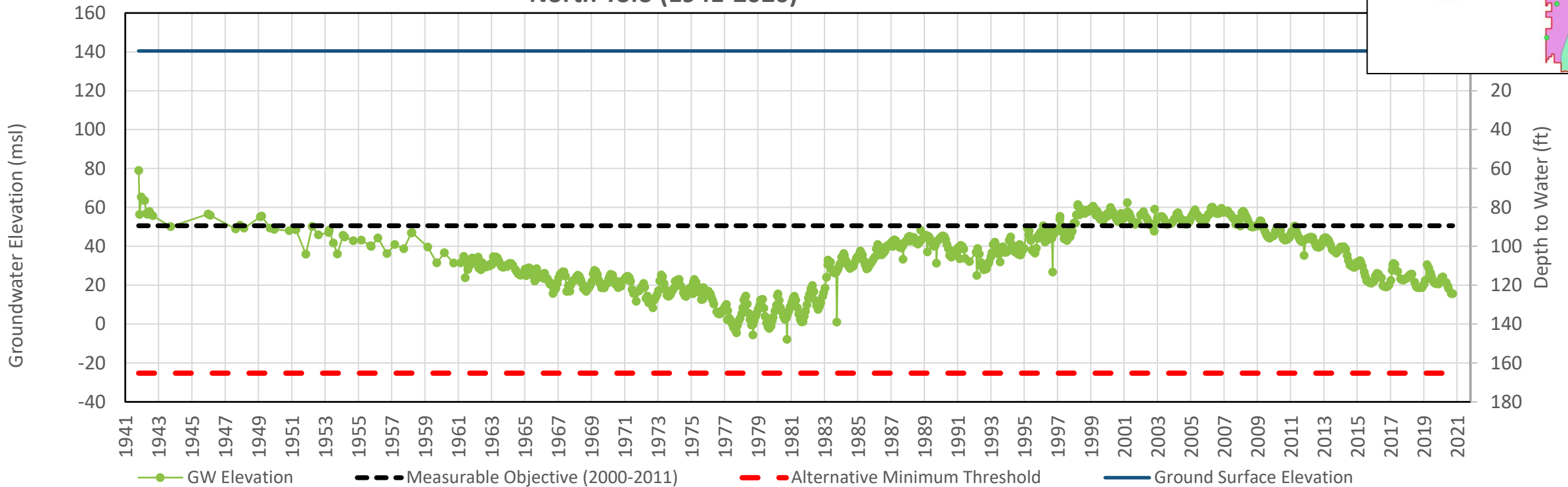


YSGA Representative Well: 240 / SWN: 09N01W21E001M  
Central Yolo (1967-2018)



# Groundwater Levels - Groundwater Storage

YSGA Representative Well 411 / SWN: 12N01W05B001M  
North Yolo (1941-2020)





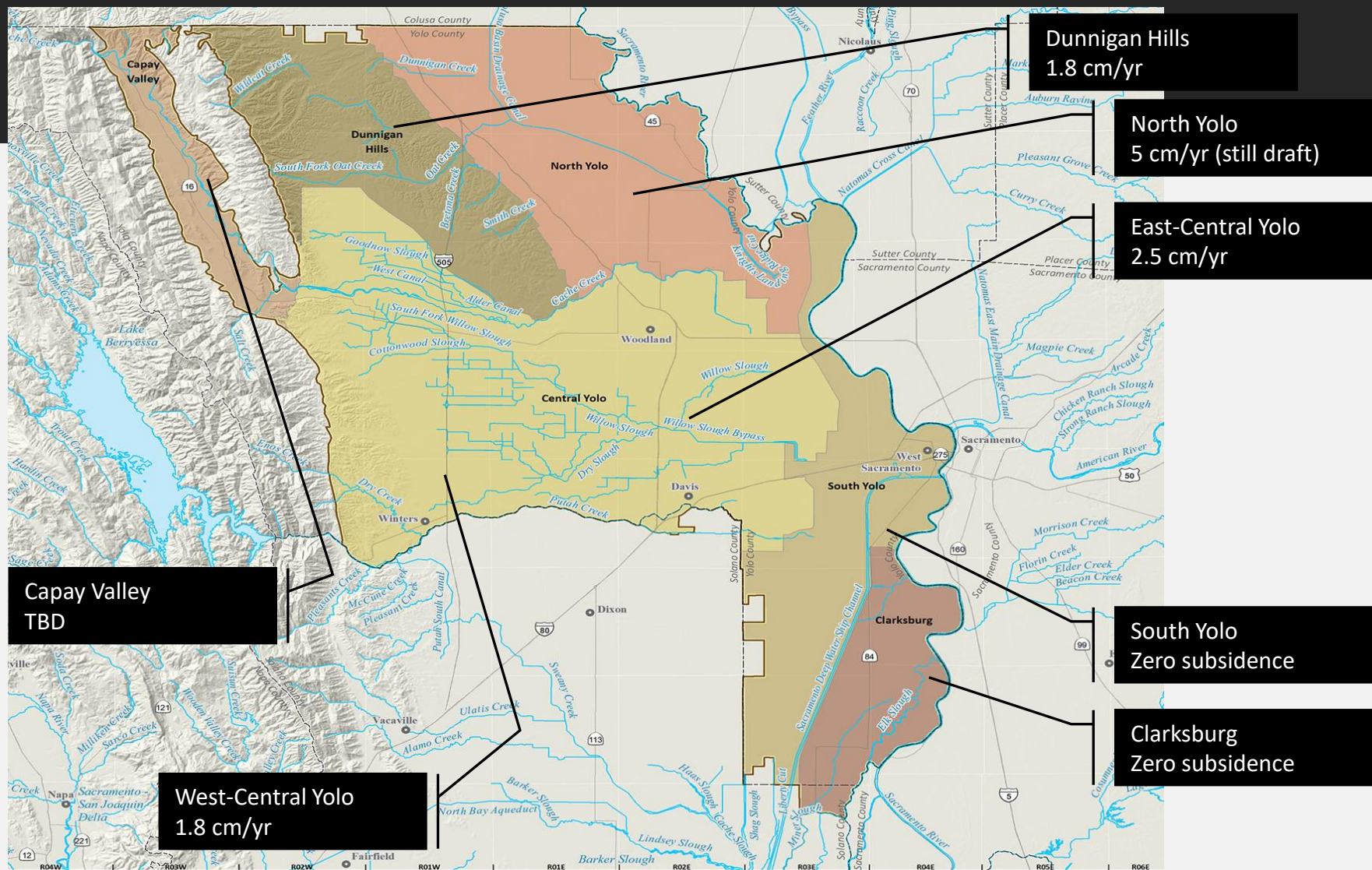
# Land Subsidence

The Undesirable Result occurs when the **Minimum Threshold** value is exceeded in over **25% of three Management Areas**

The Minimum Threshold for each Management Area is exceedance of the **maximum rate of subsidence over a 5-year running average**.

The Measurable Objective for each Management Area is a rate of subsidence no greater than the **maximum rate of subsidence over a 3-year running average**.

# Land Subsidence



# Water Quality

---

## **Undesirable Result**

The point at which water quality is degraded to the extent of causing significant and unreasonable impacts from groundwater management actions in the Yolo Subbasin, that affect the reasonable and beneficial use of, and access to, groundwater by overlying users.

# Water Quality

- No specific Minimum Thresholds or Measurable Objectives
  - Rely on current and future water quality standards established for drinking water and agricultural water uses by State and county regulatory agencies.
- The YSGA will:
  - Annually review water quality monitoring data, in collaboration with regulating agencies, to determine if water quality is being negatively affected by groundwater management activities.
  - Where future significant negative impacts to water quality associated with groundwater management activities are identified, the YSGA will coordinate with stakeholders and regulatory agencies to establish appropriate sustainable management criteria to avoid the occurrence of basin-wide undesirable results.

# Water Quality

- Identified a list of water quality constituents of concern
  - including those constituents whose presence, distribution or concentration can be influenced by groundwater management activities.
- Water quality constituents of concern:
  - Total Dissolved Solids (TDS),
  - Nitrate,
  - Boron, and
  - Hexavalent Chromium (VI).



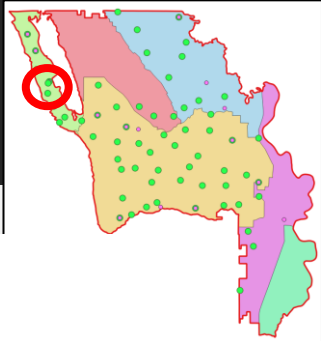
# Interconnected Surface Water Management Zones

The Undesirable Result occurs when the **minimum threshold** criteria is exceeded in **51% or more** of representative monitoring wells in **two (2) management zones**

- **Upper Cache Creek:** Upstream of Capay Dam (coincident with the Capay Valley Management Area).
- **Lower Cache Creek:** Downstream of Capay Dam to the Cache Creek Settling Basin
- **Upper Sacramento River Reach:** From Northern Subbasin boundary to southern boundary of the North Yolo Management Area
- **Lower Sacramento River Reach:** From Southern boundary of the North Yolo Management Area to southern Subbasin boundary
- **Putah Creek:** From Western Subbasin boundary to its drainage in the Yolo Bypass Wildlife Area

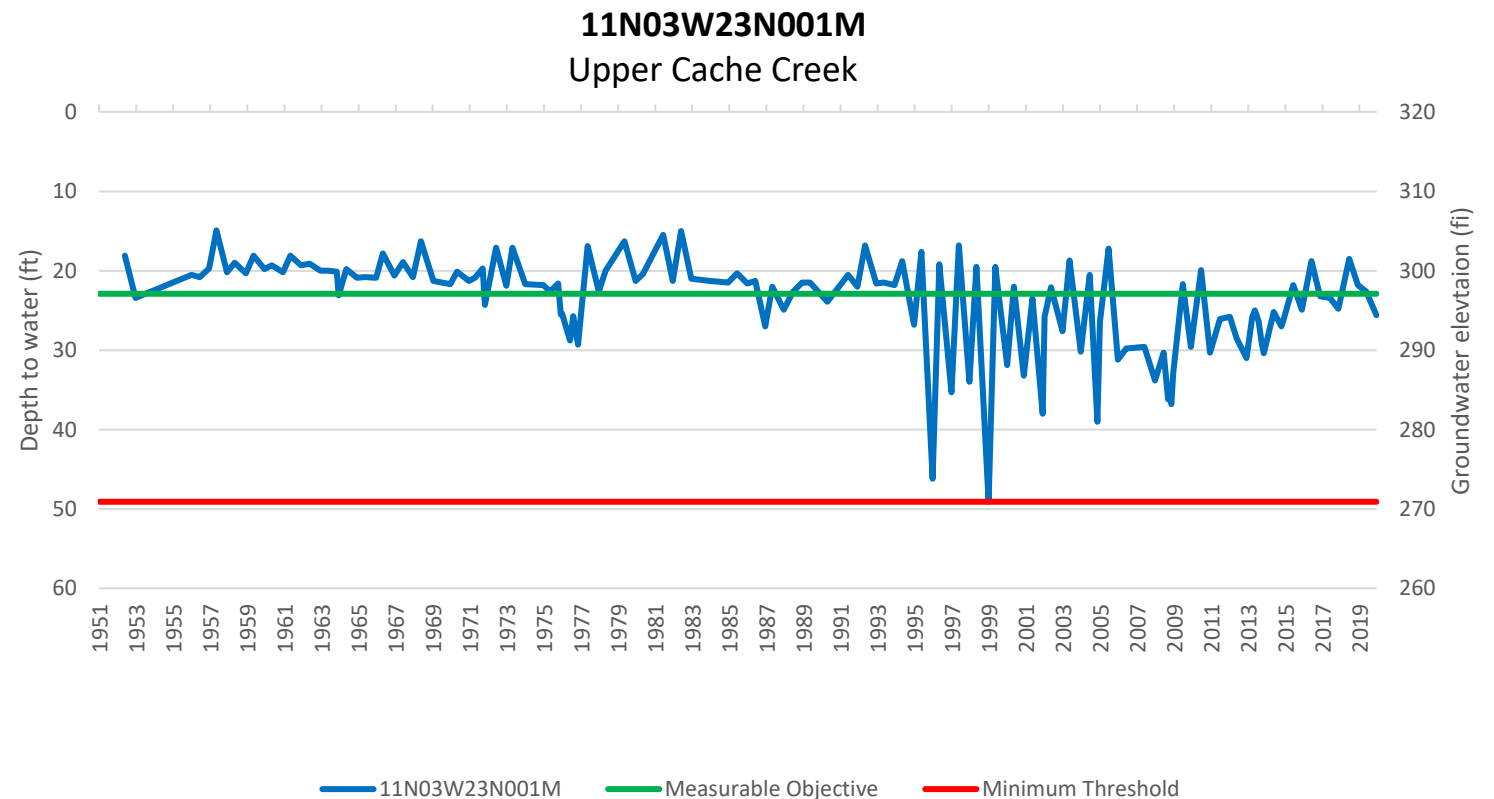
# Depletions of Interconnected Surface Waters

## Perennial Streams



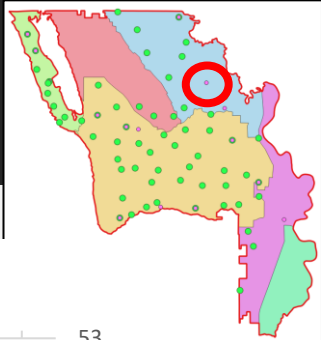
The Minimum Threshold for each representative well is the exceedance of the **historic maximum depth to water** for **two consecutive years**.

The Measurable Objective for each representative well is the **average spring depth to water** between **2000 and 2011**



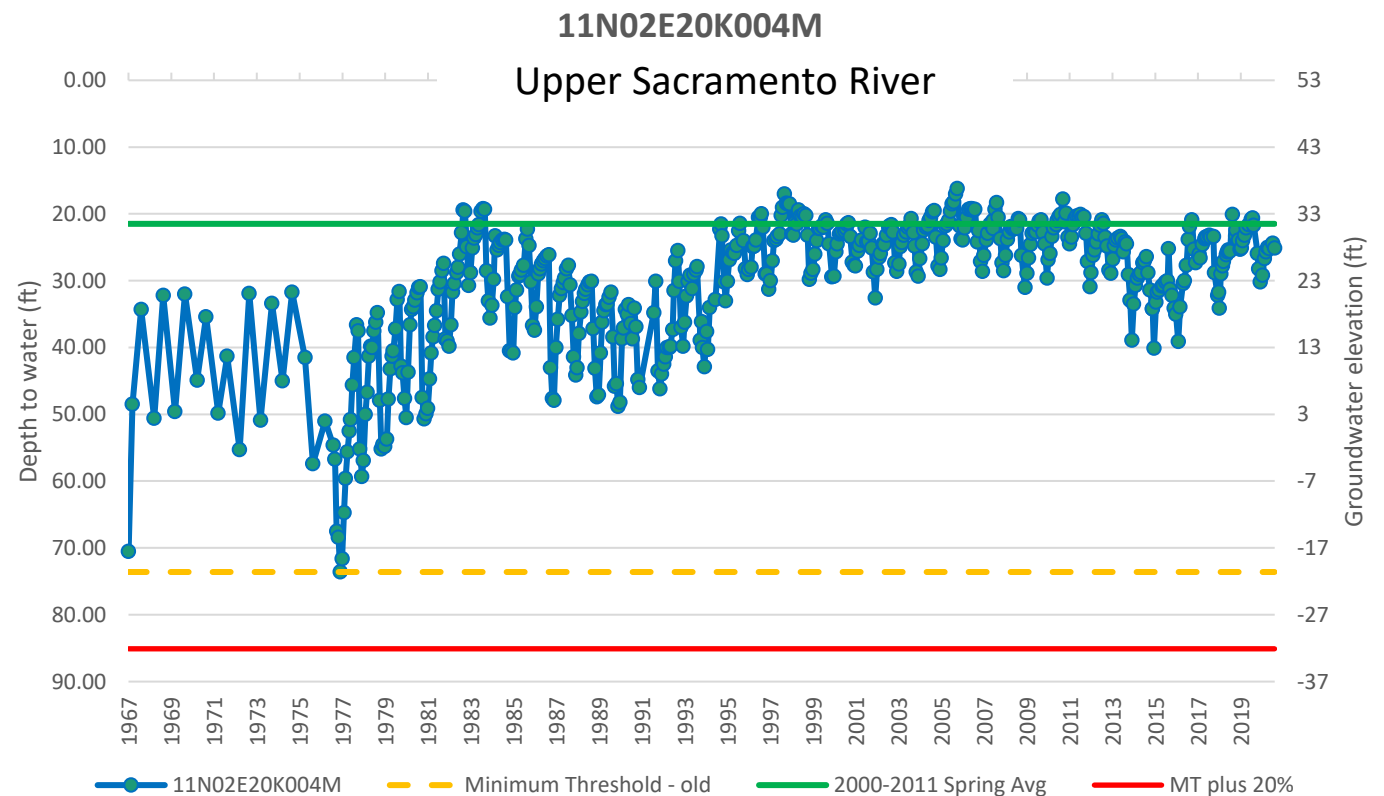
# Depletions of Interconnected Surface Waters

## Upper Sacramento River



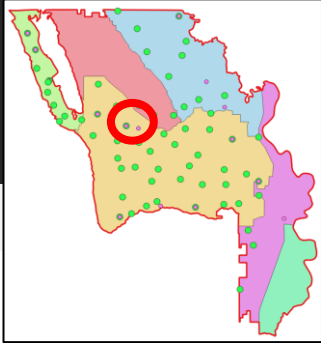
The Minimum Threshold for each representative well is the exceedance of **20% lower than the historic range** in depth to water for **two consecutive years**.

The Measurable Objective for each representative well is the **average spring** depth to water between **2000 and 2011**



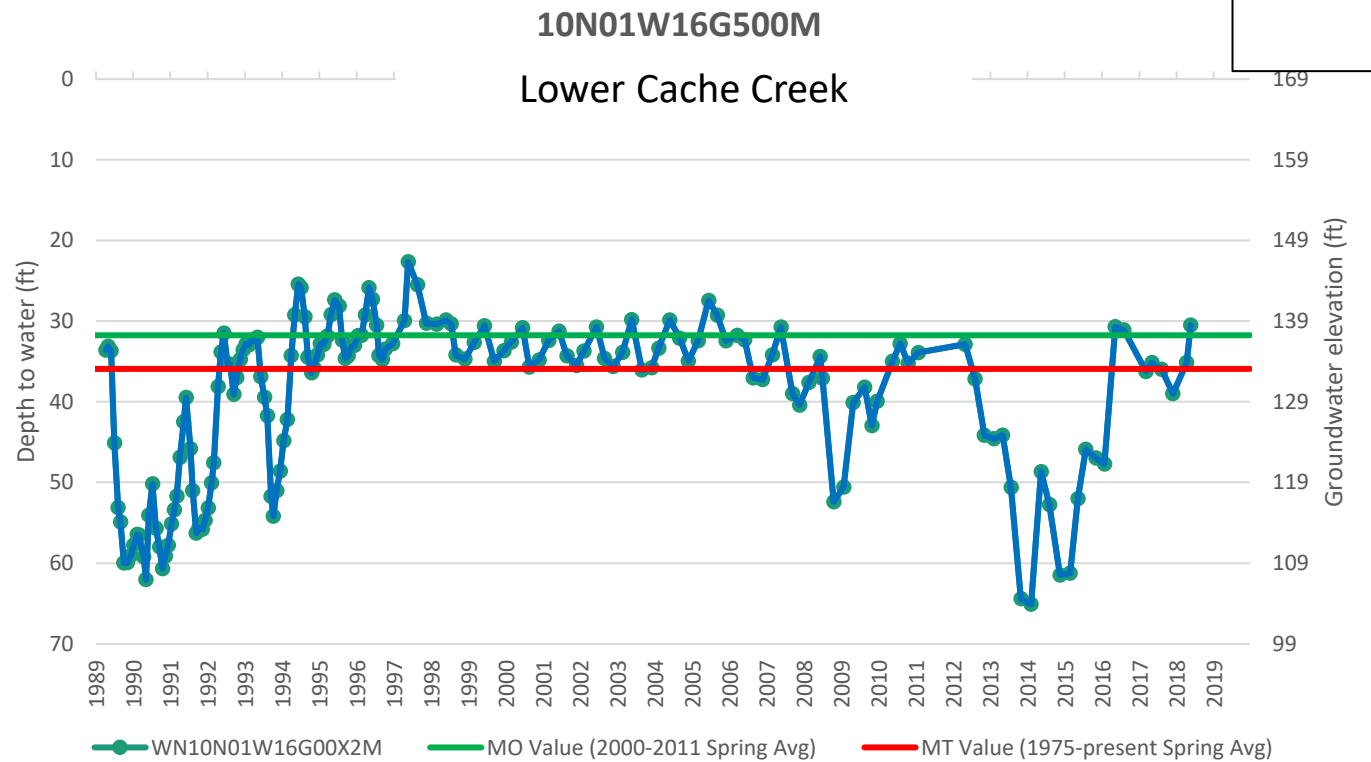
# Depletions of Interconnected Surface Waters

## Intermittent Streams



The Minimum Threshold for each representative well is the recurrence of the **spring average** measurement for 1975-present in at least **one spring in every seven (7) years**.

The Measurable Objective for each representative well is the **average spring** depth to water between **2000 and 2011**



# Sustainable Management Criteria

- 
- Questions, comments, brief discussion



# Project and Management Actions

—

# Project and Management Actions

## Summary of Requirements (23 CCR § 354.44)

- List and description of projects and management actions and description of the sustainability indicator that will be benefited from implementation
- Circumstances under which the project or management action will be implemented
- Public notice process
- Permitting requirements
- Current project status
- Timeline for initiation, completion and accrual of expected benefits
- Explanation of expected benefits
- Explanation of how projects and management actions will be accomplished (description of water sources)
- Description of legal authority to develop projects and management actions
- Estimated costs

# Project and Management Actions

- 
- 12 Proposed & Ongoing Management Actions
  - 71 Proposed & Ongoing Projects

# Management Actions

---

- **MA 1:** Continued and Improved Groundwater Monitoring Program
- **MA 2:** Coordinated Response to Minimum Threshold Exceedances
- **MA 3:** Continue Coordination Efforts with Other Management and Monitoring Entities
- **MA 4:** Subsidence Monitoring Program
- **MA 5:** Preparedness Through Increased Groundwater Recharge and Managed Aquifer Recharge Projects
- **MA 6:** Conjunctive Water Use Program
- **MA 7:** Increased Outreach and Information Sharing of Groundwater Resources and Knowledge Within the Yolo Subbasin
- **MA 8:** Domestic Well Impact Mitigation Program
- **MA 9:** Surface Water Monitoring Program
- **MA 10:** Management Consideration of Grey Areas in the Yolo Subbasin
- **MA 11:** Coordination Efforts with Land Use Planning Entities
- **MA 12:** Continued Investigation of Subsurface Geology and Aquifer Properties in the Yolo Subbasin

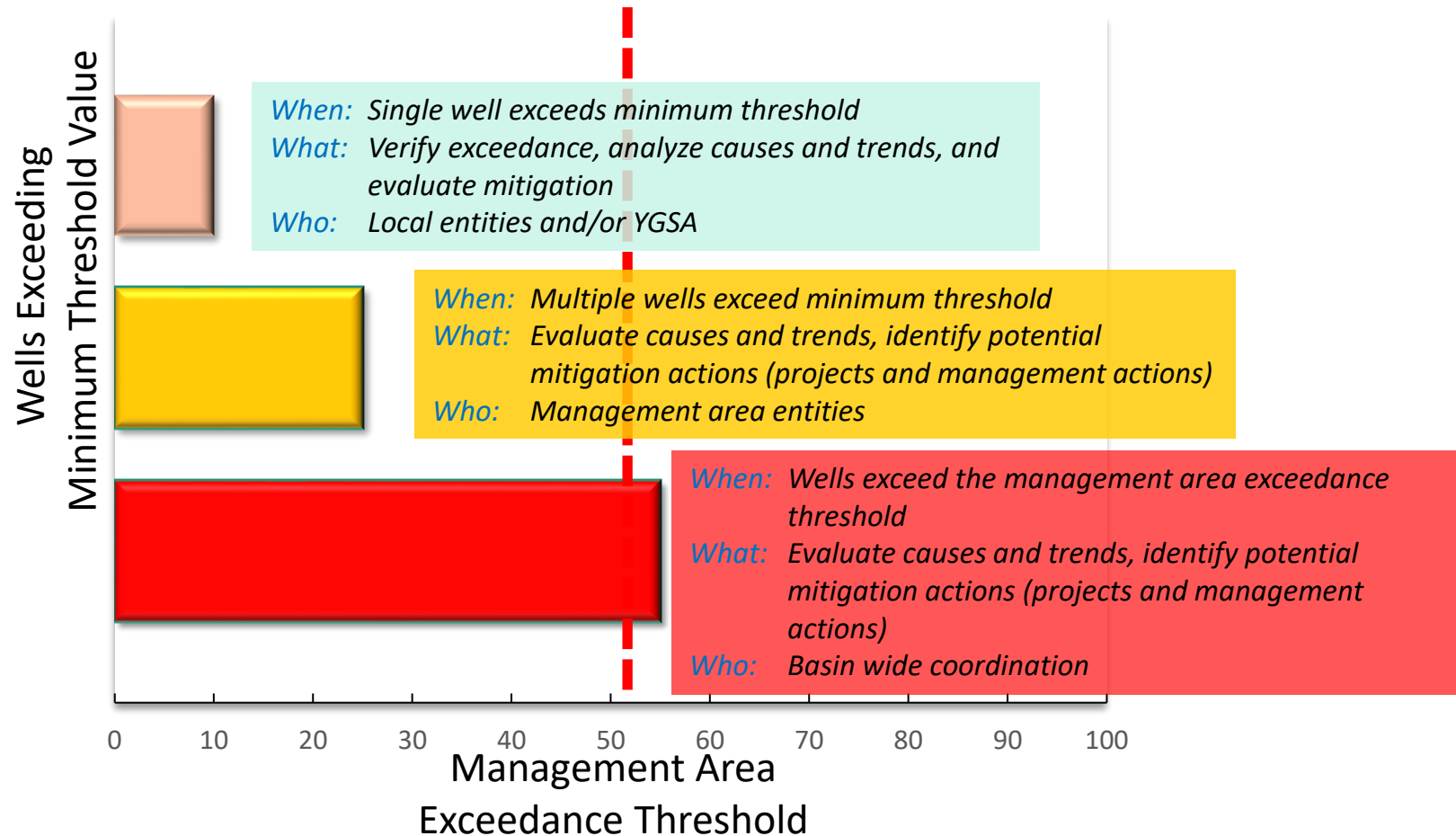
# MA 1: Continued and Improved Groundwater Monitoring Program

---



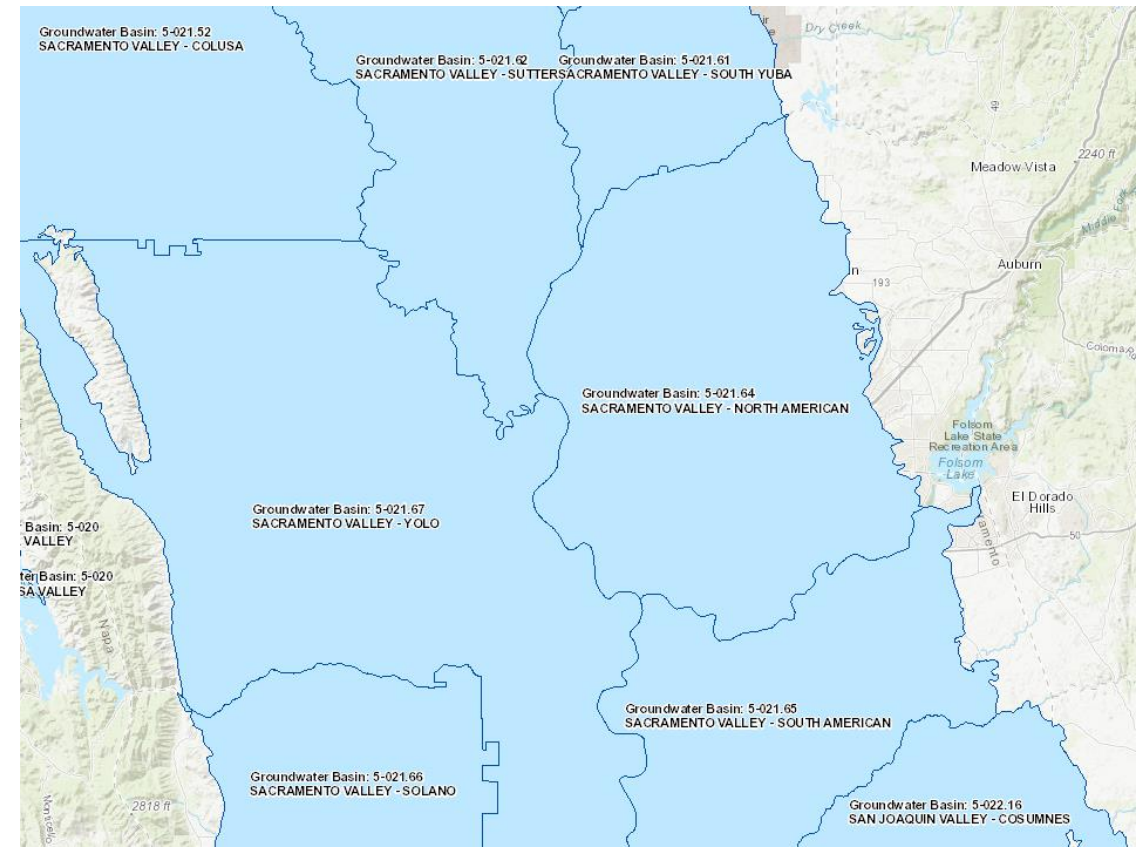
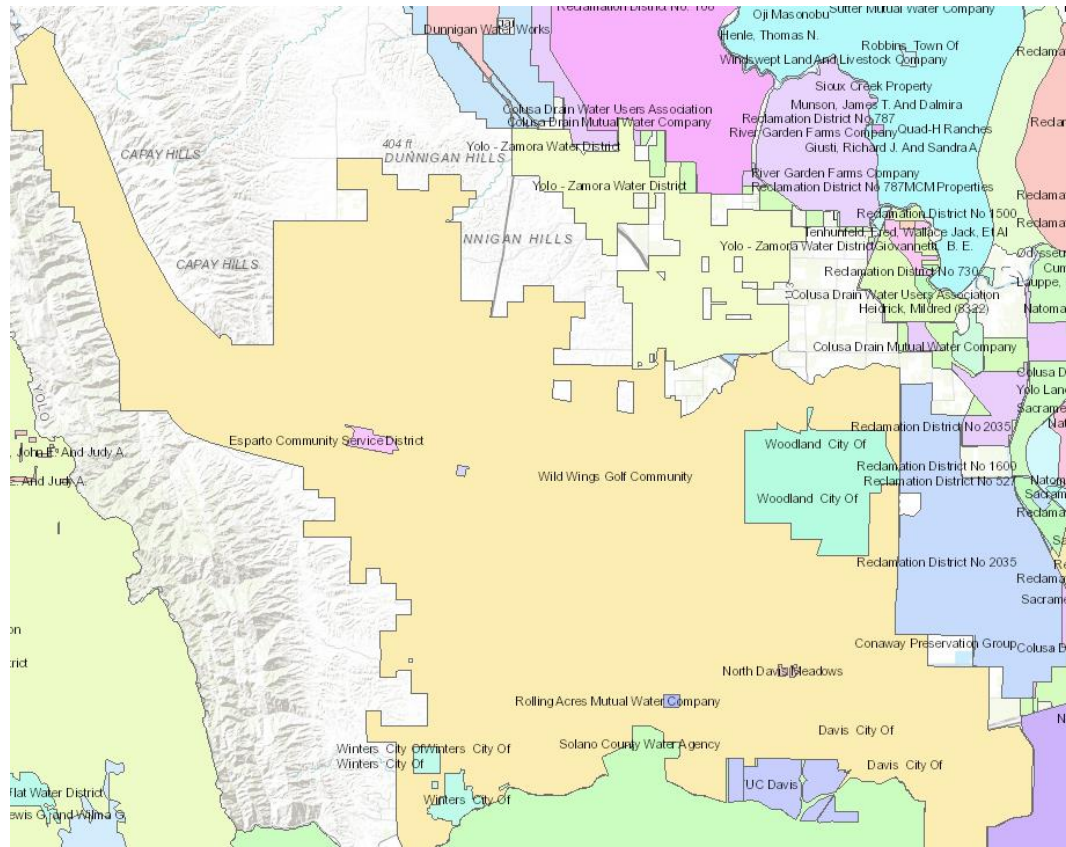
# MA 2: Coordinated Response to Minimum Threshold Exceedances

*Exceeding the Minimum Threshold in any well is important and will be addressed*

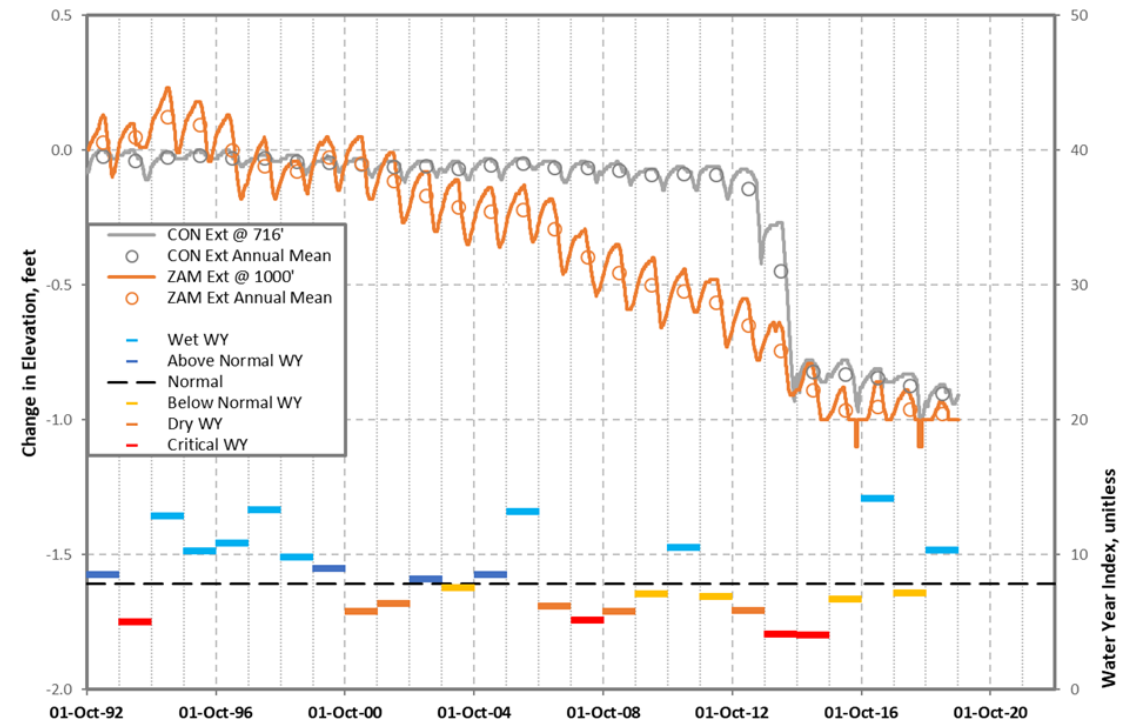
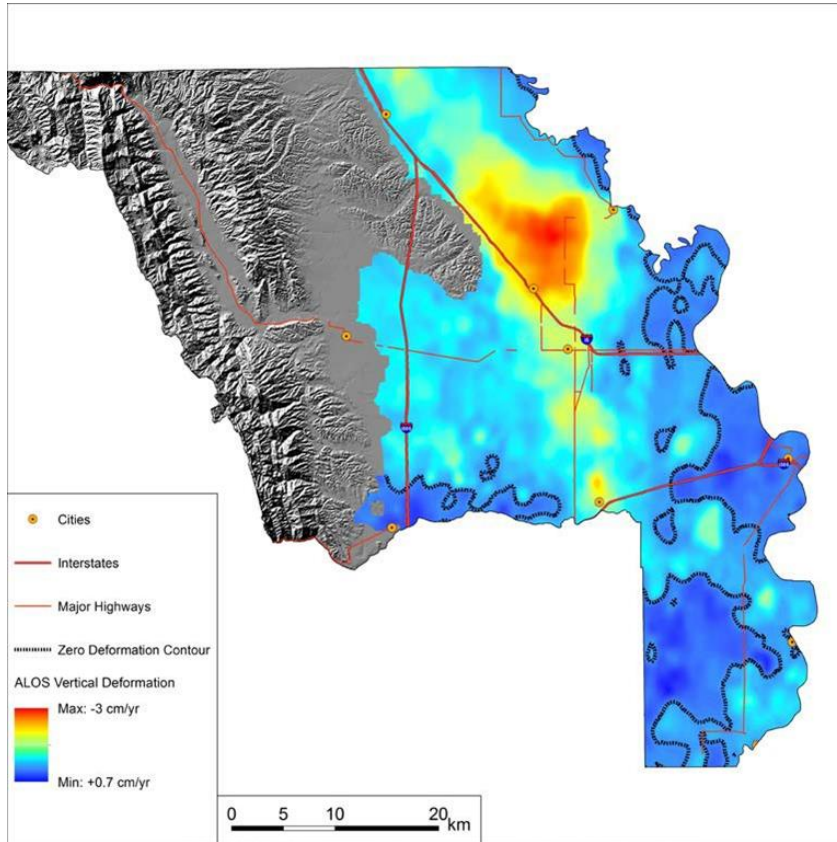




# MA 3: Continue Coordination Efforts with Other Management and Monitoring Entities



# MA 4: Subsidence Monitoring Program





# MA 5: Preparedness Through Increased Groundwater Recharge and Managed Aquifer Recharge Projects

---



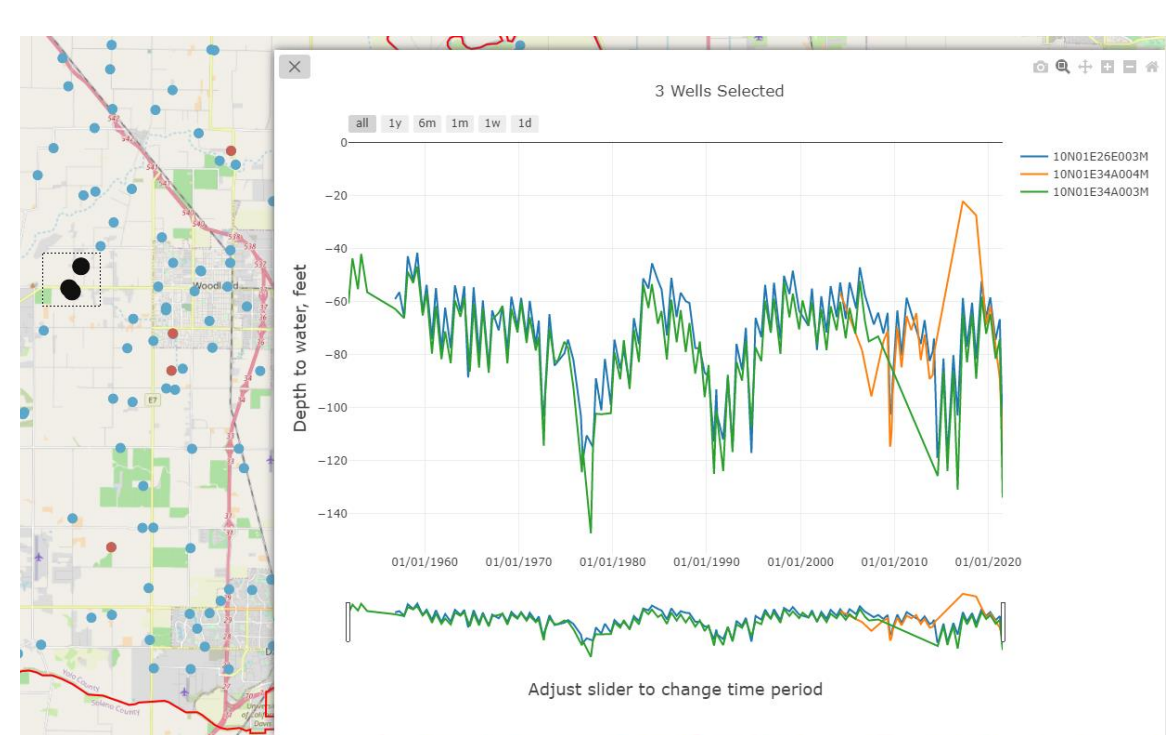
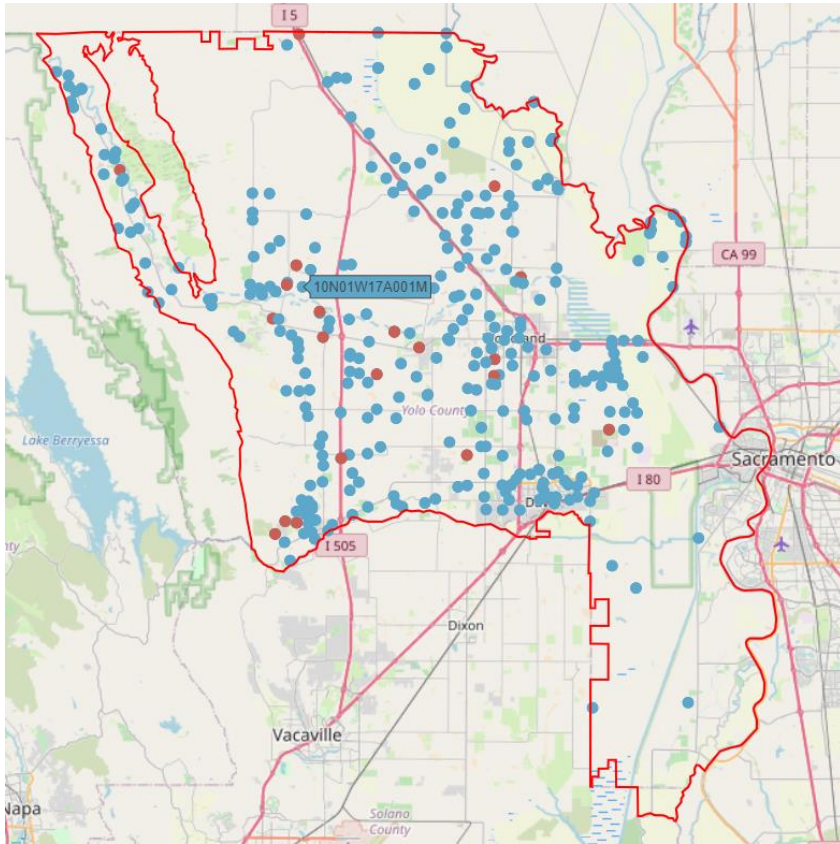


# MA 6: Conjunctive Water Use Program

---



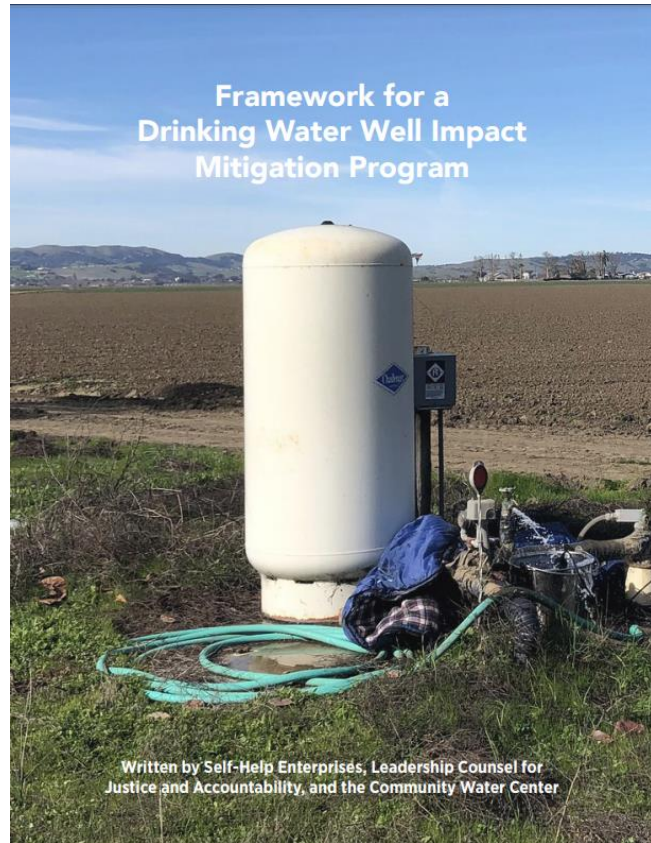
# MA 7: Increased Outreach and Information Sharing of Groundwater Resources and Knowledge Within the Yolo Subbasin



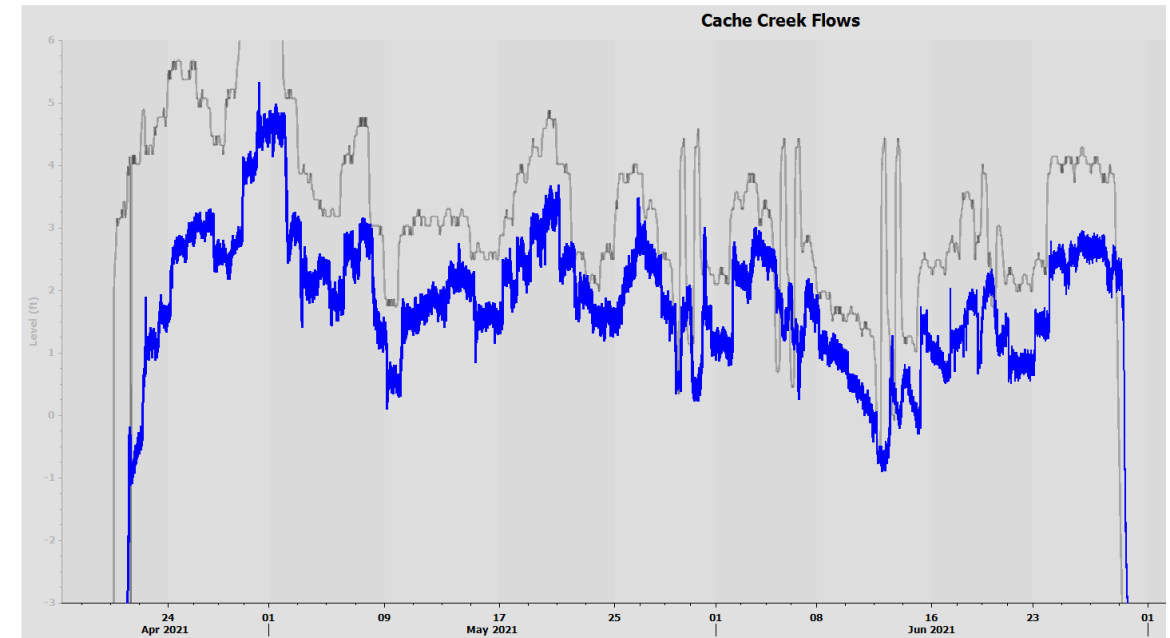
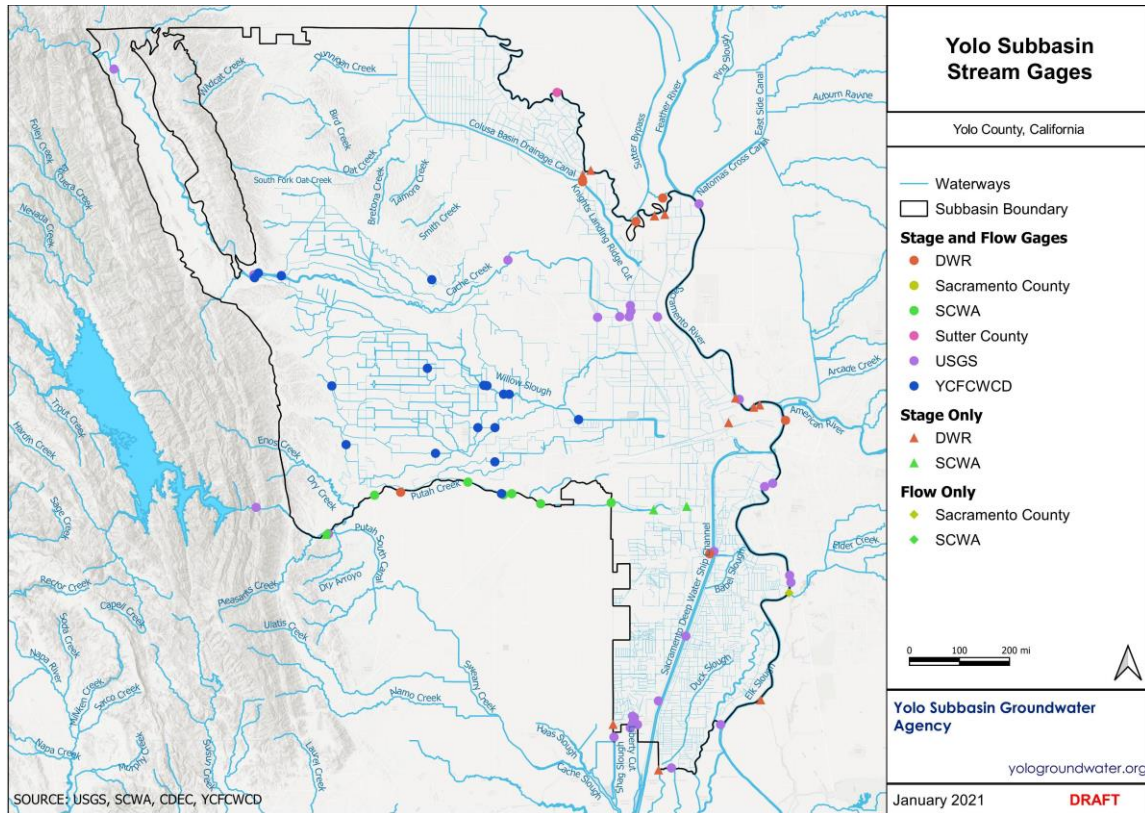


# MA 8: Domestic Well Impact Mitigation Program

---

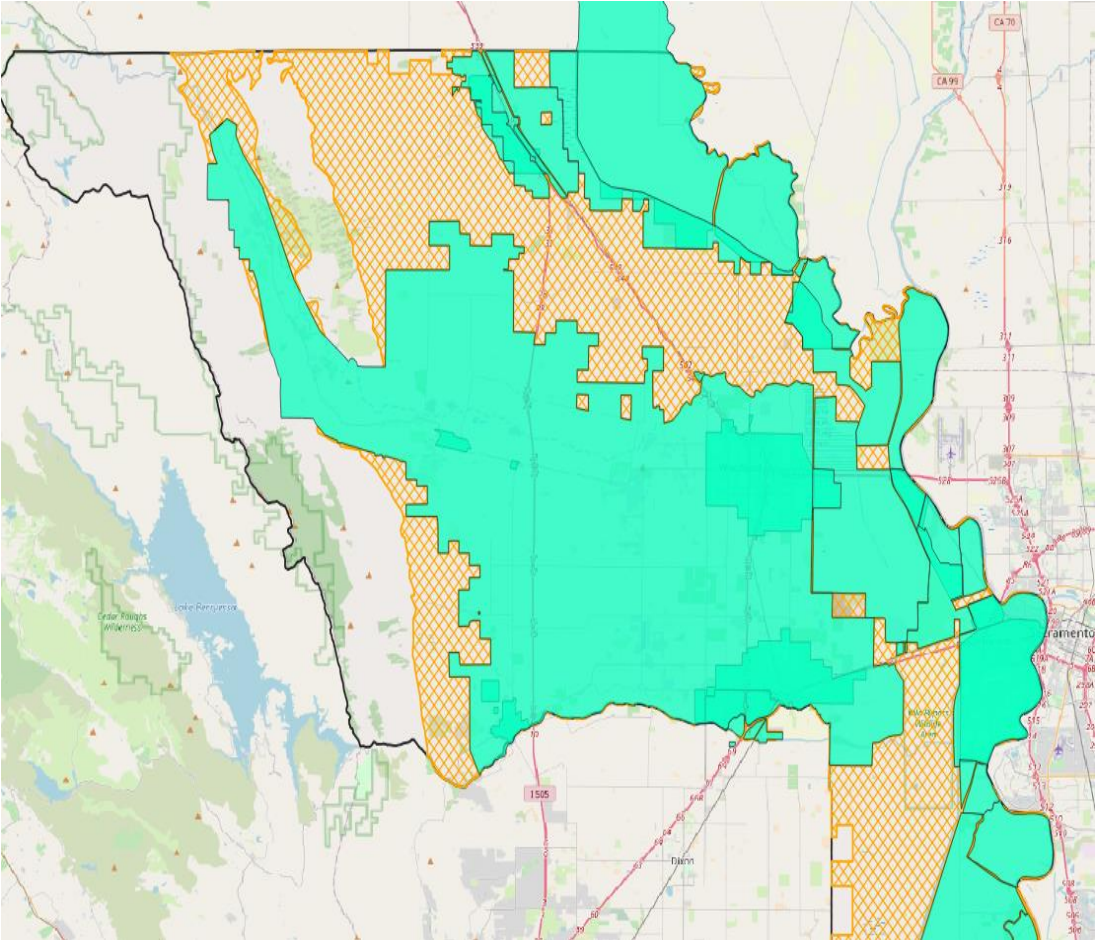


# MA 9: Surface Water Monitoring Program



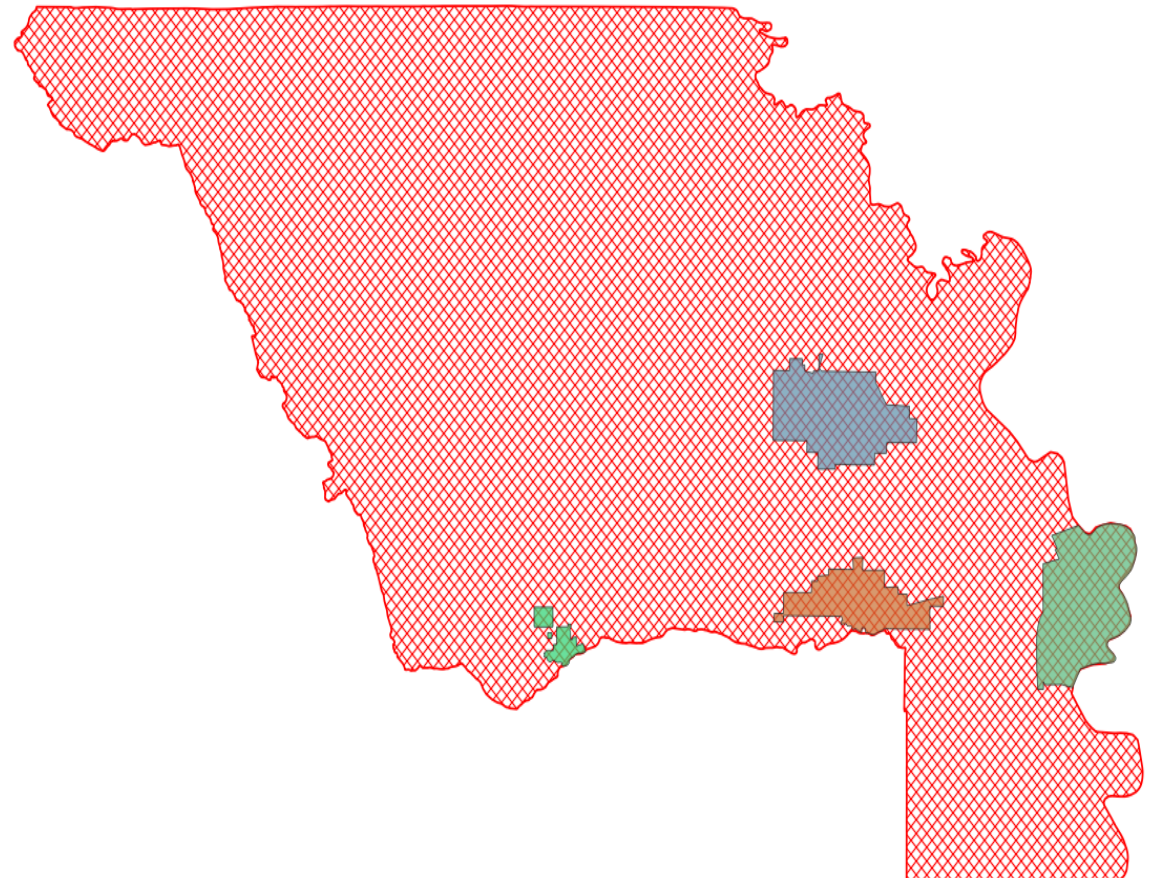


# MA 10: Management Consideration of Grey Areas in the Yolo Subbasin

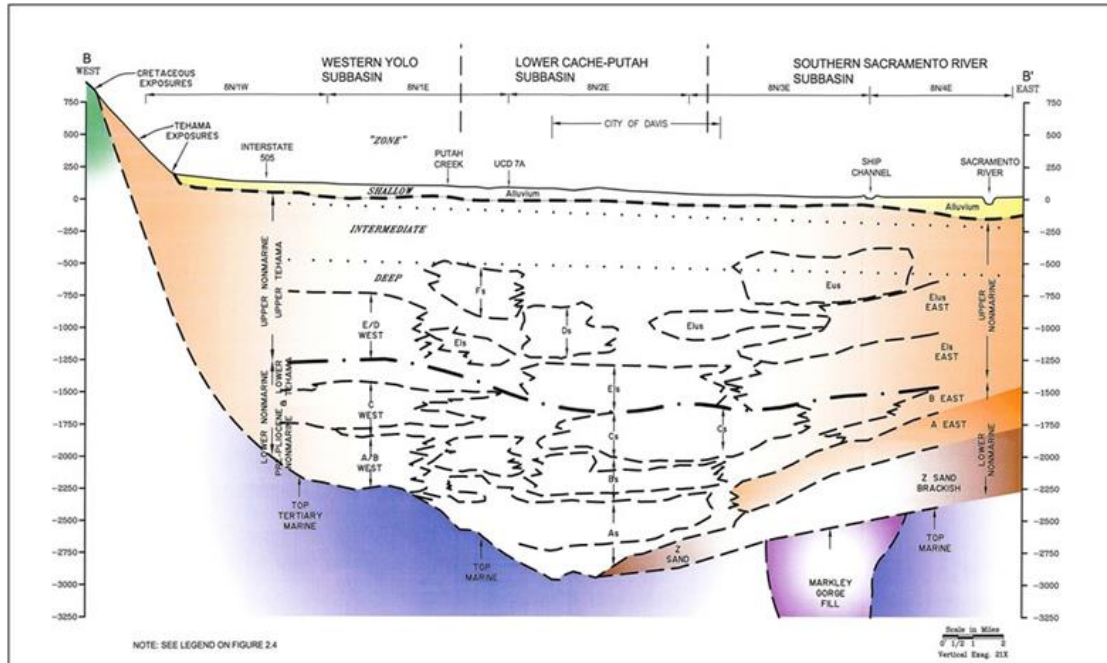


# MA 11: Coordination Efforts with Land Use Planning Entities

- Yolo County
- Davis
- Woodland
- Winters
- West Sacramento



# MA 12: Continued Investigation of Subsurface Geology and Aquifer Properties in the Yolo Subbasin

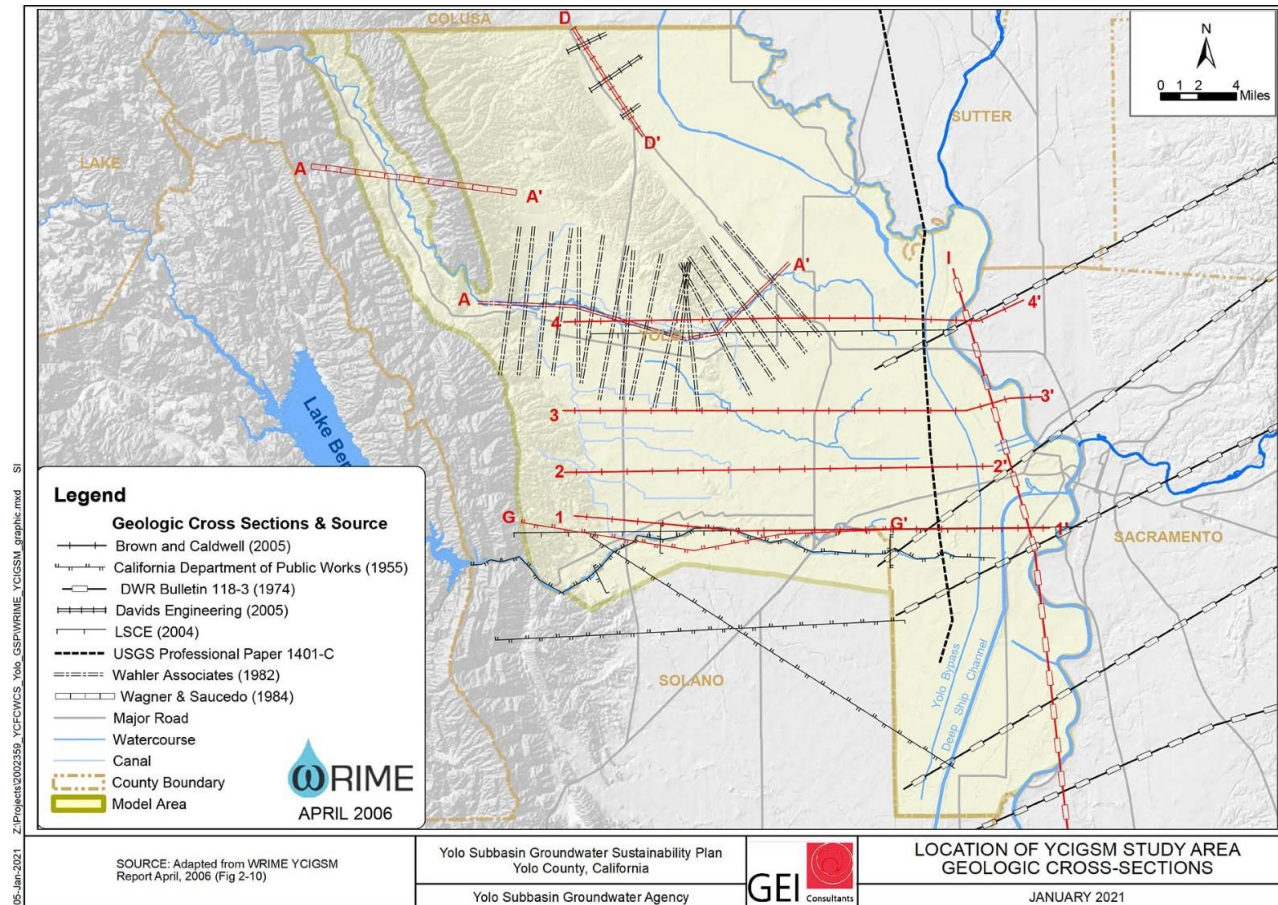


LU-DORFF & SCALMANINI  
CONSULTING ENGINEERS

Yolo Subbasin Groundwater Agency  
Yolo County, California



Internal Draft



## Legend

- Geologic Cross Sections & Source**
- Brown and Caldwell (2005)
  - California Department of Public Works (1955)
  - DWR Bulletin 118-3 (1974)
  - Davids Engineering (2005)
  - LSCE (2004)
  - USGS Professional Paper 1401-C
  - Wahler Associates (1982)
  - Wagner & Saucedo (1984)
  - Major Road
  - Watercourse
  - Canal
  - County Boundary
  - Model Area



APRIL 2006

SOURCE: Adapted from WRIME YCIGSM  
Report April, 2006 (Fig 2-10)

Yolo Subbasin Groundwater Sustainability Plan  
Yolo County, California  
Yolo Subbasin Groundwater Agency



LOCATION OF YCIGSM STUDY AREA  
GEOLOGIC CROSS-SECTIONS

JANUARY 2021



# Projects – Subbasin Wide

- 
- Identification of Locations Vulnerable to Damage from Subsidence – Catalog of Infrastructure Damage Reports
  - Groundwater Model Enhancement Program/YSGA Model Improvements
  - Water Resources Information Database Project
  - Topographic Mapping (LiDAR Project)
  - Additional Monitoring Wells Along Ephemeral Streams, Interconnected Surface Water Bodies, and near GDEs
  - Vegetative and Aquatic Surveys in Related to Groundwater Dependent Ecosystems
  - AEM Flights to Improve subsurface Geology Data
  - Abandoned Well Incentive Program

# Sample Projects – North Yolo

- 
- Zamora area winter recharge from Cache Creek via China Slough
  - Dunnigan Hills Winter Runoff Capture for Recharge
  - Winter Diversions from Tehama-Colusa Canal
  - Buckeye Creek Recharge
  - Extension of Tehama Colusa Canal
  - Trickle Flow to Ephemeral Streams

# Sample Projects – Central Yolo

- 
- Forbes Ranch Regulating Pond
  - West Adams Canal Renovation and China Slough Rehabilitation
  - Diaz In-Line Reservoir
  - North of Winters Multi-use, stormwater, and storage pond
  - West Winters Aquifer Storage and Recovery Well Field
  - City of Davis Aquifer Storage and Recovery
  - Madison Farmer Field Stormwater Capture and Groundwater Recharge

# Sample Projects – Capay Valley

- 
- Improved Hydrologic Flows, increased runoff retention, and improved watershed health in the Capay Valley
  - Enhanced Water Infiltration via Grazing Management and Crop Production Practices in the Capay Valley
  - Oak Woodland, Riparian, and Chaparral Restoration
  - Establish an Equipment and Knowledge Hub in the Capay Valley
  - Rumsey and Guinda Ditch Winter Recharge

# Sample Projects – South Yolo

- 
- Yolo Bypass Conservation Projects
  - Revisions to the YSGA Model for Urban Groundwater Usage in the Youth Yolo MA
  - Methylmercury Impacts Analyses for the Yolo Bypass

# Sample Projects – Dunnigan Hills

- 
- Dry Well Groundwater Recharge on California Olive Ranch
  - Projects to Improve Understanding of Surface Water/Groundwater Interaction around streams in the Dunnigan Hills
  - Additional Groundwater Monitoring Wells in the Dunnigan Hills MA
  - Evaluation of off-stream reservoir sites

# Sample Projects - Clarksburg

- 
- Additional Groundwater Monitoring Wells in the Clarksburg MA
  - Reclamation District 999 – Elk Slough Groundwater Quality Improvement and Flood Protection Project

# Solicitation of Additional Projects Ideas

- 
- Google Form – on website
  - Excel Spreadsheet – on website
  - E-mail: [info@yolosga.org](mailto:info@yolosga.org)



# Projects and Management Actions



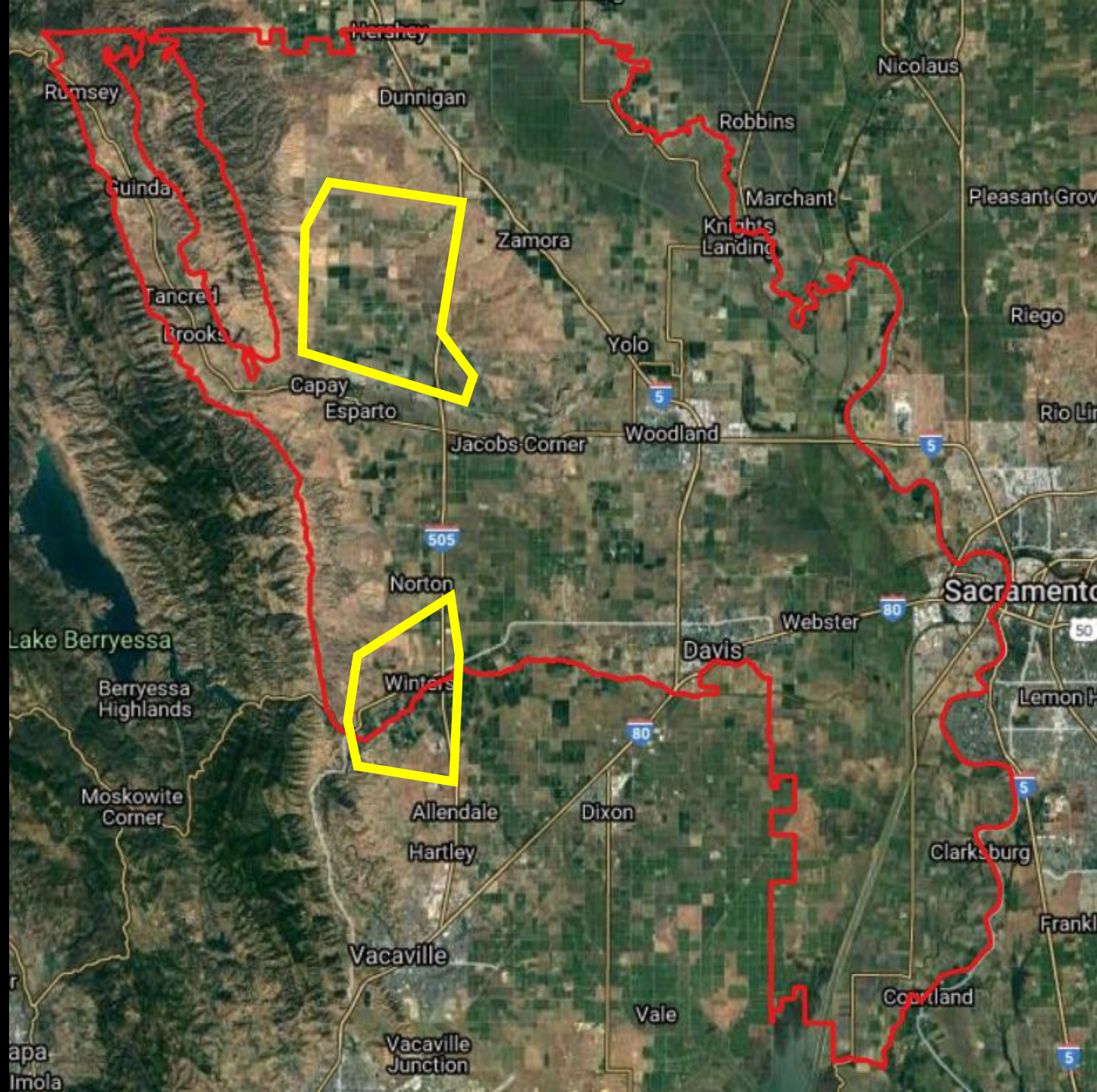
- Questions, comments, brief discussion

# Areas of Special Concern - Winters and Hungry Hollow

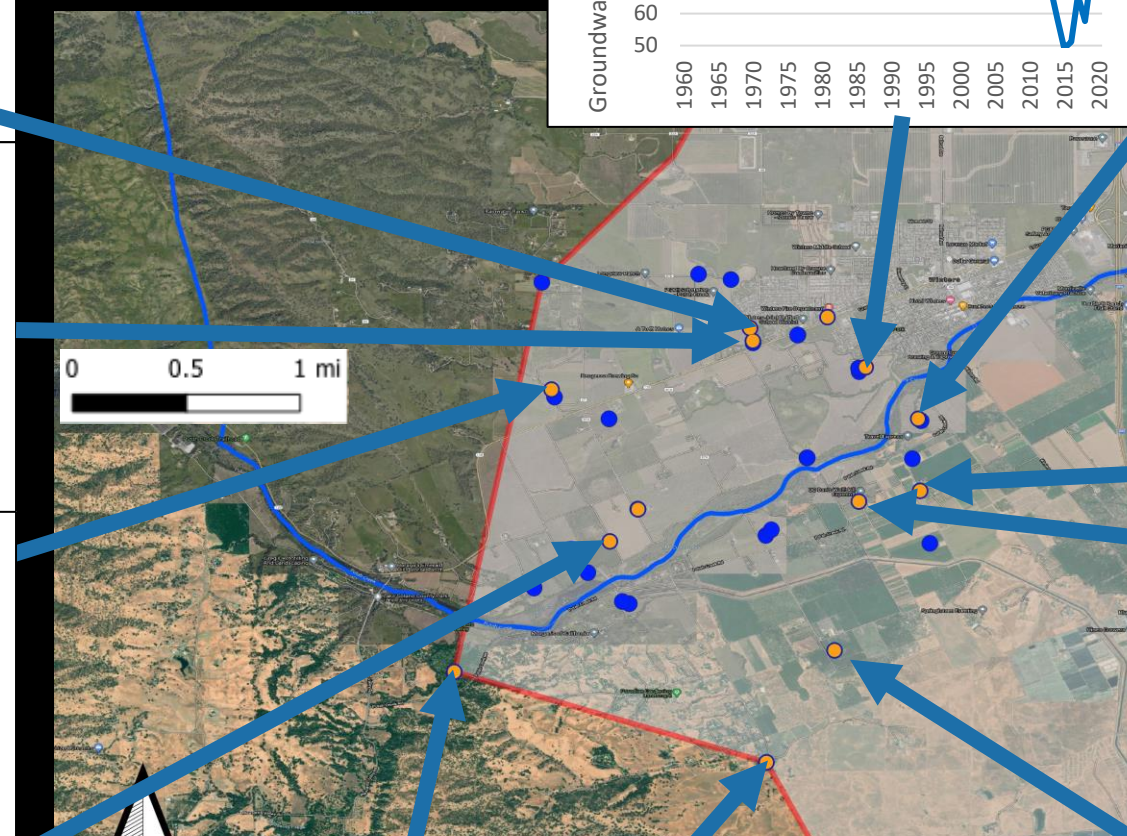
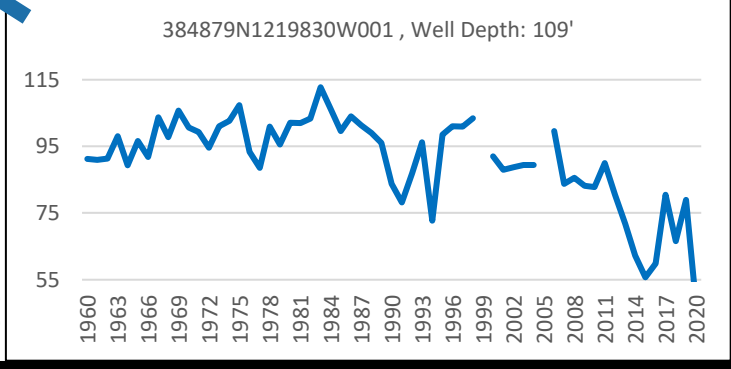
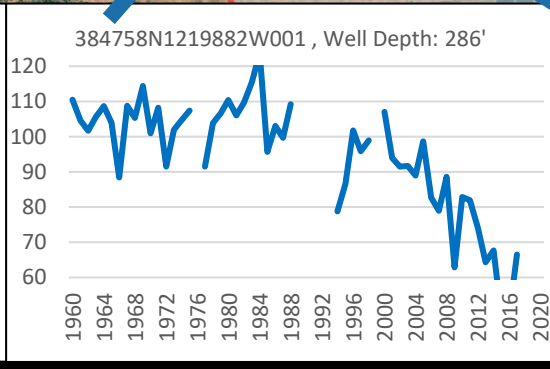
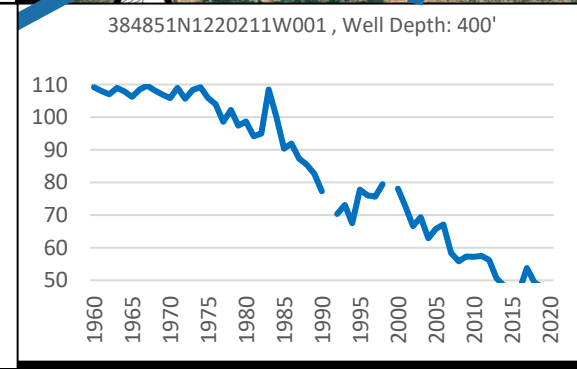
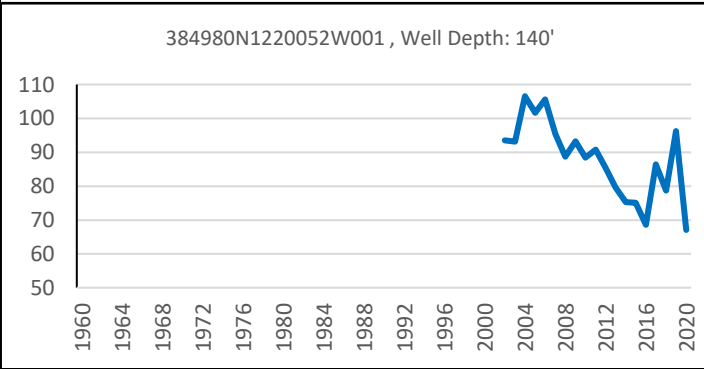
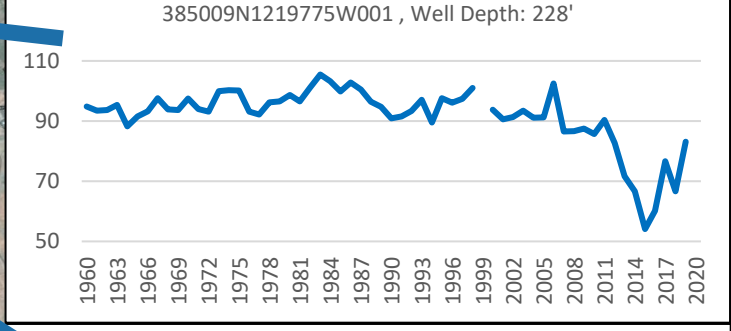
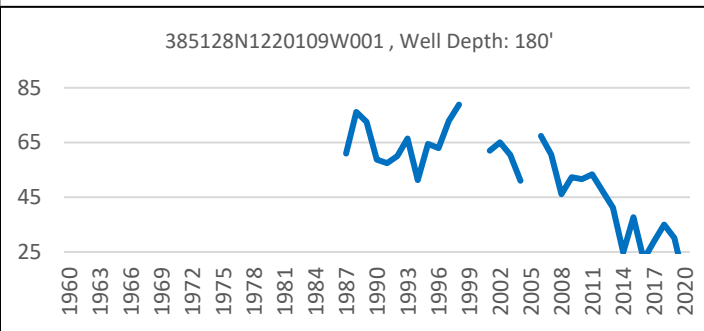
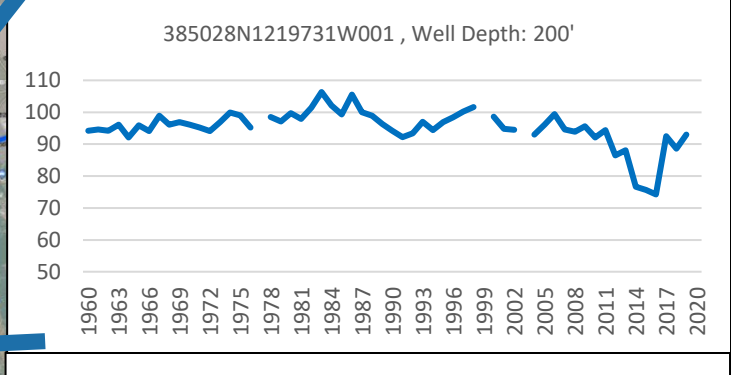
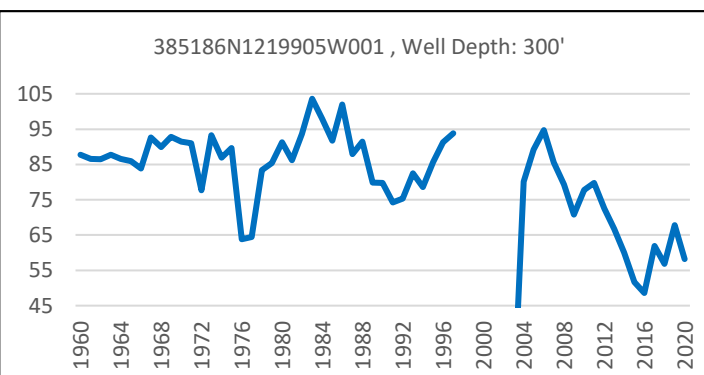
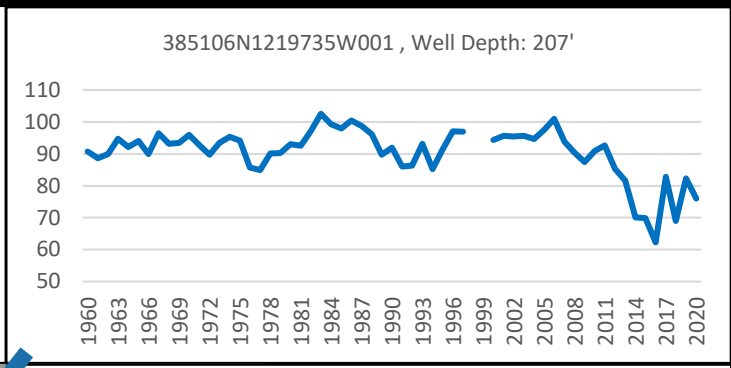
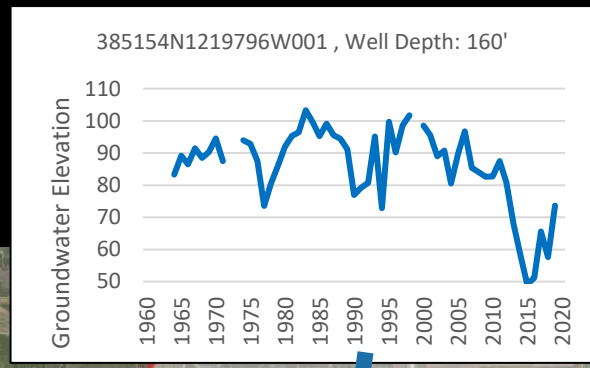
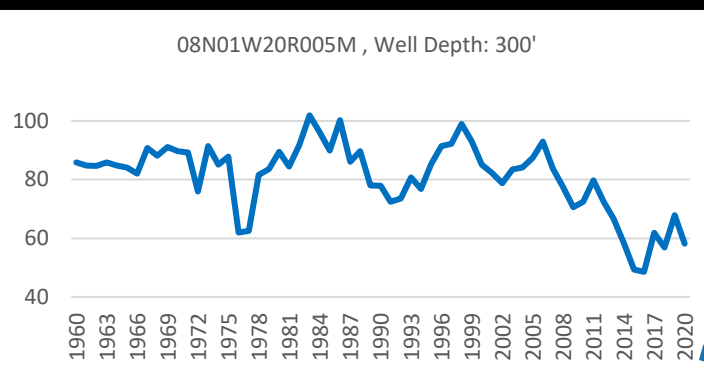
—

Hungry Hollow

Winters Area



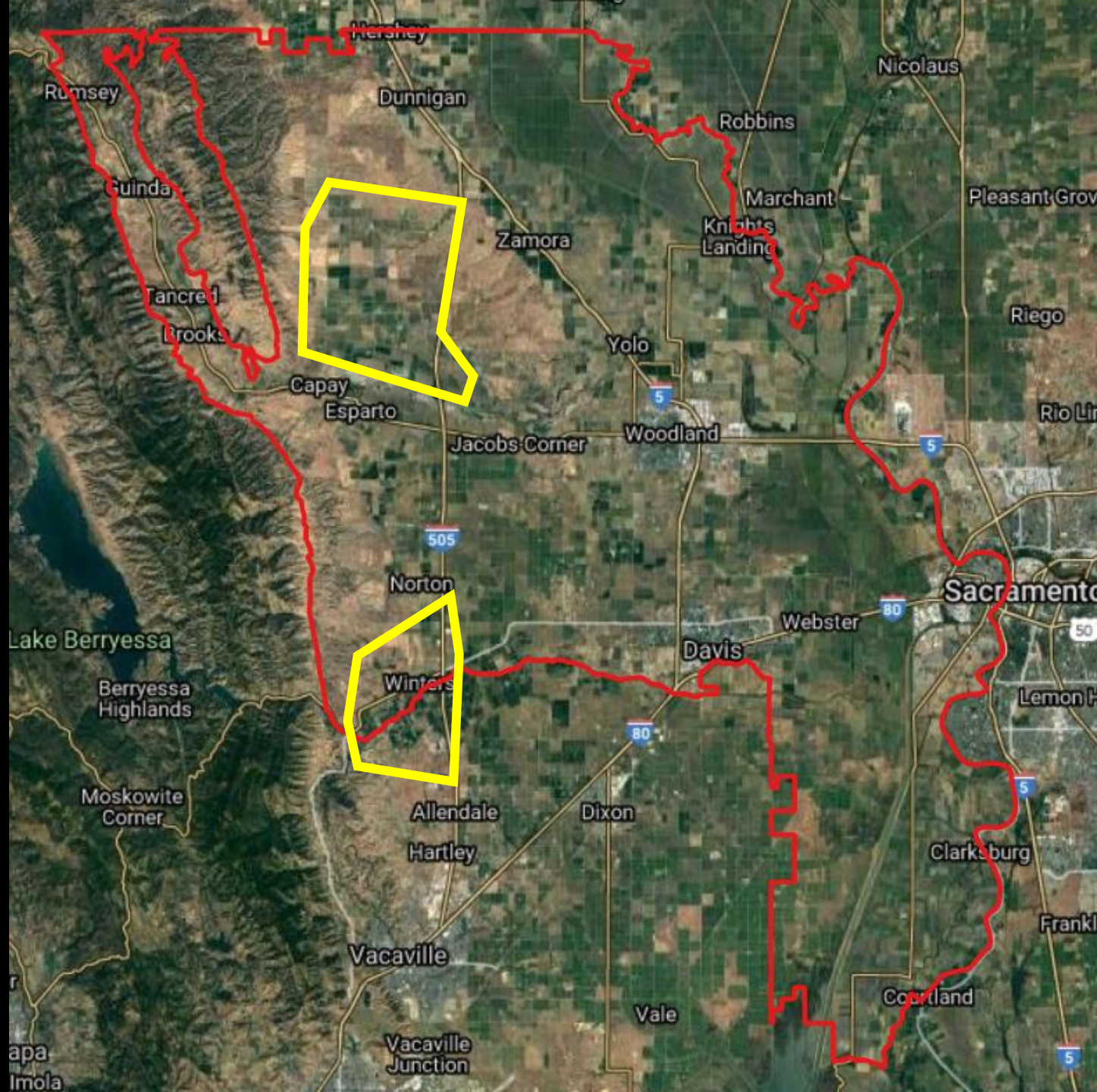




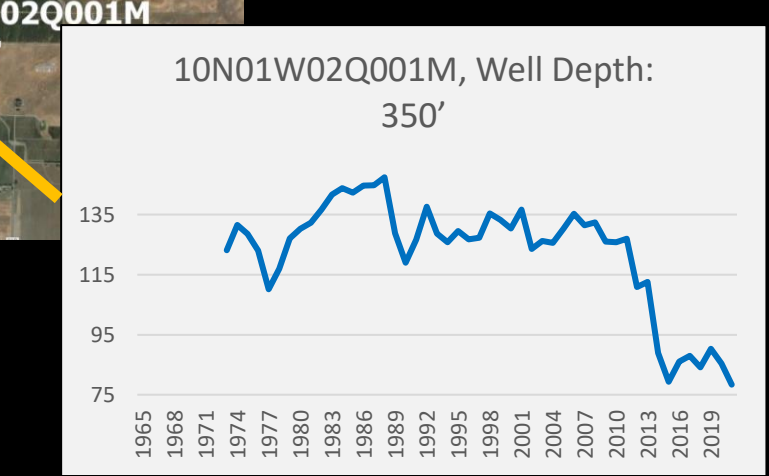
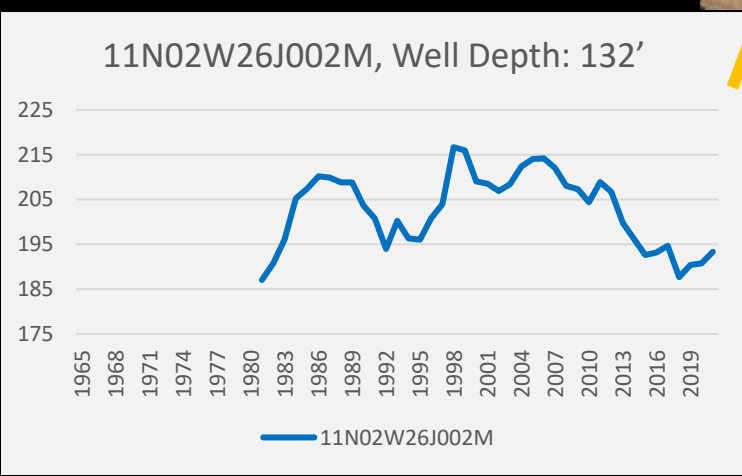
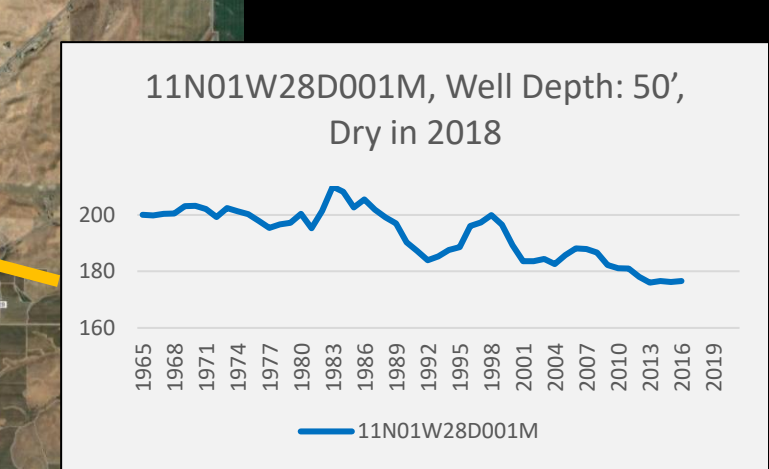
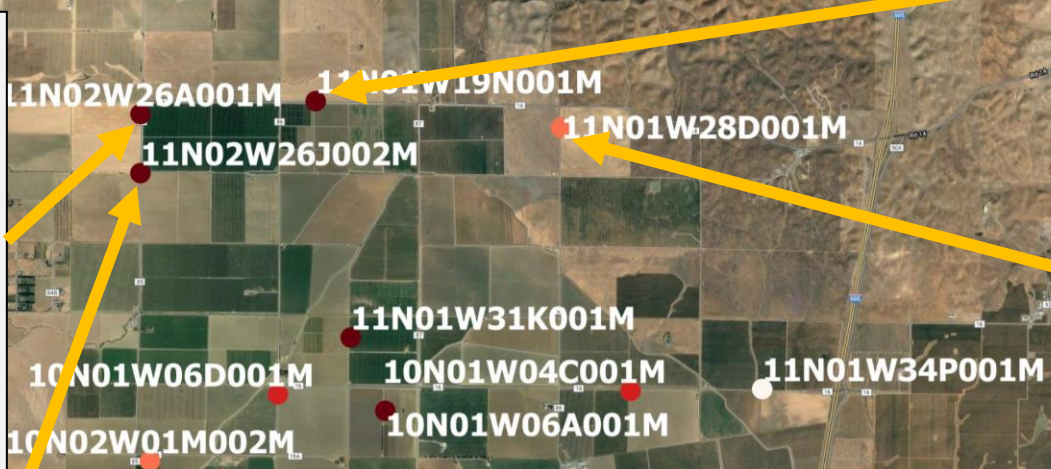
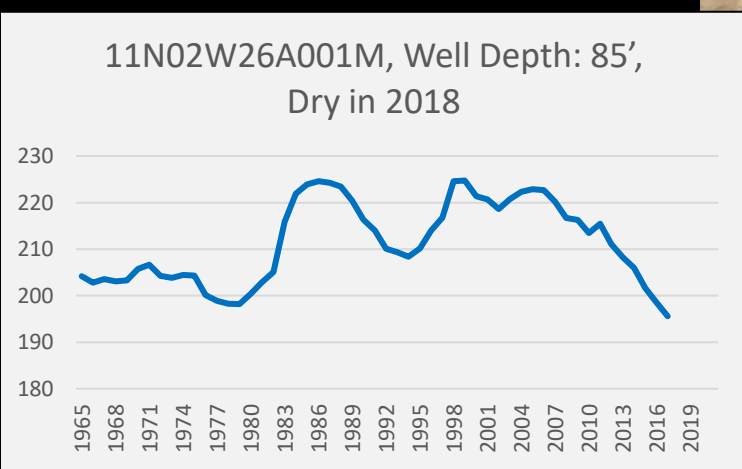
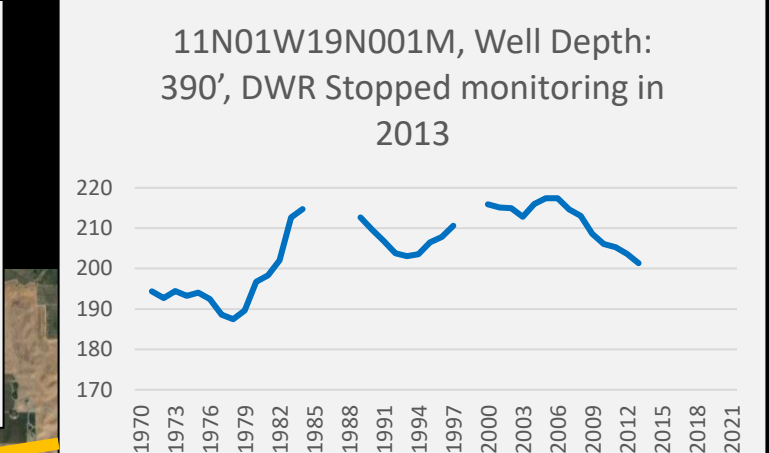
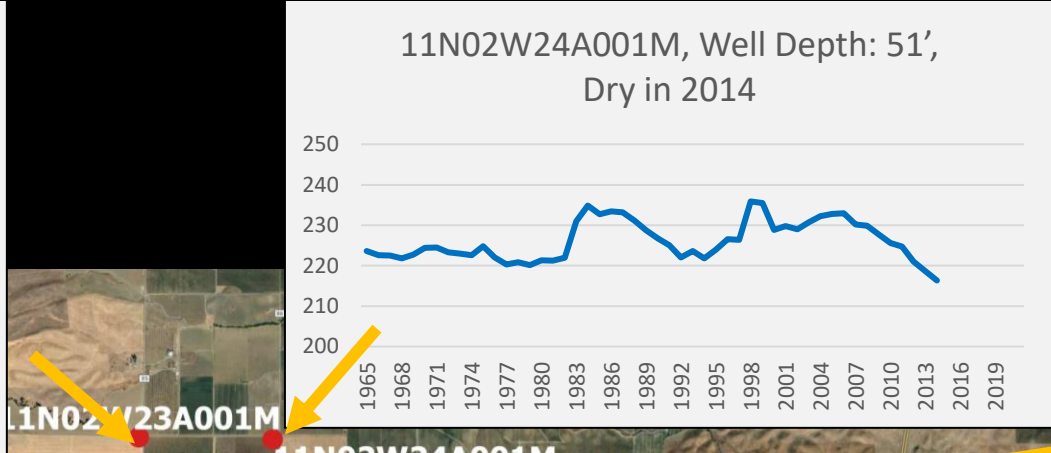
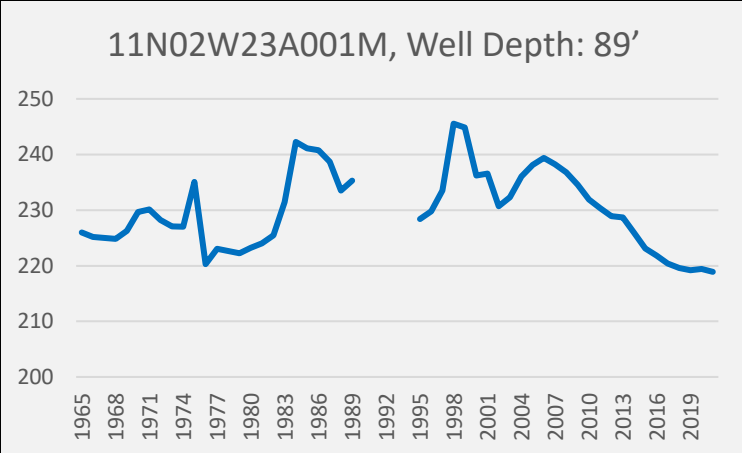


Hungry Hollow

Winters Area







# GSP Development

- Draft Chapters of the GSP
- Report of Data Sharing Efforts
- Public Workshops
- Future Working Group Discussions