GSP Implementation (Items 5a – 5f)

Corning Subbasin Advisory Board Meeting

CORNING SUB-BASIN GSA

TEHAMA COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

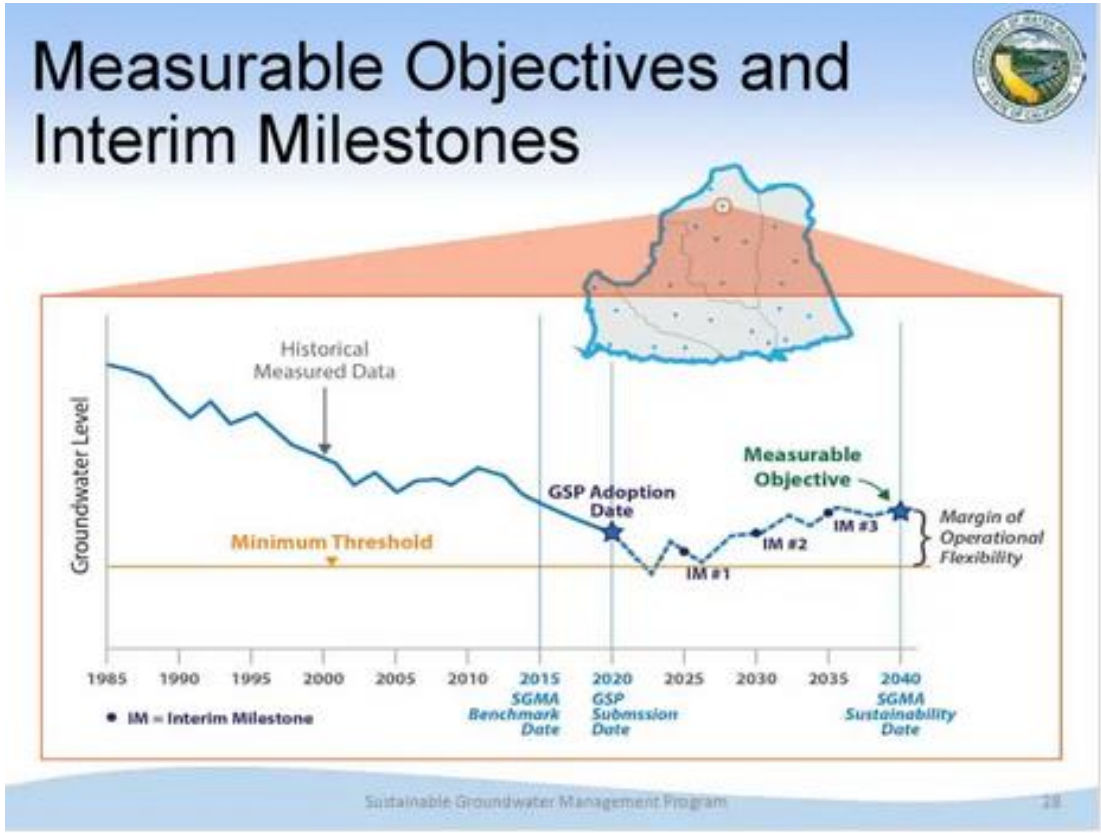
June 5, 2024

Luhdorff & Scalmanini
Consulting Engineers

Agenda

GSP Implementation

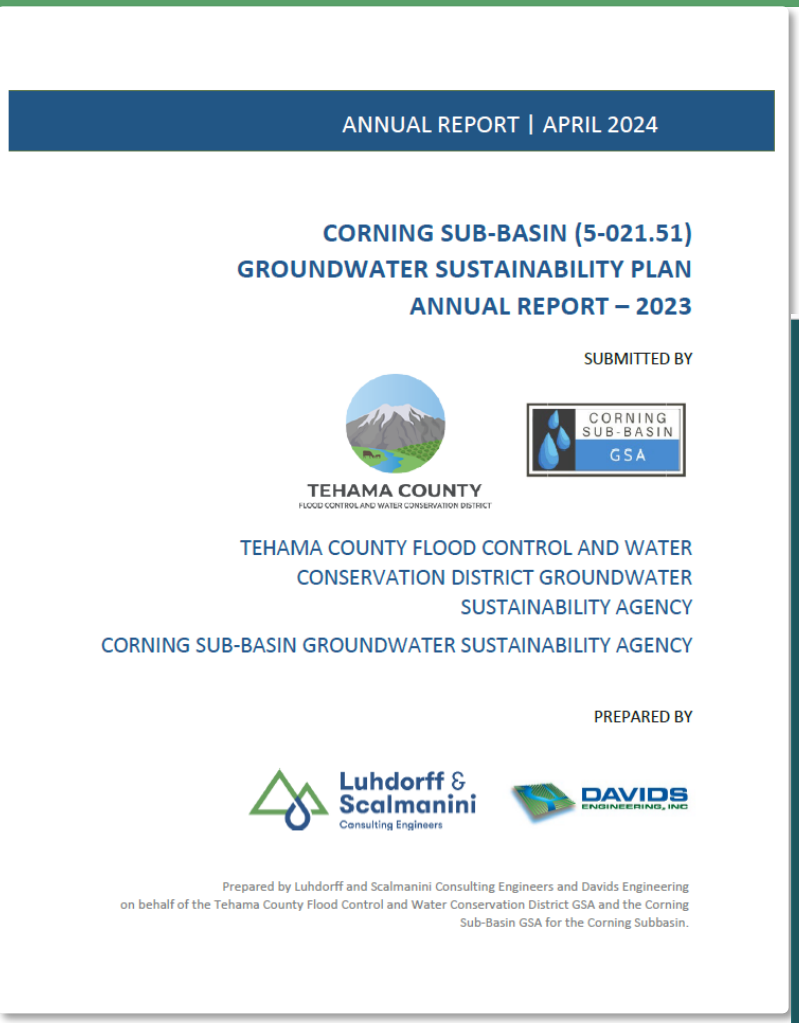
- Revised Corning Subbasin GSP (Item 5a)
- Water Year 2023 Annual Report (Item 5b)
- Groundwater Recharge (Item 5c)
- Update on Sustainable Groundwater Management (SGM) Implementation Grant (Item 5d)
- Well Mitigation Program Discussion (Item 5e)
- Demand Management Program Discussion (Item 5f)



Revised Corning Subbasin GSP

LSCE

WY 2023 Annual Report


ANNUAL REPORT | APRIL 2024

CORNING SUB-BASIN (5-021.51)
GROUNDWATER SUSTAINABILITY PLAN
ANNUAL REPORT – 2023

SUBMITTED BY

TEHAMA COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

CORNING SUB-BASIN GSA

TEHAMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT GROUNDWATER SUSTAINABILITY AGENCY

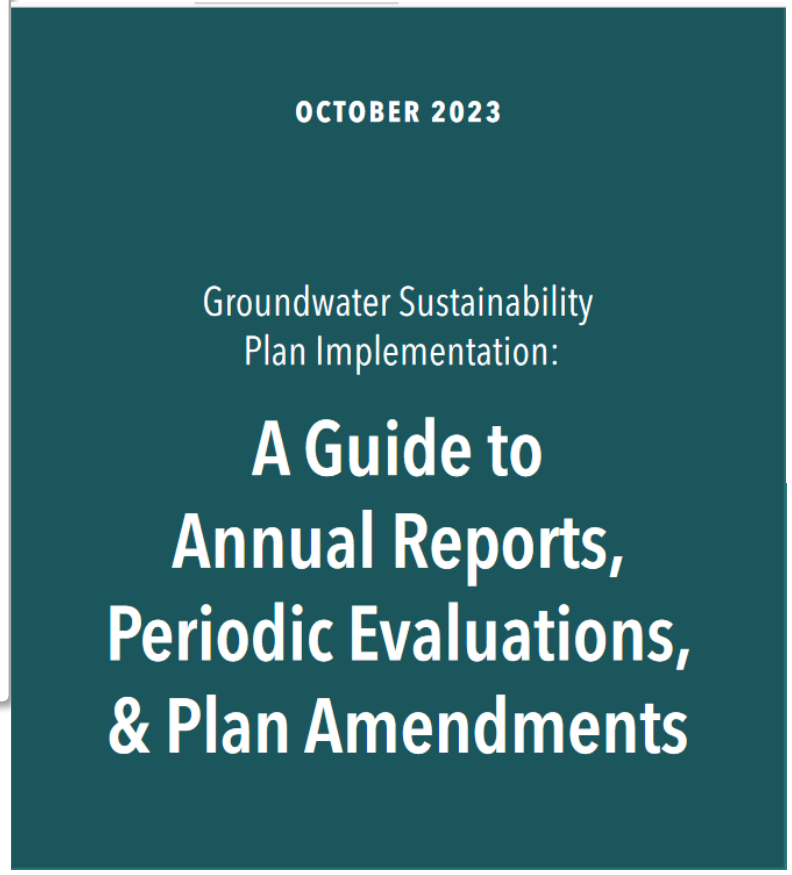
CORNING SUB-BASIN GROUNDWATER SUSTAINABILITY AGENCY

PREPARED BY

Luhdorff & Scalmanini Consulting Engineers

DAVIDS ENGINEERING, INC

Prepared by Luhdorff and Scalmanini Consulting Engineers and Davids Engineering on behalf of the Tehama County Flood Control and Water Conservation District GSA and the Corning Sub-Basin GSA for the Corning Subbasin.


OCTOBER 2023

Groundwater Sustainability Plan Implementation:

A Guide to Annual Reports, Periodic Evaluations, & Plan Amendments


CALIFORNIA DEPARTMENT OF WATER RESOURCES

SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

715 P Street, 8th Floor | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

May 10, 2024

Lisa Hunter
Corning Subbasin
225 North Tehama
Street Willows, CA 95988
lhunter@countyofglenn.net

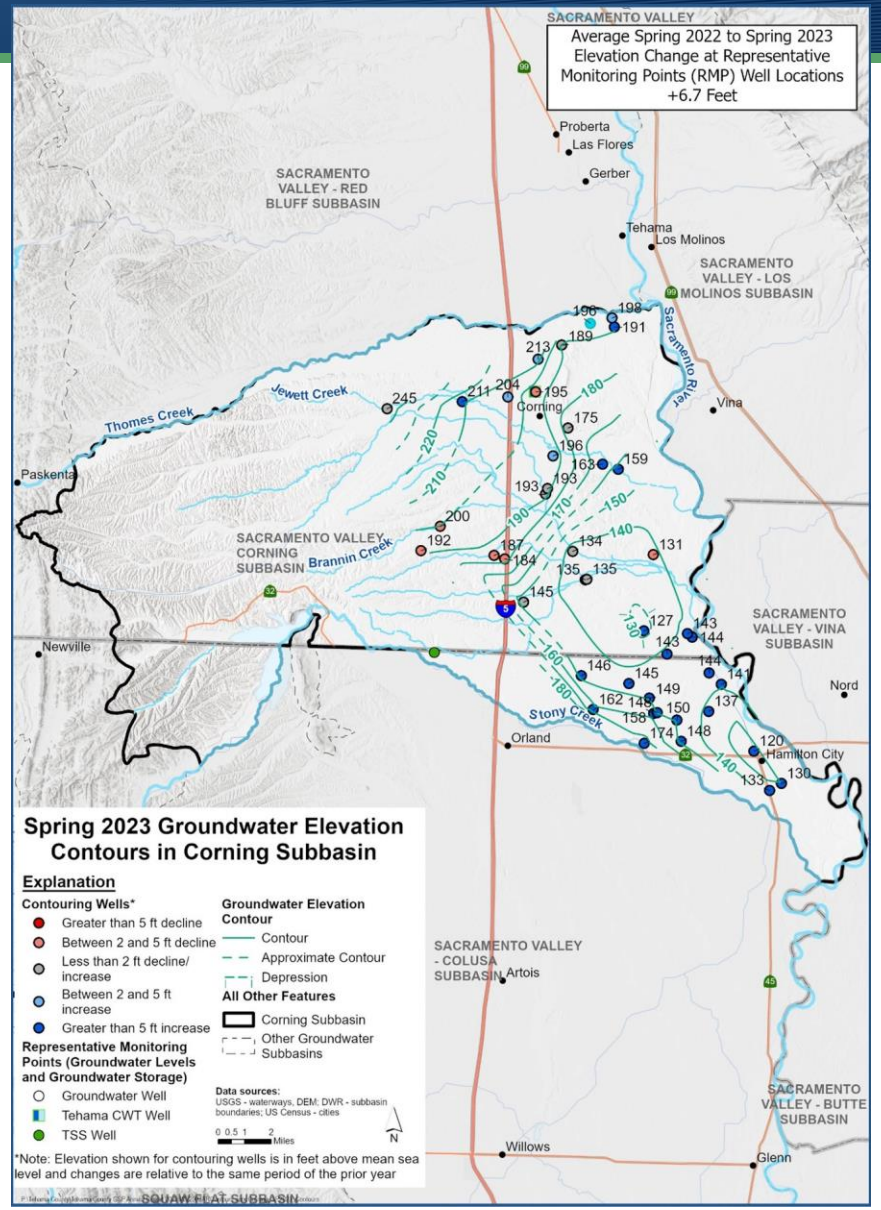
RE: Review of Annual Report for the Corning Subbasin, Water Year 2023

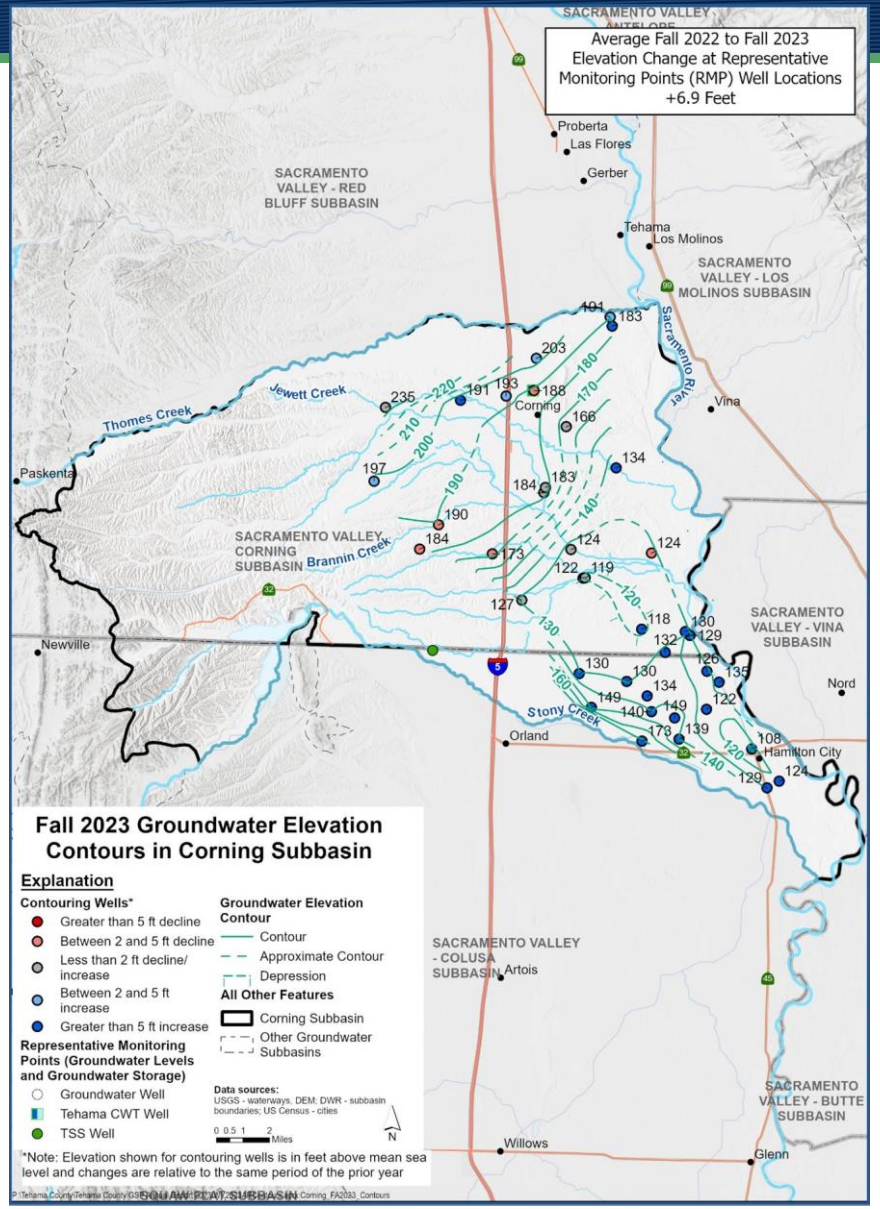
Dear Lisa Hunter,

As the basin point of contact for the groundwater sustainability plan (GSP) in the Corning Subbasin (Subbasin), this letter is to inform you that the Department of Water Resources (Department) has reviewed the annual report submitted for the Subbasin for Water Year 2023. The Sustainable Groundwater Management Act (SGMA) requires, on April 1 following the adoption of a GSP and annually thereafter, an annual report to be submitted to the Department. The required contents of annual reports are included in the GSP Regulations (23 CCR § 356.2) as is the Department's role in reviewing annual reports (23 CCR § 355.8).

LSCE

Groundwater Conditions – Groundwater Elevations

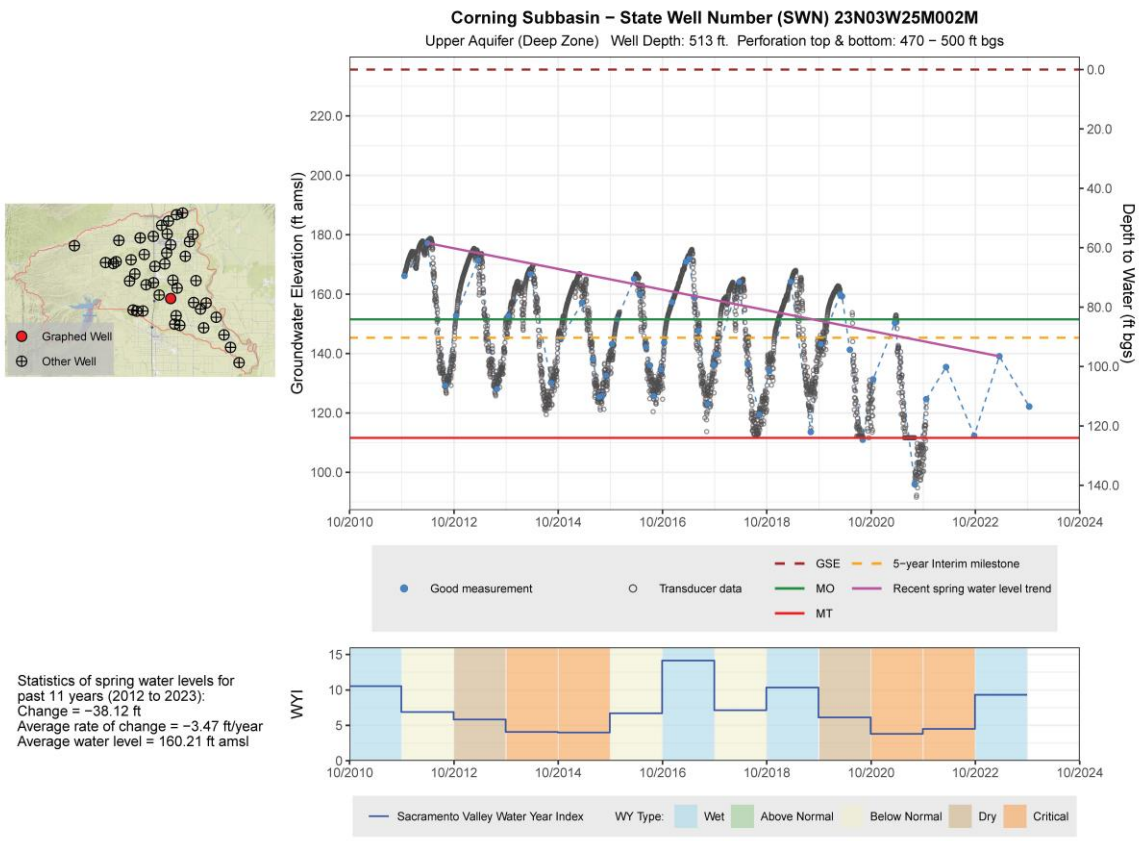




LSCE

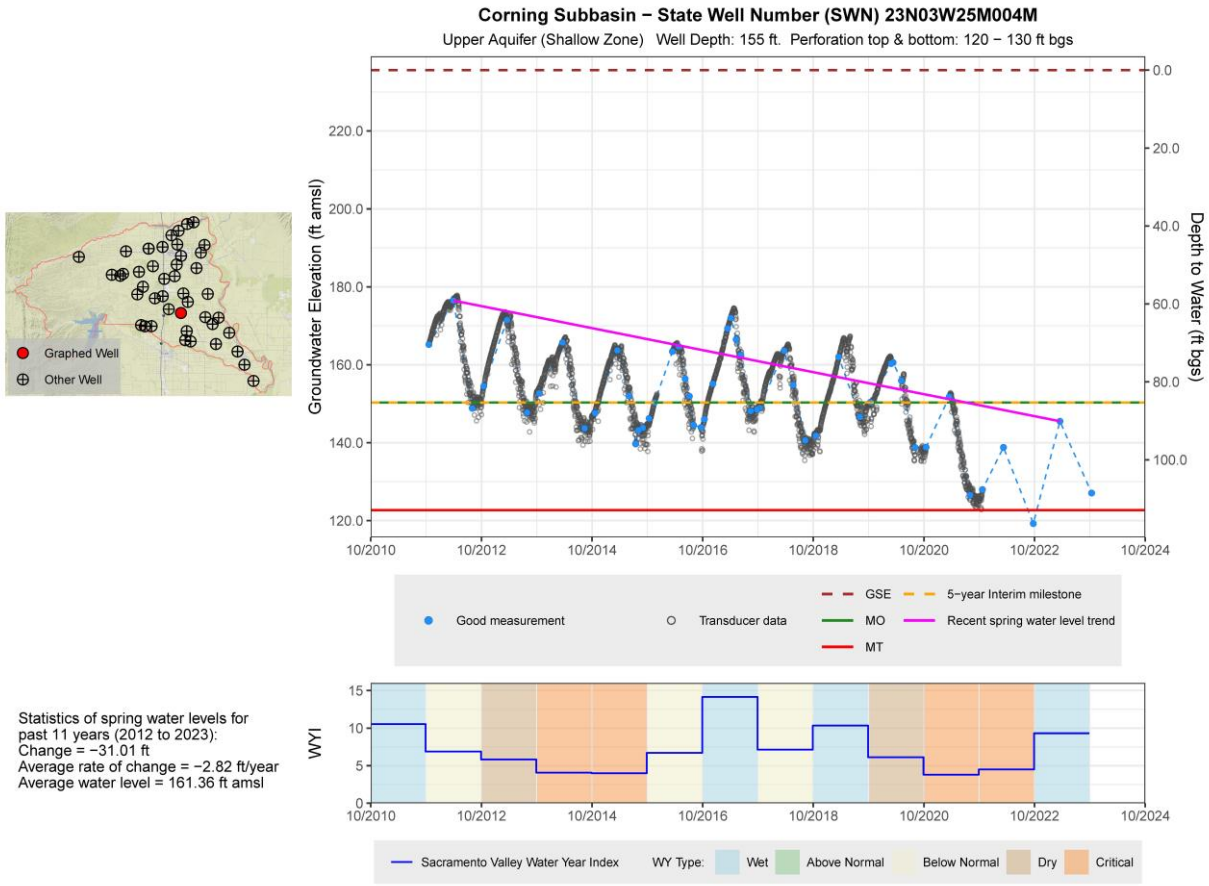
Groundwater Conditions – Groundwater Elevations

Ingram Rd at Tehama Colusa Canal (Deep)



Statistics of spring water levels for past 11 years (2012 to 2023):
Change = −38.12 ft
Average rate of change = −3.47 ft/year
Average water level = 160.21 ft amsl

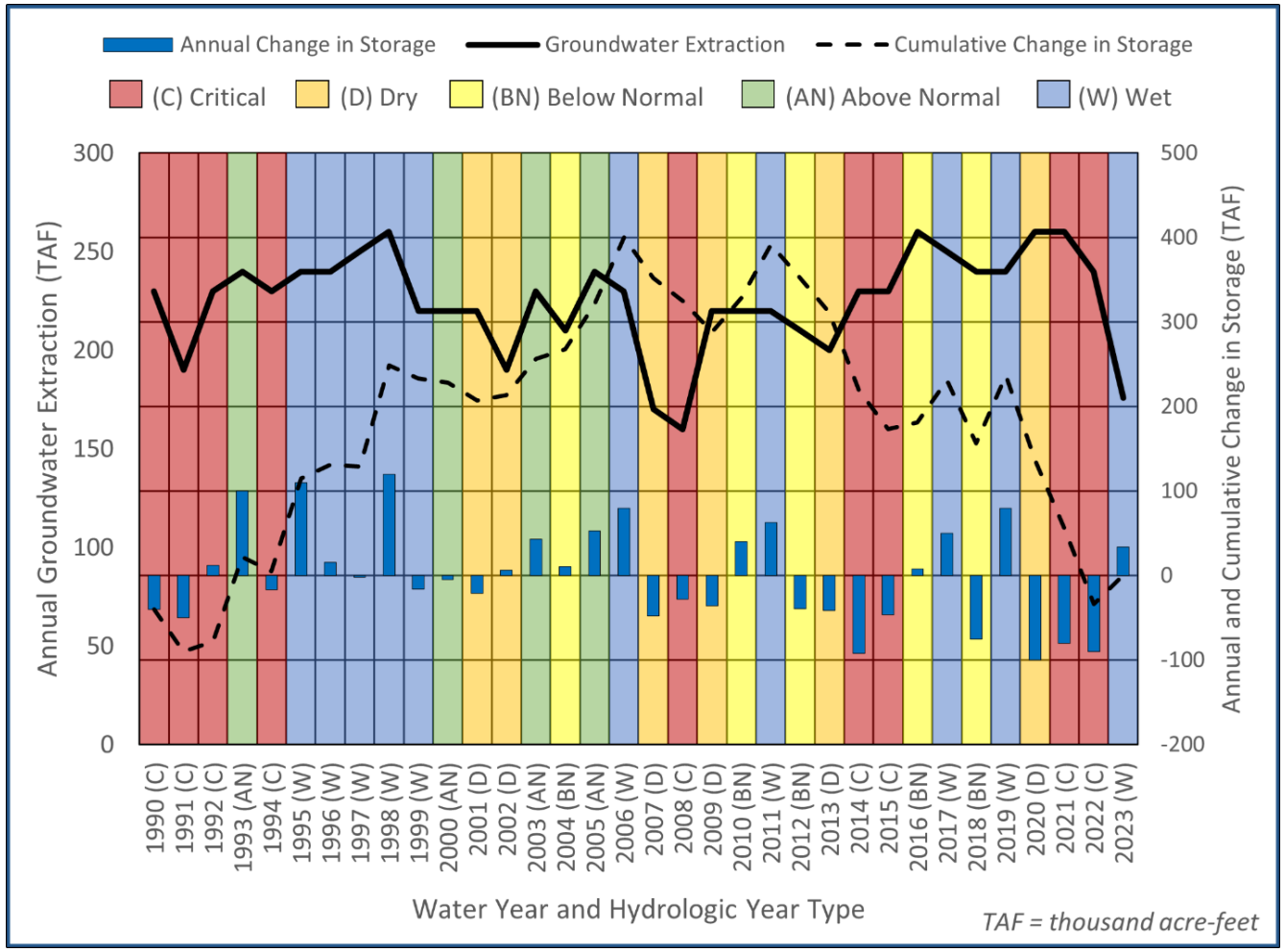
Ingram Rd at Tehama Colusa Canal (Shallow)

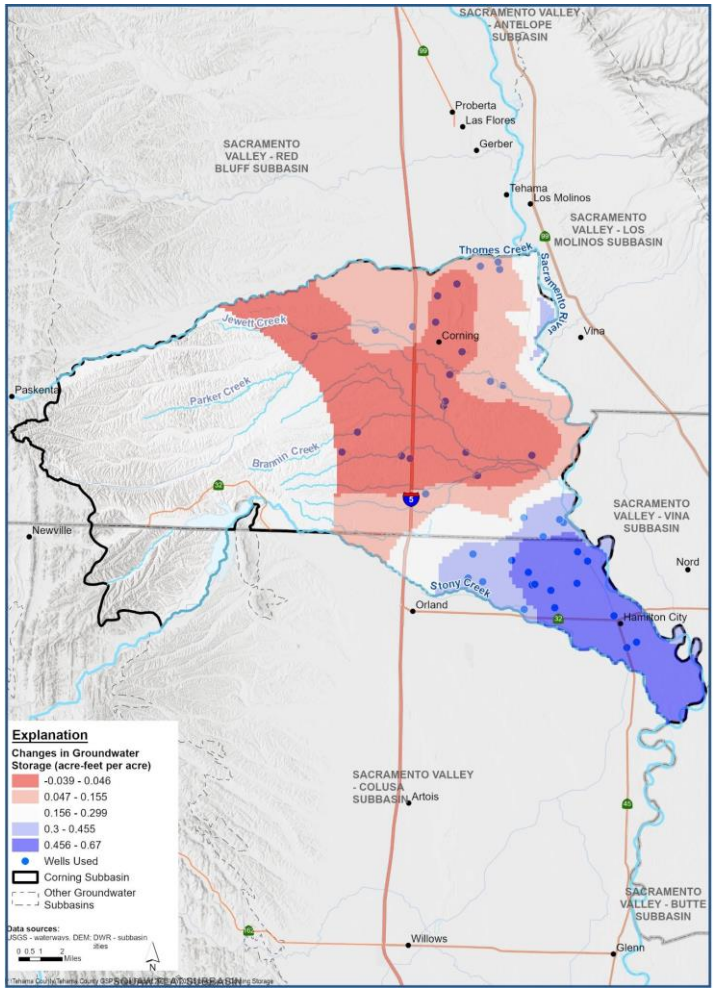


Statistics of spring water levels for past 11 years (2012 to 2023):
Change = −31.01 ft
Average rate of change = −2.82 ft/year
Average water level = 161.36 ft amsl

LSCE

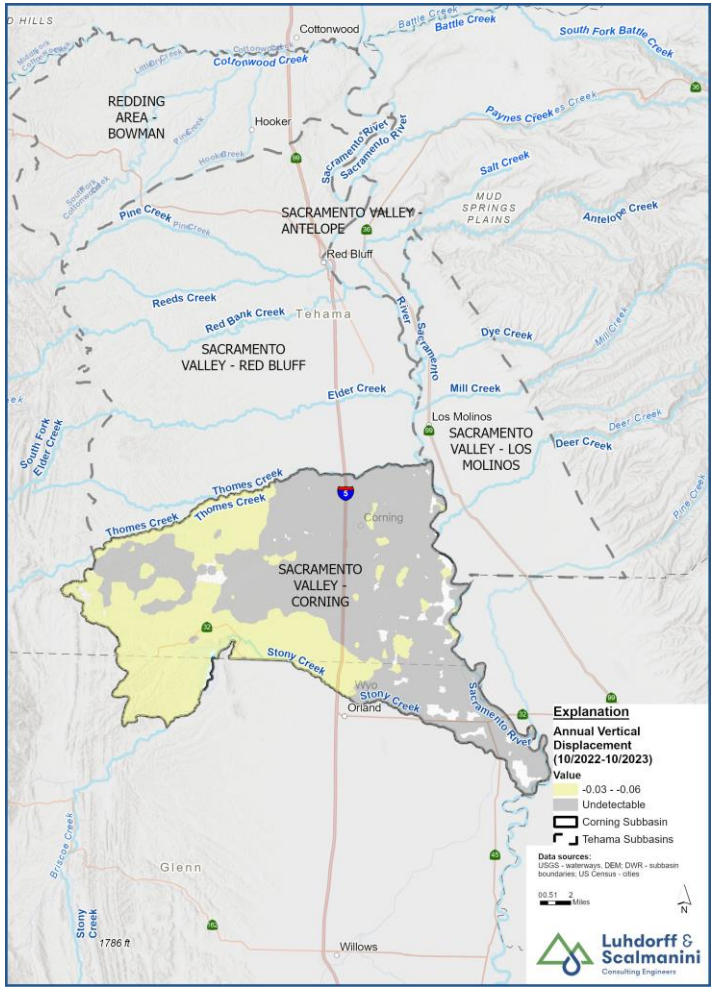
Groundwater Storage





LSCE

Subsidence



- Land Subsidence
  - Utilizing Interferometric Synthetic Aperture Radar (InSAR)
- Minimum Threshold (MT) = 0.5 feet per five years (0.1 foot per year)
- Measurable Objective = Zero Inelastic Subsidence

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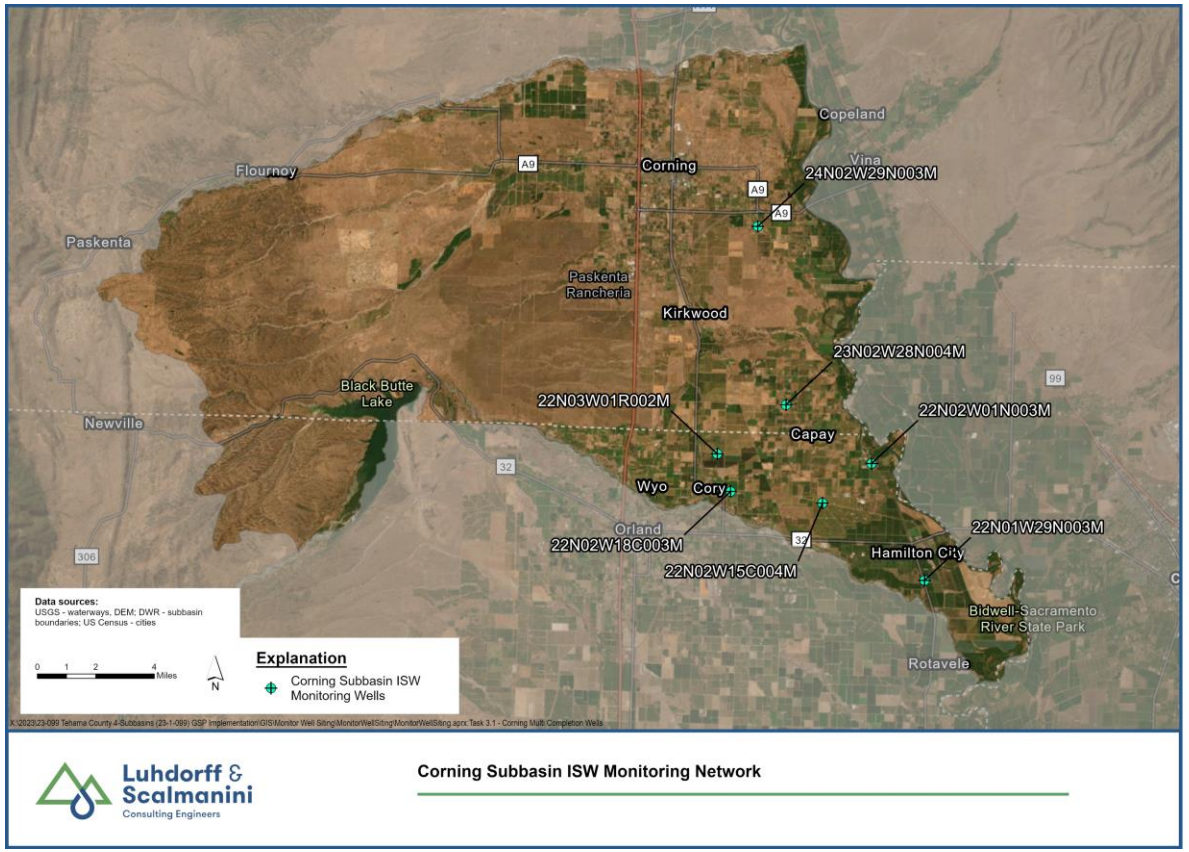
Interconnected Surface Water

Table 5-3 Measurable Objectives, Minimum Thresholds, Undesirable Results for Depletion of Interconnected Surface Water						
State Well Number /Representative Monitoring Point (RMP) ID	Groundwater Elevation (feet above mean sea level)				Spring 2023 vs. MO	Fall 2023 vs. MO
	2023 Measurements		MO	MT		
	Spring (seasonal high)	Fall (seasonal low)				
22N01W29N003M	126.02	123	123.4	91.7	2.62	-0.41
22N02W01N003M	133.7	128.16	136.5	99.3	-2.8	-8.34
22N02W15C004M	131.98	129.45	144.1	84	-12.12	-14.65
22N02W18C003M	151.35	144.11	148.4	131.6	2.95	-4.29
22N03W01R002M	146.41	134.23	143.9	123.6	2.51	-9.67
23N02W28N004M	139.95	--	142.7	104.3	-2.75	--
24N02W29N003M	158.84	141.27	158.1	123.2	0.74	-16.83

MO = Measurable Objective, MT = Minimum Threshold, -- = Indicates Missing or Questionable Measurement, NA = Indicates non-determined MO, MT due to insufficient history



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Groundwater Recharge

- 19 site visits
- 180-Day permits – summer 24
- Evaluating TNC projects
- Planning a Story map website

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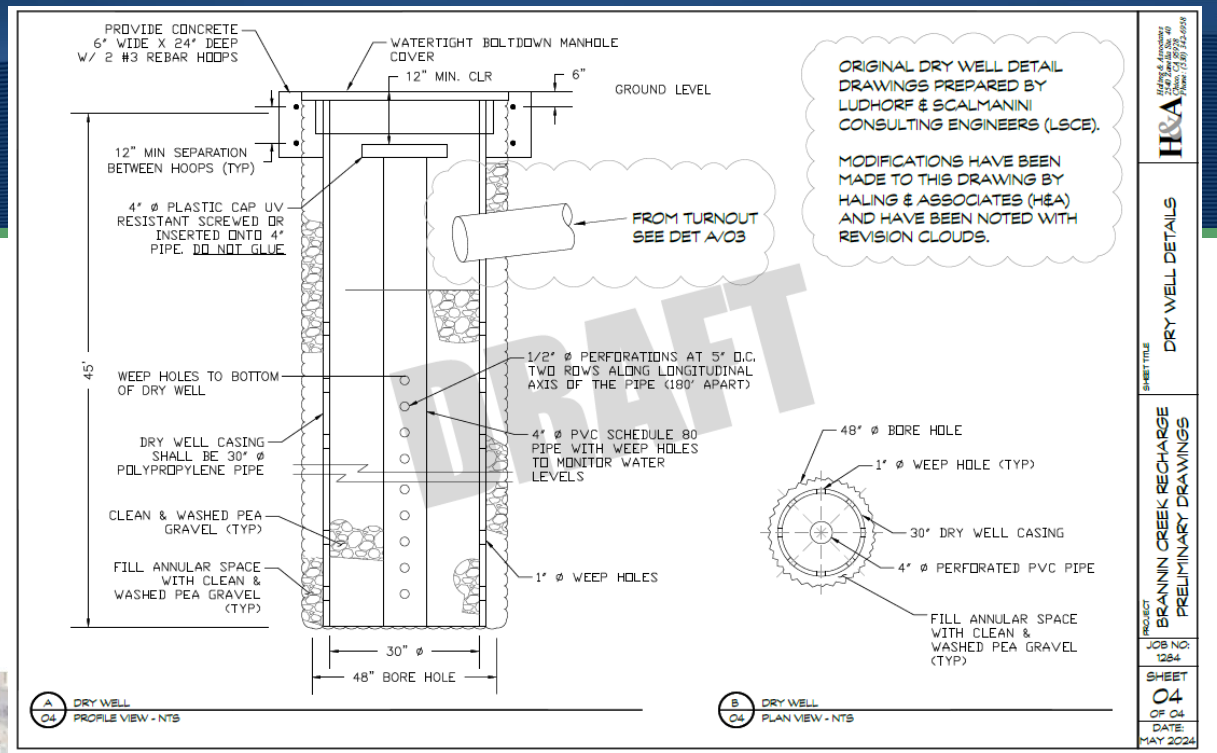
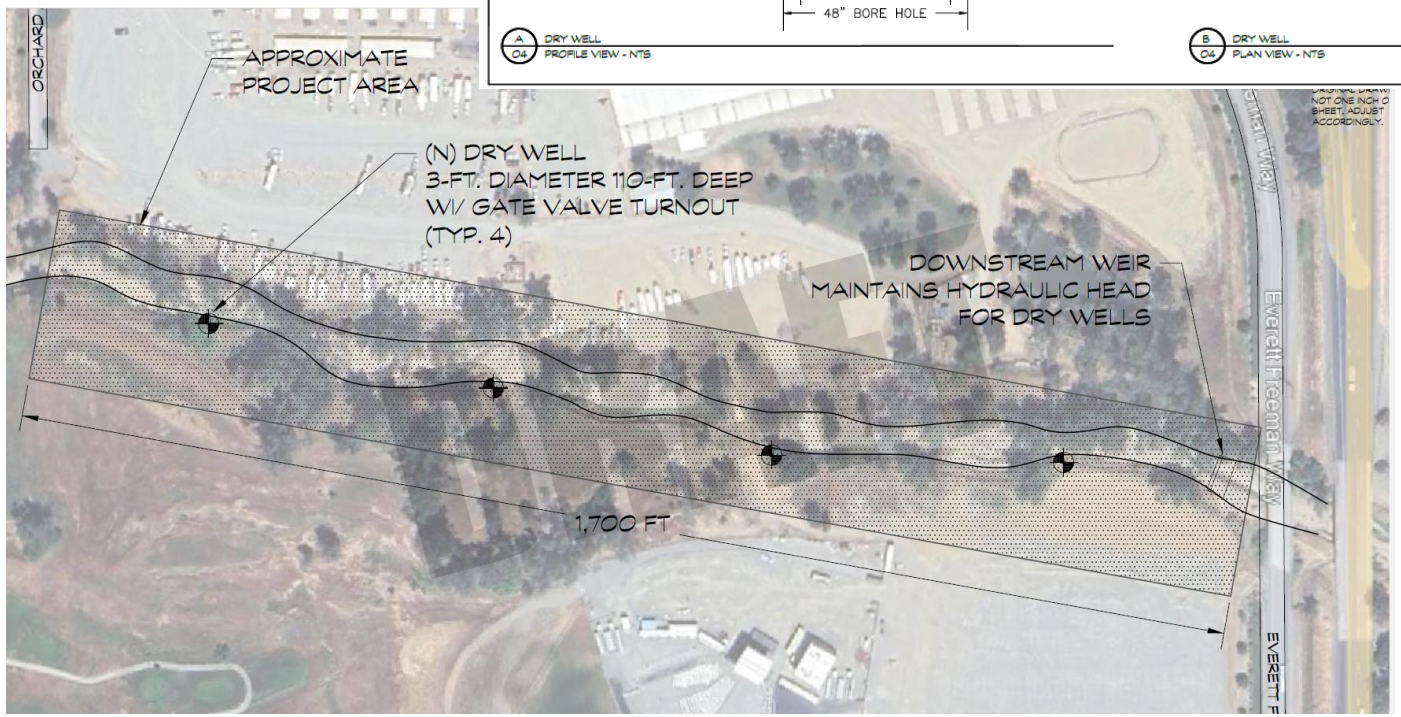
Rolling Hills Casino

- Corning Subbasin
- Brannin Creek Dry Wells
- Potential Water sources:
  - Corning Canal





USBR pond

- Corning Subbasin
- Filled May 1-2
- Used Drone
- Potential Water sources:
  - Corning Canal

Simpson Road

- May 28-30 the pilot study for the multi-benefit recharge project
- Using drone on May 30
- Constructed a temporary berm around ~5 acres of filled with water
- Potential Water sources:

  Corning WD

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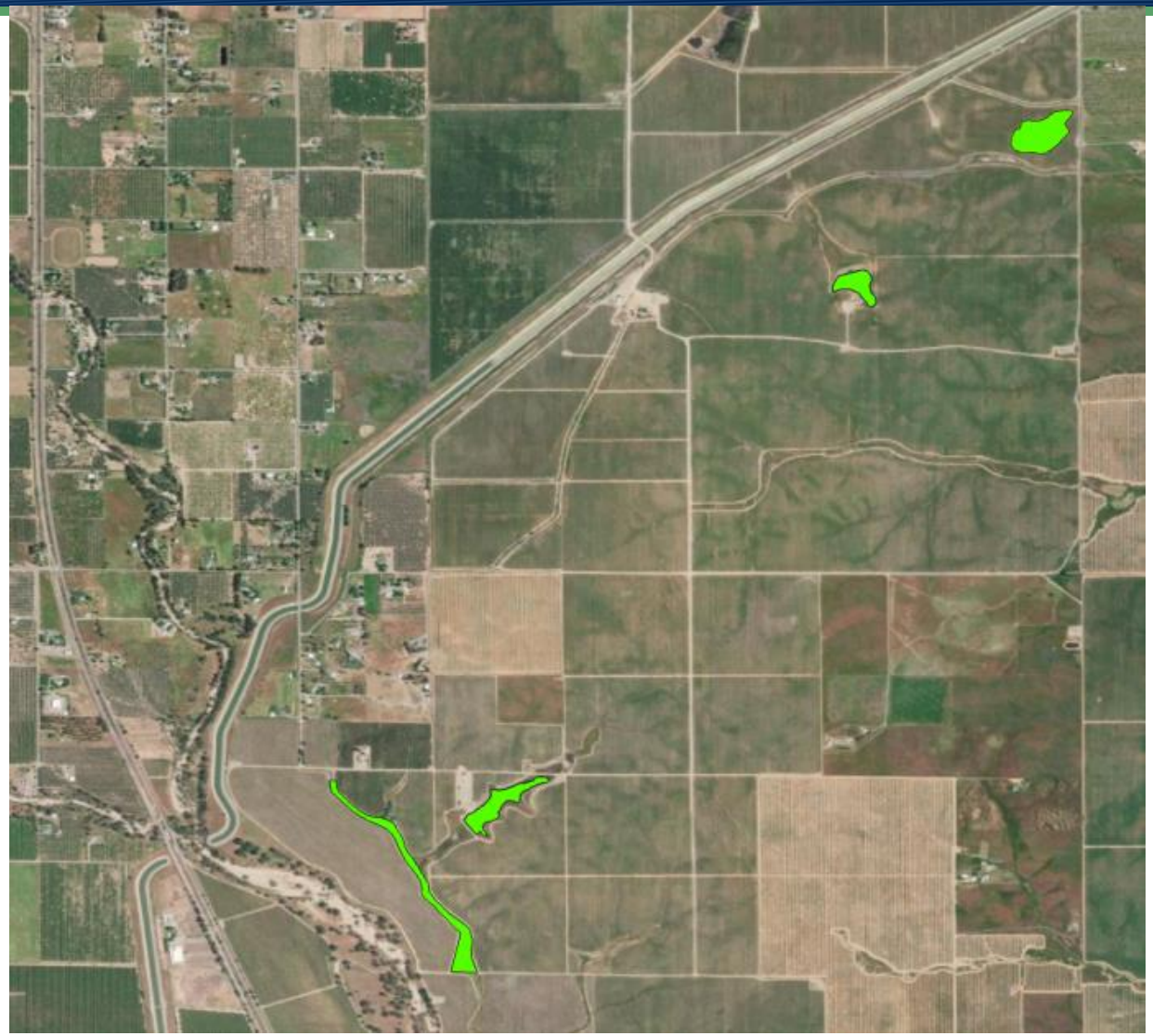
California Olive Ranch

- Corning Subbasin
- 2 operating modes
  - 1) Irrigation Season
  - 2) Storm Season
- Potential Water sources:
  - Corning Canal



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Additional Sites

Site	Subbasin	Type	Water Right
Rice Creek	Corning	Unlined Creek	Yes
Burch Creek	Corning	Unlined Creek	TBD
North Thomes Creek	Red Bluff/Corning	Unlined Creek	TBD
Rancho Tehama	Red Bluff	Unlined Creek	TBD
Duck Ponds	Corning	Pond	Yes
Middle Fork Hall Creek	Corning	Unlined Creek	Yes
Simpson Rd	Corning	Farmland	Yes
Northwest Corning	Corning	Farmland	Yes
Thomes Creek	Corning	Farmland	TBD
Thomes Creek	Corning	Unlined Creek	TBD

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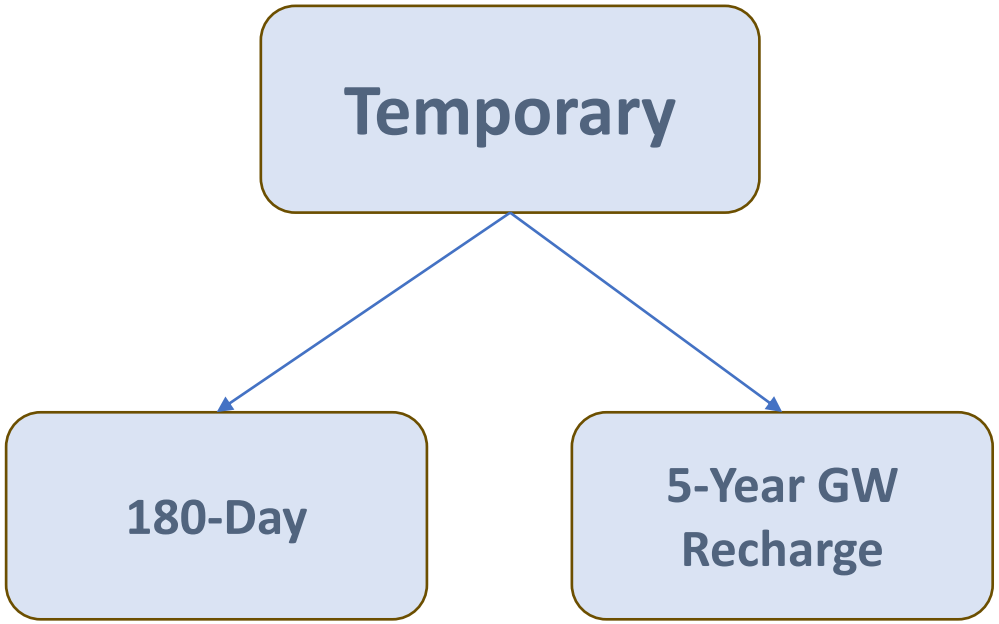
Permitting and Water Rights



Temporary Permit Water Availability

Thomes Creek:

- approximately 4200 ac-ft available on average
- available over approximately 11 days
- 300 cfs total diversion

Elder Creek:

- Approximately 3700 ac-ft available on average
- Available over approximately 11 days
- 300 cfs total diversion

Screening potential sites for temporary permits

Seeking Potential Volunteers

- Interested in exploring recharge opportunities

Task 5. Projects and Management Actions – Corning Regional Conjunctive Use

In-lieu recharge opportunities:

- Site identification
- Assessment of infrastructure needs
- 2 site visits completed

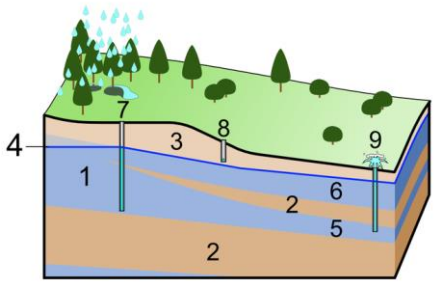
Site	Subbasin	Water Right	In Lieu Recharge Amount (ac-ft)
Alston	Corning	Yes	442
Hart Farms	Corning	Yes	60
Curiel	Corning	Yes	650
Crain	Corning	Yes	208
MAG Farms	Corning	Yes	422

Tehama GSA GSP Implementation Project Grant Administration – Getting To Recharge

- Funding Agreement Kickoff Meeting With DWR (4/30/2024)
- All four DWR grant agreements approved in May
- Quarterly Progress & Invoicing Report No. 1 submitted to DWR (5/15/24)
- Requesting grant reimbursements by FY end (June 30)
- DWR Environmental Review – will ensure compliance with CEQA for project-related activities and actions

Opportunities

Challenges



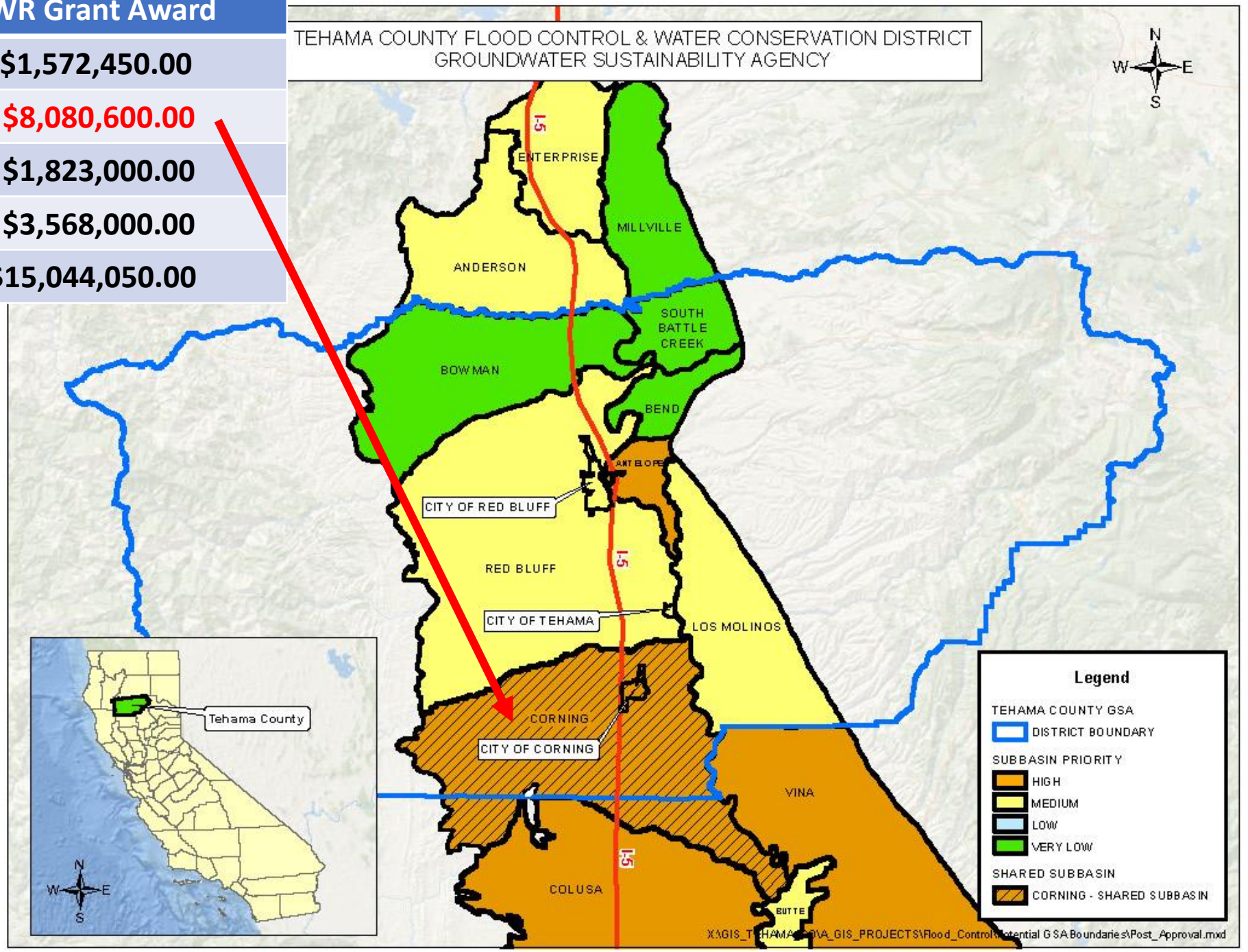
Groundwater Recharge

LSCE

Subbasins	DWR Grant Award
Antelope	$1,572,450.00
Corning	$8,080,600.00
Los Molinos	$1,823,000.00
Red Bluff	$3,568,000.00
TOTAL	$15,044,050.00

DWR Funding Agreements executed in May 2024!

All work must be completed by 3.31.2026



Components/Budget Category	Total Budgeted
COMPONENT 1: Grant Administration	**$ 734,600.00**
(a): Grant Agreement Administration	$ 734,600.00
(b): Planning / Design / Environmental	
(c): Construction / Implementation	
(d): Monitoring / Assessment	$ -
(e): Engagement / Outreach	$ -
COMPONENT 2: GSP Implementation, Outreach, and Compliance Activities	**$ 1,370,000.00**
(a): Component 2 Administration	$ -
(b): Planning / Design / Environmental	$ -
(c): Construction / Implementation	$ -
(d): Monitoring / Assessment	$ 1,190,000.00
(e): Engagement / Outreach	$ 180,000.00
COMPONENT 3: Monitoring Network Enhancements	**$ 3,019,000.00**
(a): Component 3 Administration	$ -
(b): Planning / Design / Environmental	$ 60,000.00
(c): Construction / Implementation	$ 1,615,000.00
(d): Monitoring / Assessment	$ 1,329,000.00
(e): Engagement / Outreach	$ 15,000.00
COMPONENT 4: Project and Managemnet Action Implementation - Regional Conjunctive Use Project	**$ 1,215,000.00**
(a): Component 4 Administration	$ -
(b): Planning / Design / Environmental	$ 225,000.00
(c): Construction / Implementation	$ 915,000.00
(d): Monitoring / Assessment	$ 45,000.00
(e): Engagement / Outreach	$ 30,000.00
COMPONENT 5: Project and Management Action Implementation - Recharge Focused	**$ 1,742,000.00**
(a): Component 5 Administration	$ -
(b): Planning / Design / Environmental	$ 805,000.00
(c): Construction / Implementation	$ 815,000.00
(d): Monitoring / Assessment	$ 85,000.00
(e): Engagement / Outreach	$ 37,000.00
Total:	**$ 8,080,600.00**

Corning Subbasin - Expenditures Through 3.31.2024

Grant Cost Update (Round to Nearest Dollar)
Estimated Total Cost Incurred This Quarter: $13,828
Estimated Total Cost To Date: $13,828

Grant Cost Update (Round to Nearest Dollar)
Estimated Total Cost Incurred This Quarter: $206,323
Estimated Total Cost To Date: $206,323

Grant Cost Update (Round to Nearest Dollar)
Estimated Total Cost Incurred This Period: $39,321
Estimated Total Cost To Date: $39,321

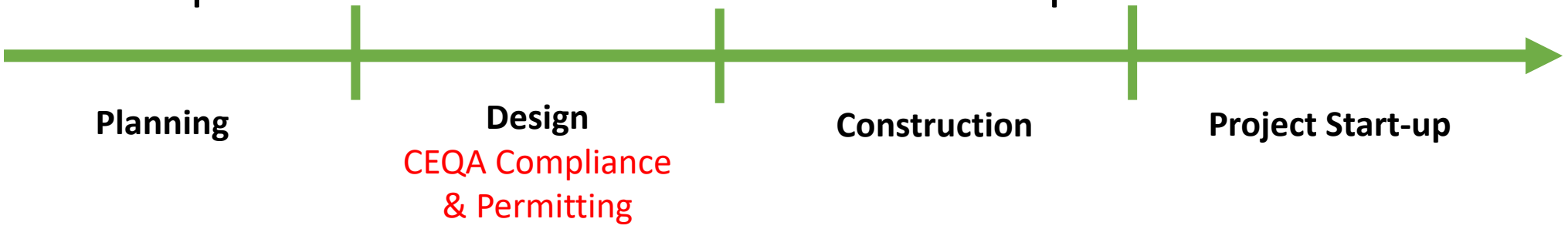
Grant Cost Update (Round to Nearest Dollar)
Estimated Total Cost Incurred This Quarter: $20,049
Estimated Total Cost To Date: $20,049

Grant Cost Update (Round to Nearest Dollar)
Estimated Total Cost Incurred This Quarter: $71,720
Estimated Total Cost To Date: $71,720

$351,241

Tehama GSA GSP Implementation Project Environmental Review – Getting To Recharge

- **Implementation Strategy**
- High priority on ‘simple’ projects – no infrastructure, water right issues
- Recharge water rights are lagging where the GSAs want to be
- Pilot test early – example Corning South Pond Project
- Low hanging fruit – NOE for Corning/Antelope Data Gaps work
- Coordinate and communicate – legal counsels and participants
- Receive updates on future environmental compliance actions



Tehama GSA GSP Implementation Project
Optimizing Grant Funds For Recharge

Challenges

- Short implementation window
- Recharge water rights status
- CEQA/Permit Approvals
- Can’t purchase water w/grants
- Recharge feasibility
- Short vs. long term projects
- Quantifying benefits

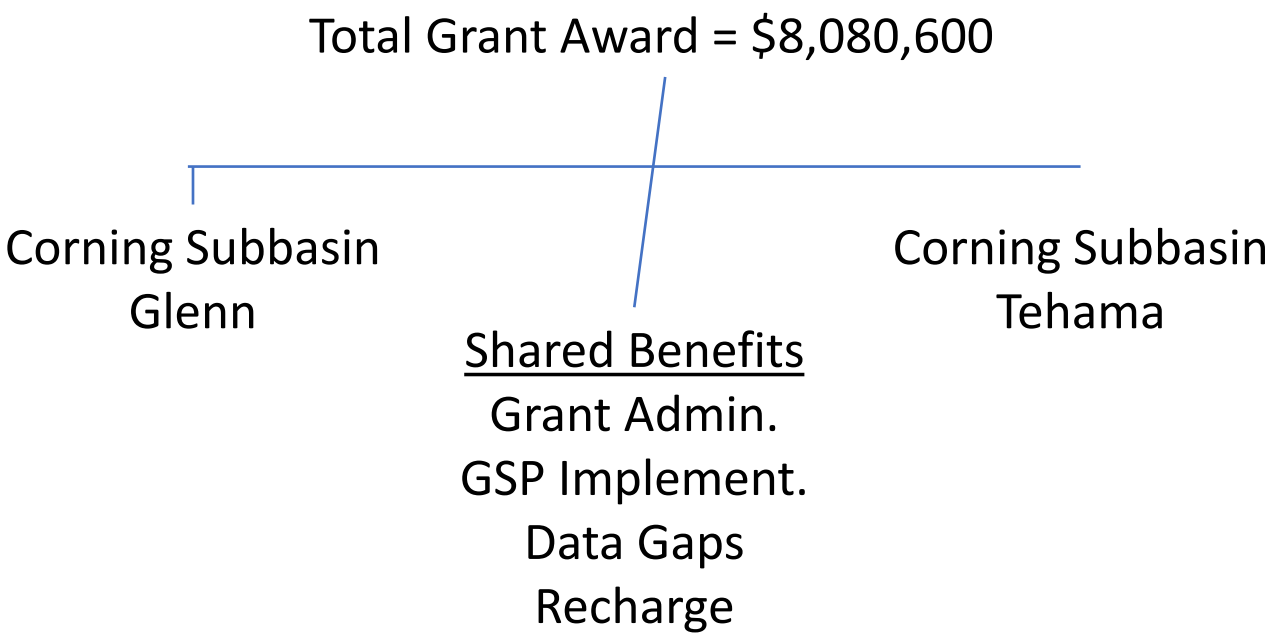
Opportunities

- Maximize existing facilities for water supply benefits
- Consider facility re-operations
- Consider partnerships
- Maximizing surface water use and applications
- Economical system upgrades
- Quantifying benefits

LSCE is preparing a series of Technical Memoranda focusing on recharge feasibility and prioritization.

LSCE

Tehama GSA GSP Implementation Project
Corning Subbasin Benefits



LSCE will track and report on benefits to the Corning Subbasin

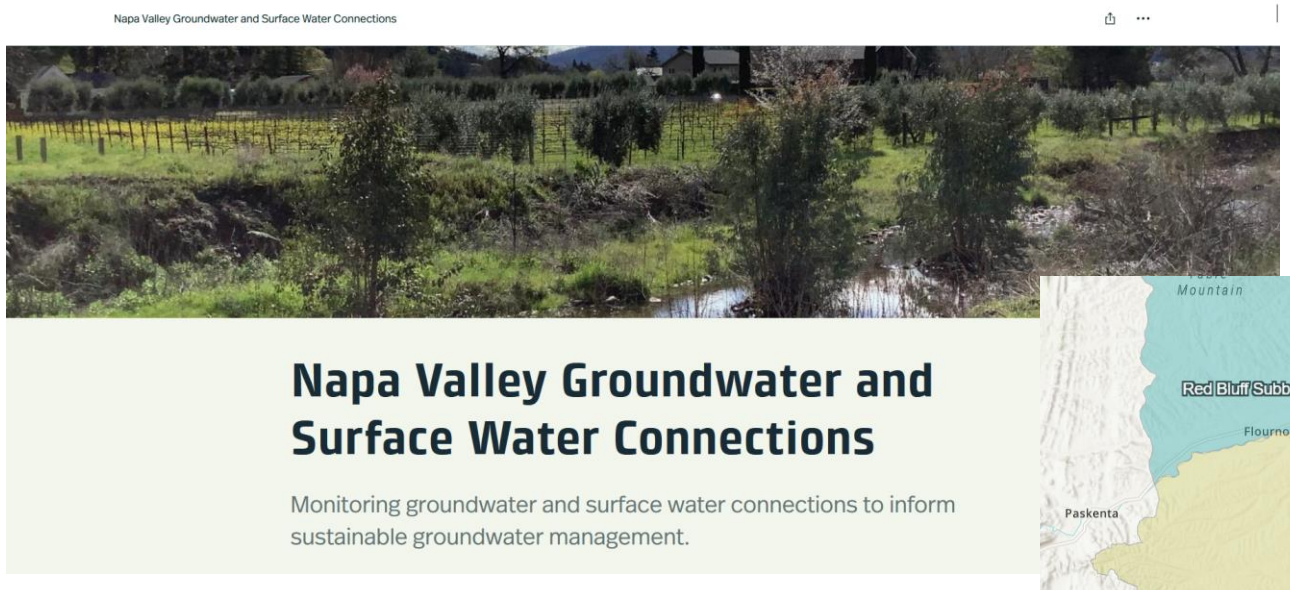
LSCE

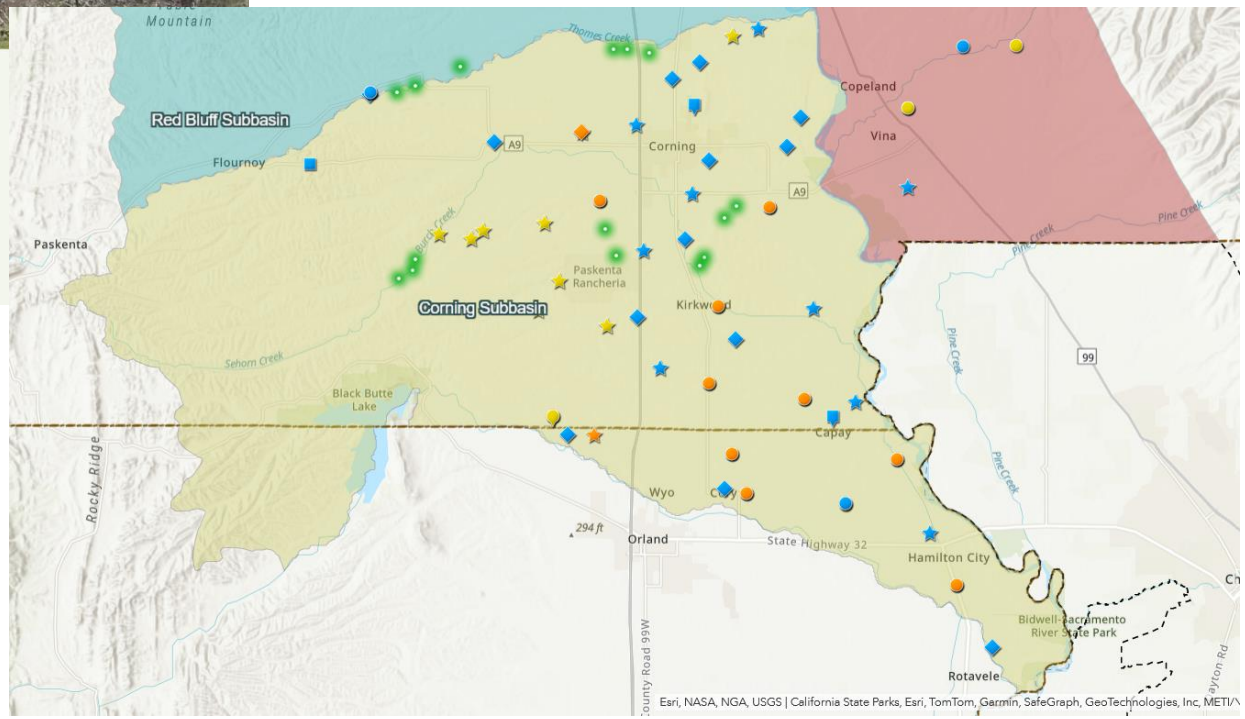
Task 2. GSP Implementation, Outreach, and Compliance Activities

- **Task 2.1** – GSP Annual Reports: Complete
- **Task 2.2** – Update GSP based on DWR Determination Letters: Complete
- **Task 2.3** – Stakeholder Engagement and Community Outreach: Created informational flyers, planning newsletter, website improvements, advertising LSCE web map
- **Task 2.4** – Develop Long-Term Funding Strategy
- **Task 2.5** – Develop & Implement Policy Framework for Water and Land Use Restrictions
- **Task 2.6** – Regional Surface Water/Groundwater Interactive Model
- **Task 2.7** – 5-year GSP Update (Periodic Update)

Task 2.3 – Stakeholder Engagement and Community Outreach

- **Planning Story Map and Map Websites**





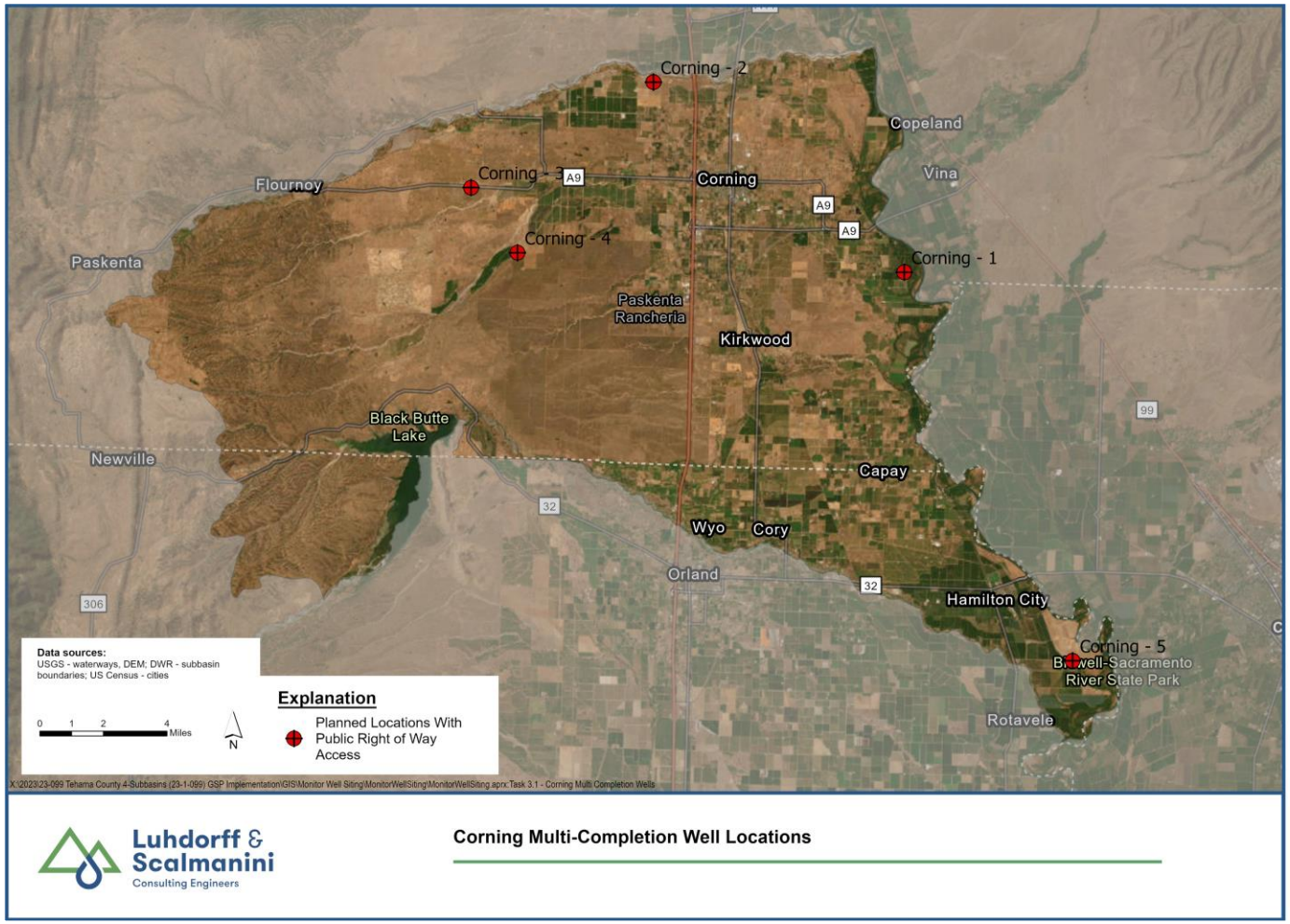
LSCE

Task 3. Ongoing Monitoring, Data Gaps, & Enhancements for Corning & Antelope Subbasins

- **Task 3.1** – Installation of Multi-Completion Monitoring Wells
- **Task 3.2** – Install SW/GE Monitoring Sites
- **Task 3.3** – Synoptic Stream Gauging
- **Task 3.4** – Biological Investigation (Groundwater Dependent Ecosystems)
- **Task 3.5** – Community Domestic Monitoring
- **Task 3.6** – Groundwater Levels and Quality Monitoring (Antelope Only)
- **Task 3.7** – Expand Groundwater Quality Monitoring
- **Task 3.8** – Video Log Current Wells with Unknown Construction Details
- **Task 3.9** – Expand Geologic Understanding of Subbasin

Task 3.1 - Progress: Multi-Completion Monitoring Wells

- Identified locations for MC Wells:
  - Conducted Site Walks with Driller 5/28/2024
  - All Sites are Feasible
- In progress:
  - Finalizing Technical Specifications
  - Submitting Permit Applications



28

Task 3.1 - Progress: Multi-Completion Monitoring Wells

Corning 1

Corning 2

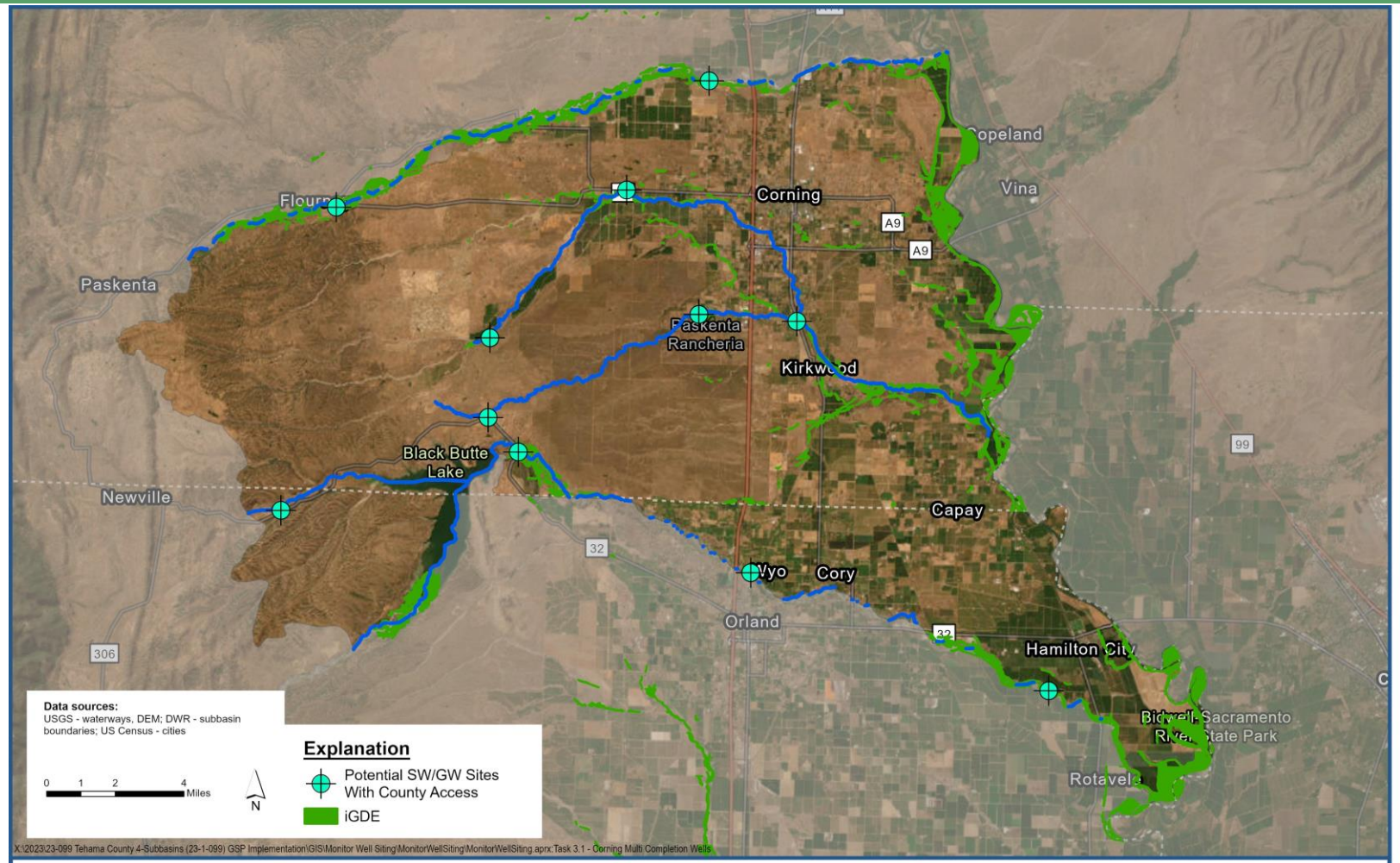
Corning 3

Corning 4

Corning 5

Task 3.2 - Progress: Surface Water/ Groundwater Site Identification

- Identified Potential Locations for SW/GW Sites:
  - Locations have County public right of way
  - Near to streams identified as losing
  - Near indicators of GDE
- In progress:
  - Finalizing Locations with GSA
  - Drafting Technical Specifications
  - Performing Site Visits



Luhdorff & Scalmanini Consulting Engineers

Corning Surface Water/Groundwater Sites

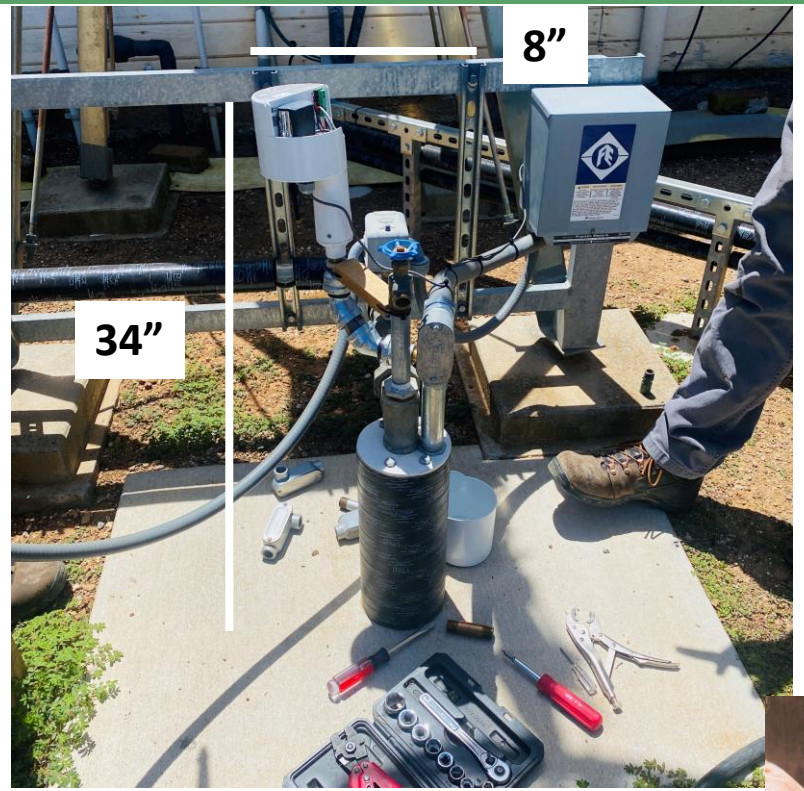
LSCE

Task 3.3 - Synoptic Stream Gaging

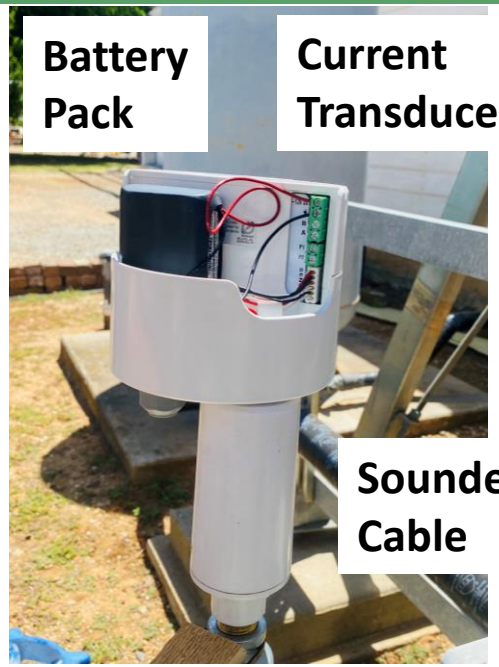
- Reconnaissance Stream Survey Thomas Creek:
  - Identified accessible measurement points
  - Utilized drone to refine reach definitions
- In progress:
  - Stream Profiling and Flow Measurements Occurring Week of 6/3/2024
  - Using Results to Plan for Long Term Measuring

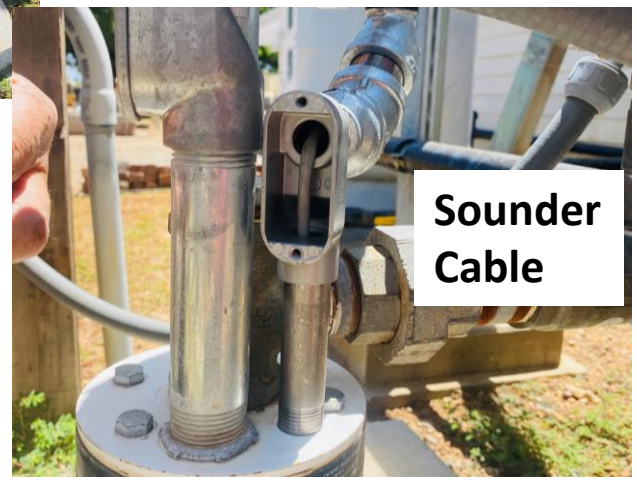
Task 3.5 - Domestic Monitoring

- Setting Up Pilot/Demonstration
  - Pilot volunteer in Glenn County
  - WellIntel Sounder/Data Logger Installed 5/29
- In Progress:
  - Identify Ideal Volunteer Wells
  - Equip Volunteer Wells After Pilot Demonstration (2-3 months)
  - Work with DWR to outfit more wells



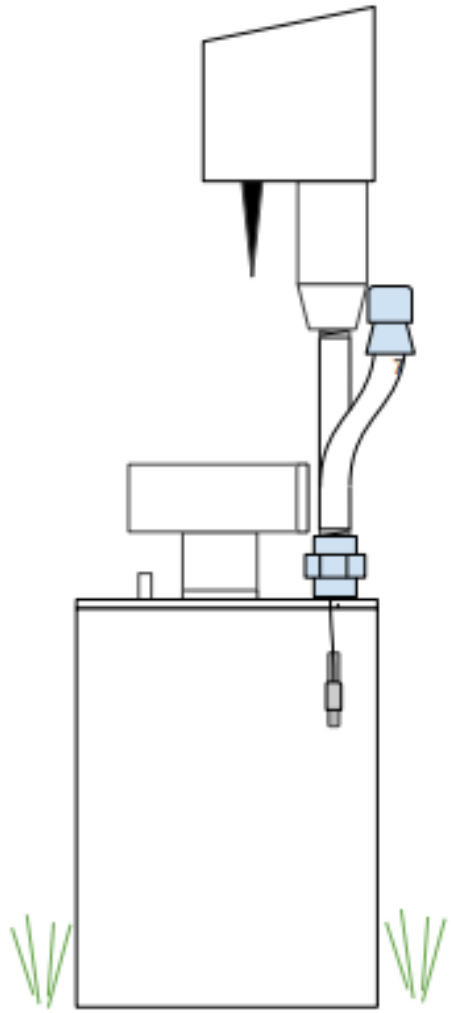
Full Set Up Above; gateway box, ethernet cable, usb cable not shown





LSCE

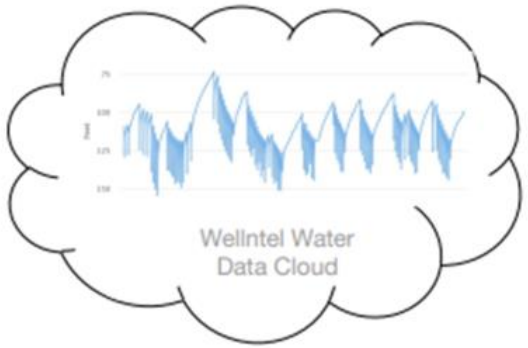
Task 3.5 - Domestic Monitoring (Telemetry Equipment)

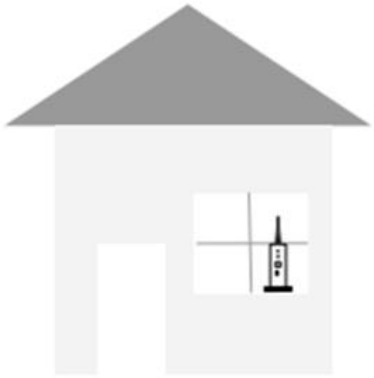


Wellntel Sensor on Well Seal

Task 3.5 - Domestic Monitoring (Telemetry Equipment)

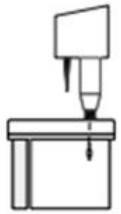
… with local or remote cellular telemetry





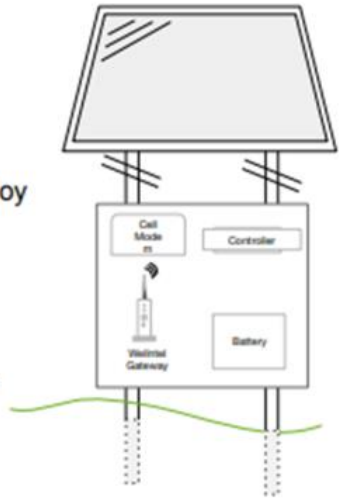
LOCAL
Internet connection within business, farm or home within 1,800' of sensor

- Duplex radio connection
- Gateway connected to router
- No WIFI or login necessary
- If connection lost, sensor logs for download



REMOTE
No local broadband connection, deploy cellular base station within 1,800' of sensor

- Duplex radio connection
- Gateway connected to modem
- Cell carrier agnostic
- If connection lost, sensor logs for download or upload when re-connected



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Task 3.4 – Biological Investigation (Groundwater Dependent Ecosystems)

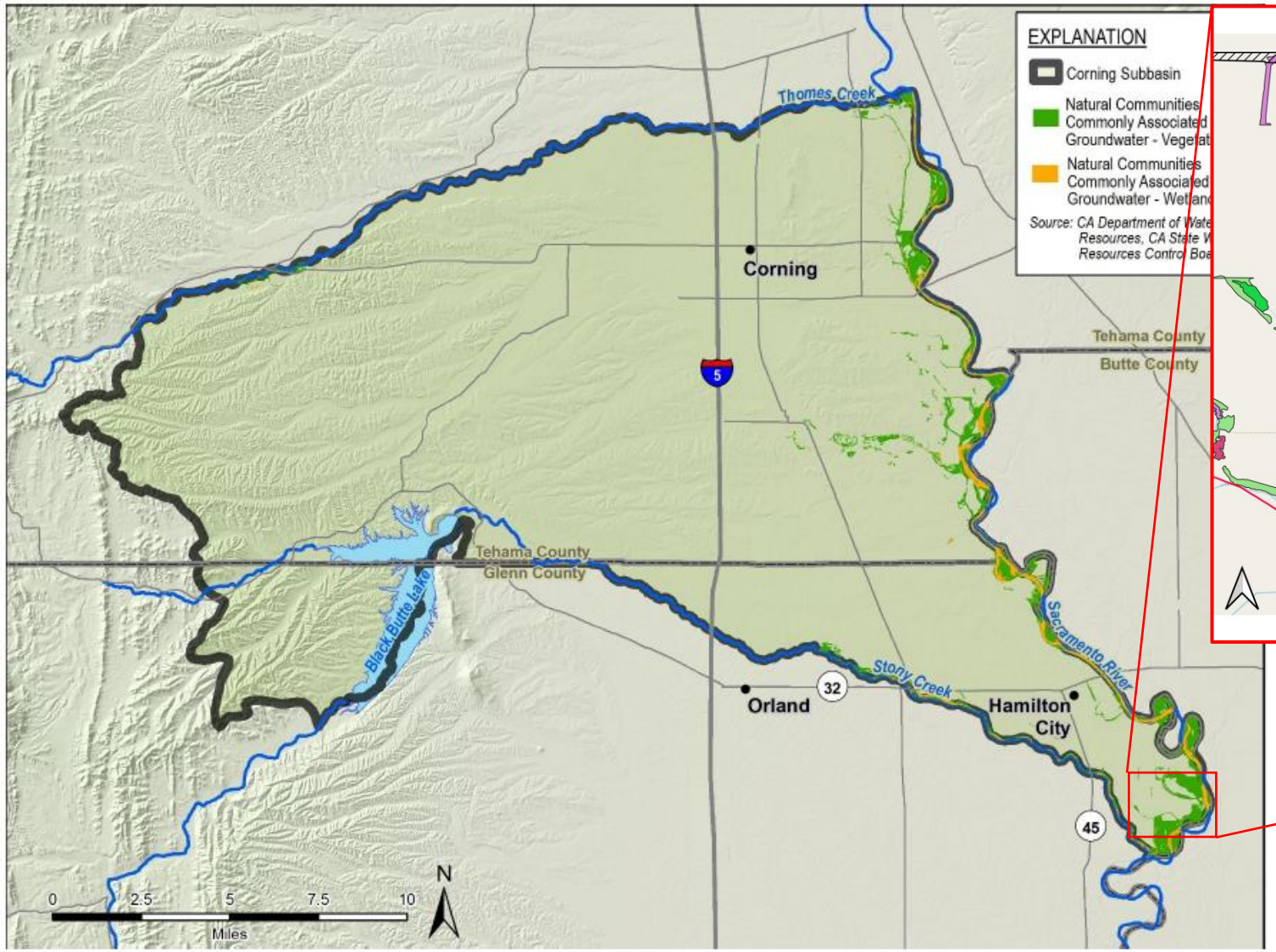
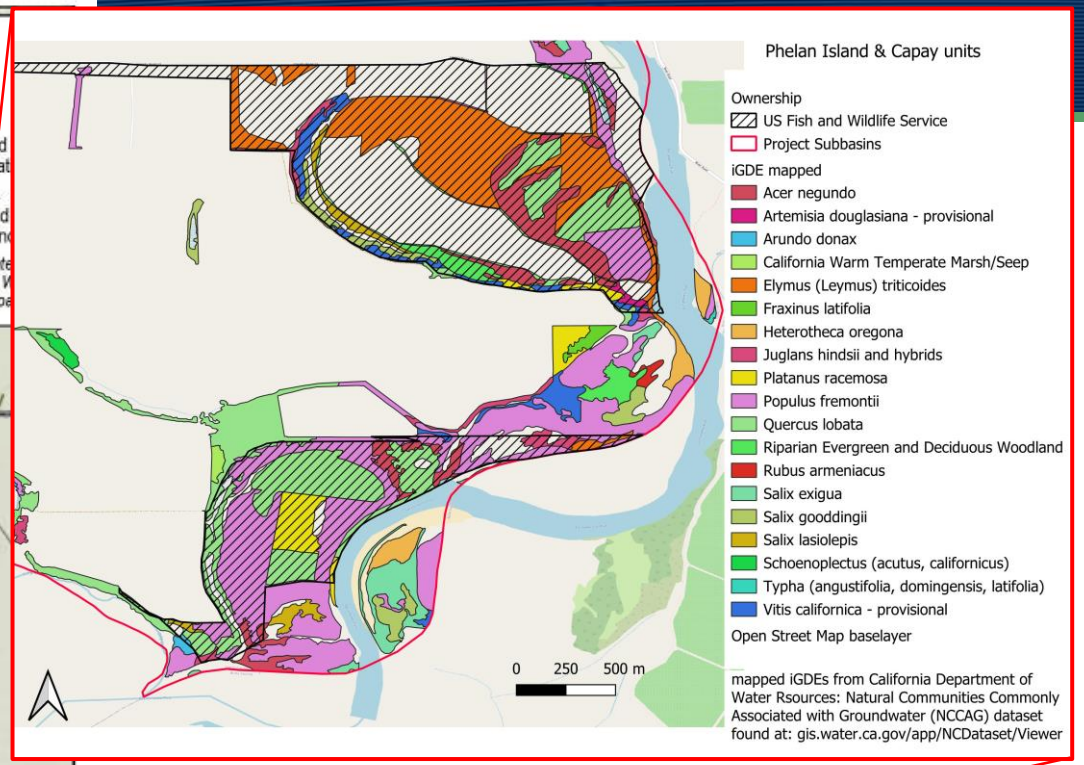


Figure 3-59. Potential GDEs Identified in the Subbasin



- Surveying and sampling GDEs along Sacramento River (Week of 6/3/2024)
- Pursuing access to survey and sample GDEs along Stony Creek, Brannin Creek, and Thomes Creek.

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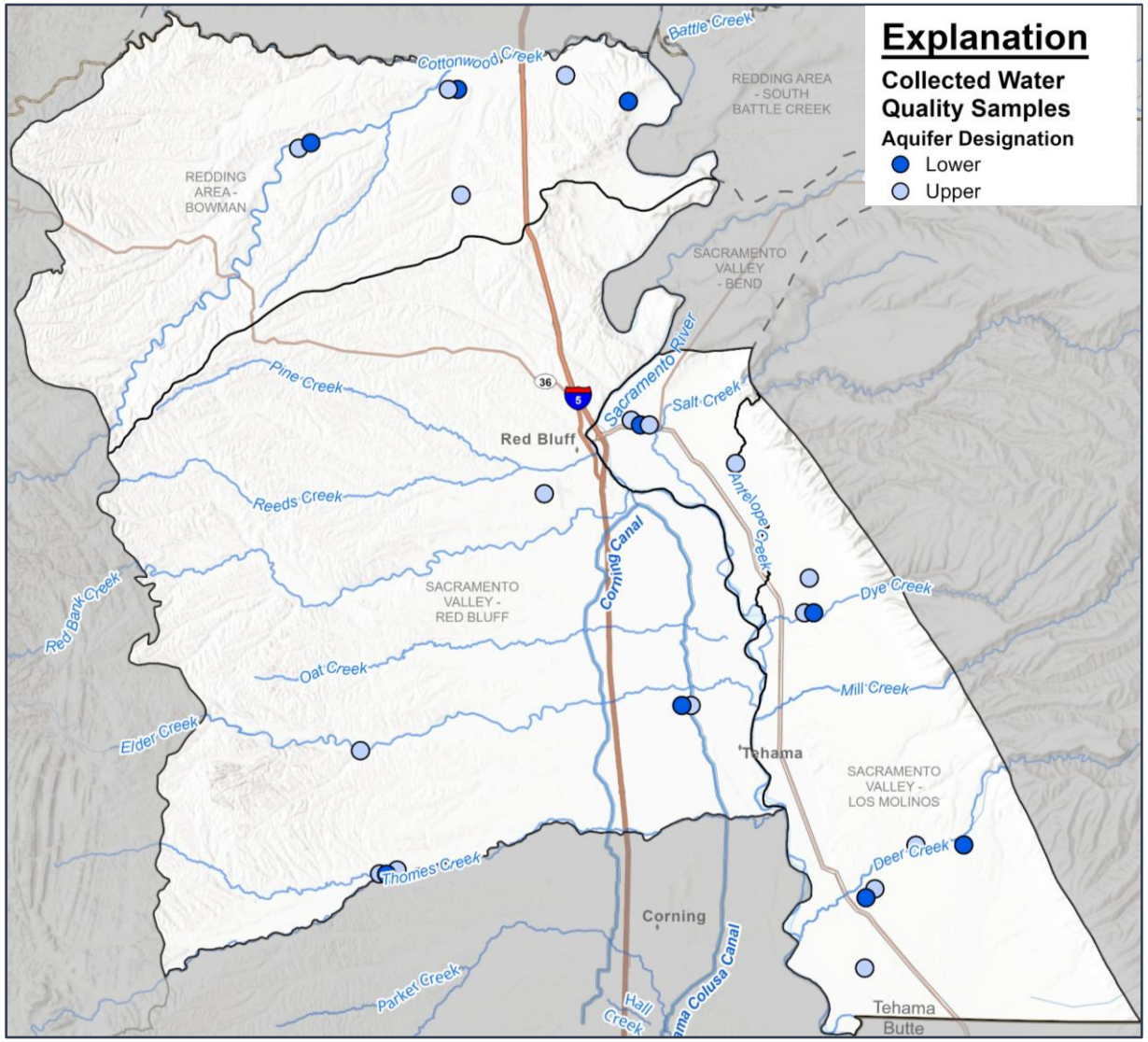
Task 3.7 - Groundwater Quality Compliance Sampling

- Samples were collected and tested for TDS
- Reported in Annual Reports
- In progress: expanding monitoring network in Corning Subbasin



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Seeking Potential Volunteers

- In Need of Volunteers:
  - Interested in Having their Domestic Well Water Levels Monitored
  - Interested in having their wells sampled for TDS
  - With property along Stony Creek willing to allow access for GDE Mapping

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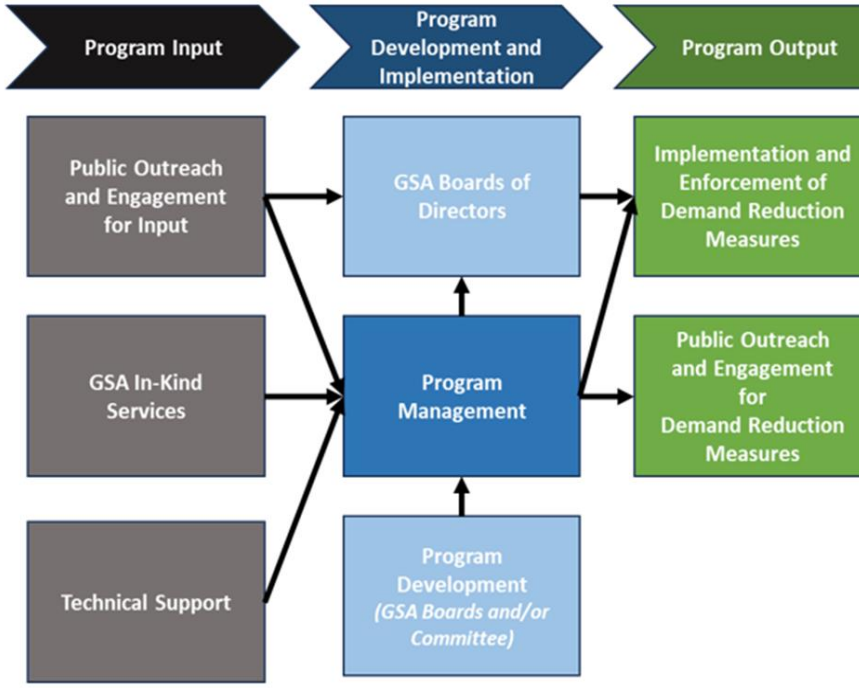
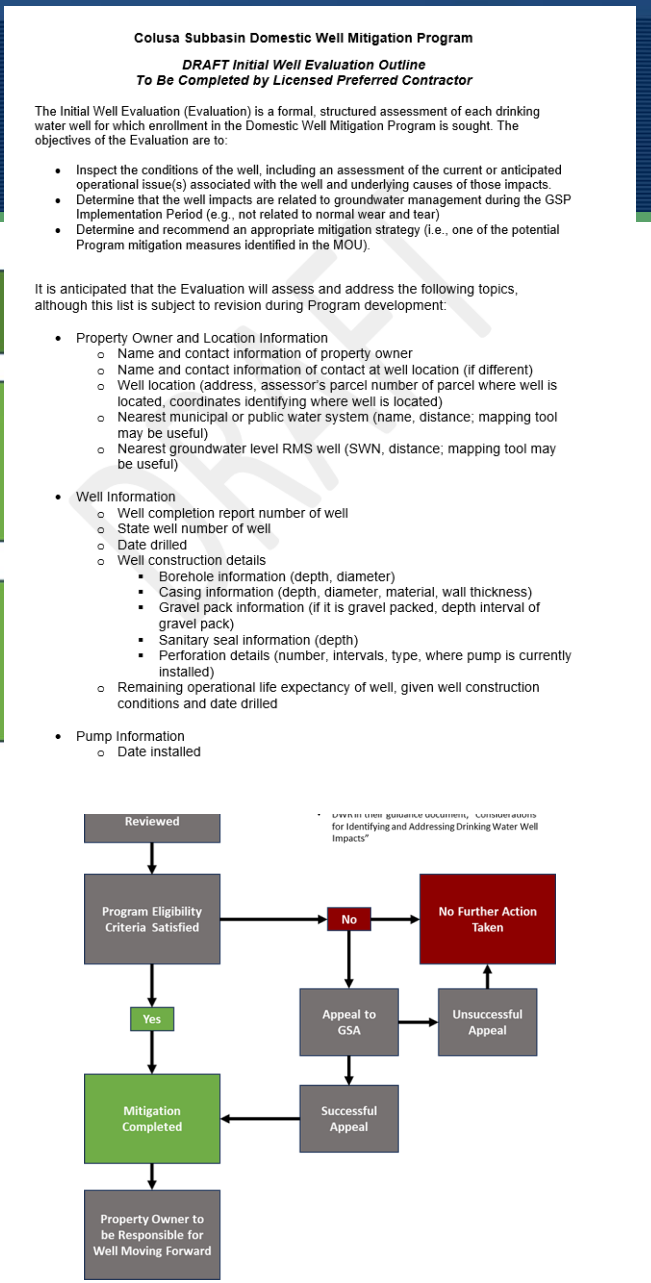
Well Mitigation Discussion

- CSGSA discussed on 5/23: created standing agenda item
- Groundwater Commission Ad Hoc Committee formed
- Learn from others
- Milestones and timeline
- Funding
- Stakeholder Engagement
- Define processes
- Prepare data collection and DMS



Example implemental flow chart, organizational structure and evaluation outline



Colusa Subbasin Domestic Well Mitigation Program

DRAFT Initial Well Evaluation Outline
To Be Completed by Licensed Preferred Contractor

The Initial Well Evaluation (Evaluation) is a formal, structured assessment of each drinking water well for which enrollment in the Domestic Well Mitigation Program is sought. The objectives of the Evaluation are to:

- Inspect the conditions of the well, including an assessment of the current or anticipated operational issue(s) associated with the well and underlying causes of those impacts.
- Determine that the well impacts are related to groundwater management during the GSP Implementation Period (e.g., not related to normal wear and tear)
- Determine and recommend an appropriate mitigation strategy (i.e., one of the potential Program mitigation measures identified in the MOU).

It is anticipated that the Evaluation will assess and address the following topics, although this list is subject to revision during Program development:

- Property Owner and Location Information
  - Name and contact information of property owner
  - Name and contact information of contact at well location (if different)
  - Well location (address, assessor's parcel number of parcel where well is located, coordinates identifying where well is located)
  - Nearest municipal or public water system (name, distance; mapping tool may be useful)
  - Nearest groundwater level RMS well (SWN, distance; mapping tool may be useful)
- Well Information
  - Well completion report number of well
  - State well number of well
  - Date drilled
  - Well construction details
    - Borehole information (depth, diameter)
    - Casing information (depth, diameter, material, wall thickness)
    - Gravel pack information (if it is gravel packed, depth interval of gravel pack)
    - Sanitary seal information (depth)
    - Perforation details (number, intervals, type, where pump is currently installed)
  - Remaining operational life expectancy of well, given well construction conditions and date drilled
- Pump Information
  - Date installed

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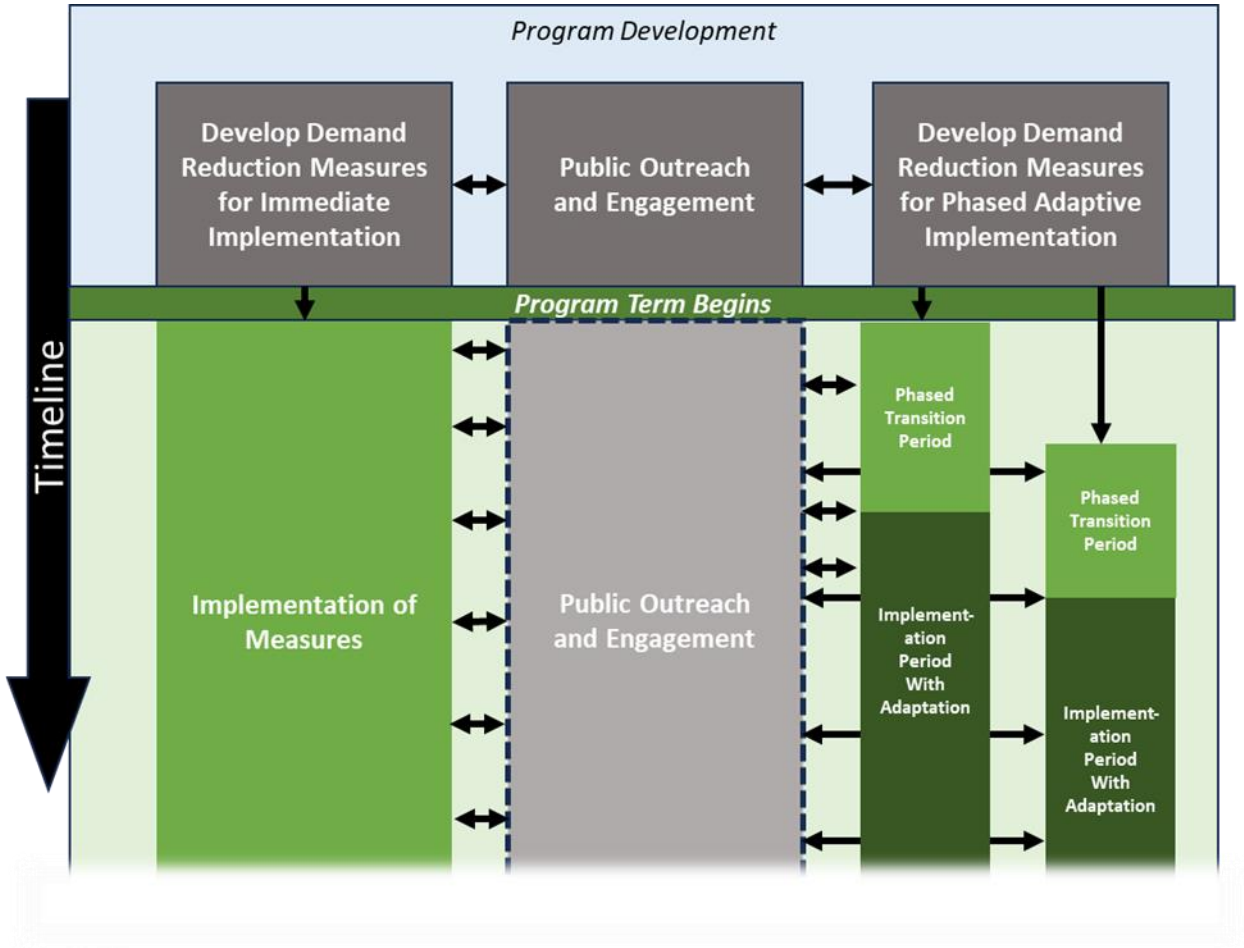
Demand Management Discussion

- CSGSA discussed on 5/23: created standing agenda item, appointed member & alternate for coordination, reviewed consistency determination process and reached consensus maintain current process
- Groundwater Commission Ad Hoc Committee formed
- Learn from others
- Milestones and timeline
- Funding
- Stakeholder Engagement
- Define processes
- Prepare data collection and DMS



Notes:
1. Steps shown herein are in tended to demonstrate critical components and is not intended to be indicative of all steps that may be required for Program implementation.
2. Steps shown herein are subject to revision by the CGA and GGA GSAs.

Example implemental flow chart

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Questions?