



Stanislaus & Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency

1231 11th Street | Modesto, CA 95354
Phone: (209) 526-7564 | Fax: (209) 526-7352
Email: John.Davids@mid.org

STRGBA GSA AGENDA

May 12, 2021 (1:30 p.m. – 2:00 p.m.)

Webinar Digital Platform or Phone Meeting

<https://us02web.zoom.us/j/87846141611>

By phone: 1-669-900-9128

Webinar ID: 878 4614 1611

This meeting is being conducted via webinar for all seven member agencies, pursuant to Executive Orders signed by Governor Gavin Newsom related to the ongoing COVID-19 pandemic, including provisions regarding the Brown Act. Members of the public and member agency staff may join the meeting utilizing Zoom's webinar feature if desired, or a phone number as provided in this Agenda. Members of the public will continue to have the opportunity to provide public input via the webinar or phone features. Members of the public may also email public comments by 3:00 p.m. on the day preceding the GSA meeting to: [strgba.org](mailto:public@strgba.org). If public comments are timely submitted by email, then those comments will be identified during the public input section of the Agenda or during a specific agenda item if the agenda item is identified in the email. The Brown Act does not require a member of the public to state her or his name; please indicate in your email if you would like your name stated or if you want to remain anonymous. _

PUBLIC PARTICIPATION

The public may participate in this meeting in the two ways described below.

Instructions for Participating in STRGBA GSA & Technical Advisory Meeting via Zoom Webinar or Phone

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1. Call to Order/Welcome and Introductions
(Four agencies needed for a quorum)
2. Business from the Public
Who: Public
Expected Outcome: Interested persons are welcome to introduce any topic within the Agency's jurisdiction. Matters presented under this heading may be discussed but no action will be taken by the Agency at this meeting.
3. Topic: Approve 4/14/21 Meeting Minutes [[Action Item](#)]
Who: John Davids, Committee
Expected Outcome: Approval
4. Topic: Budget and Schedule Update
Who: Gordon Enas, Committee
Expected Outcome: Discussion
5. Topic: Public Outreach Update
Who: Gordon Enas/Samantha Wookey, Committee
Expected Outcome: Discussion
6. Topic: GSP Schedule
Who: Todd Groundwater, Committee
Expected Outcome: Discussion
7. Governing Body Engagement
Who: John Davids, Committee
Expected Outcome: Discussion
8. Next Meeting
June 9, 2021 at 1:30 p.m. via Zoom
9. Items too late for the agenda



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MEETING MINUTES

April 14, 2021 (1:30 p.m. – 2:00 p.m.)

The meeting was called to order at 1:30 p.m.

1. Welcome and Introductions

The following members of the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) attended via Zoom:

Modesto Irrigation District (MID): John Davids
City of Waterford: Mike Pitcock
City of Modesto: Miguel Alvarez
Stanislaus County: Walt Ward
City of Oakdale: Michael Renfrow
Oakdale Irrigation District: Eric Thorburn
City of Riverbank: Michael Riddell

Other Attendees:

Alexis Stevens, Somach, Simmons & Dunn	Amanda Peisch-Derby, DWR
John Beckman	Kirsten Pringle, Stantec
Stacy Henderson, Terpstra Henderson	Mike Dunbar
Hilary Reinhard, Provost & Pritchard	David Orth
Gordon Enas, MID	Phyllis Stanin, Todd Groundwater
Samantha Wookey, MID	Matthew Toste
John Mensinger	
Emily Sheldon	
Valerie Kincaid	
Khandriale Clark, Stantec	

2. Business from the Public

N/A

3. Approve 3/10/21 Minutes [[Action item](#)]

Renfrow moved, 2nd by Thorburn, to approve 3/10/21 meeting minutes. Motion carried.



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4. Letter of Support for Water Smart Grant [Action item]

Enas introduced a request from Stockton East Water District. The District is applying to the Bureau of Reclamation's Applied Science Grant Program to fund the Eastside Groundwater Measurement Project. GSA staff requests approval to submit a letter of support to Reclamation on behalf of Stockton East Water District recommending this project be considered under the Applied Science Grant Program.

Thorburn moved, 2nd by Ward to approve letter of support. Motion carried.

5. Seawater Intrusion Resolution [Action item]

Enas introduced a resolution on seawater intrusion. At the January 13, 2021 Technical Advisory Committee meeting Todd Groundwater gave a presentation on Sustainable Management Criteria and the six sustainability indicators. During the discussion on the seawater intrusion sustainability indicator, Todd mentioned that this indicator might not be applicable to the Modesto Sub-basin. Since then, Todd has provided a technical memo describing the rationale for eliminating seawater intrusion from the list of applicable sustainability indicators. GSA staff requests a resolution making the determination that seawater intrusion does not exist and is not likely to occur in the future, and therefore a seawater intrusion sustainability indicator is not applicable in the Modesto Subbasin.

Ward moved, 2nd by Riddell to approve the resolution. Motion carried.

6. Budget and Schedule Update

Enas reported that Todd Groundwater has expended approximately 55% of the budget and 74% of the time scheduled through February 28, 2021.

7. Public Outreach Update

Enas stated the first Office Hours session was held on March 25, 2021. The next office hours is tentatively scheduled for the end of April. Enas also mentioned that the GSA received notice last week that DWR's Facilitation Support Services program approved STRGBA GSA's requested amendment to the Implementation Service Plan. The amendment will provide additional scope and budget to extend the period of performance through the end of January 2022. STRGBA GSA will continue to use the services of Stantec. Wookey then introduced the next STRGBA GSA newsletter. The newsletter is being prepared and is scheduled for a May release.



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8. Monitoring Well Update

Stanin stated the monitoring well construction is nearly complete and should be finished in a couple weeks. Wells 7 through 10 in the eastern portion of subbasin and Wells 3, 4, and 6 are finished, and Wells 1, 2 and 5 are yet to be completed.

9. Next meeting

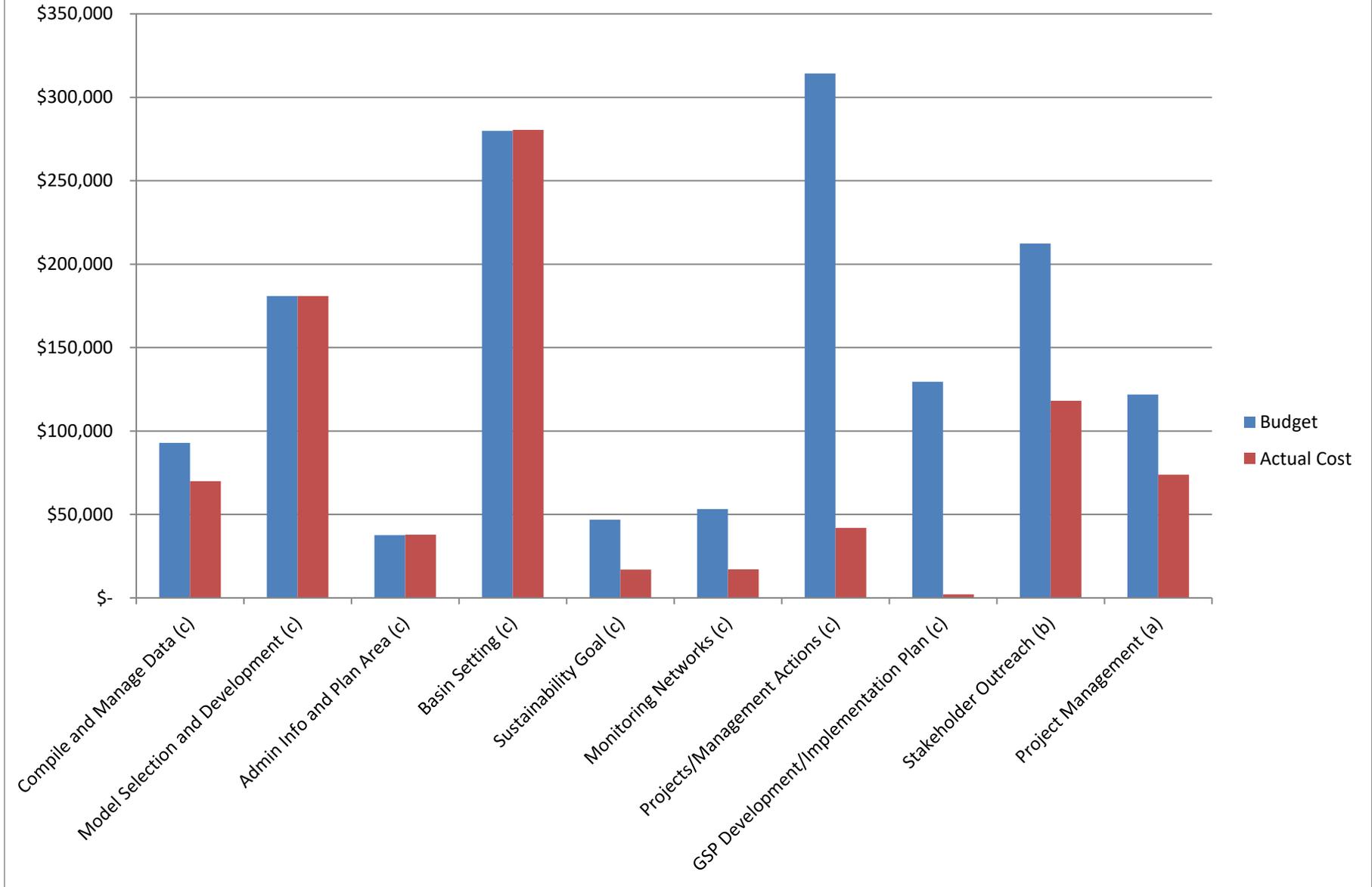
May 12, 2021 at 1:30 p.m. via Zoom

10. Items too late for the agenda

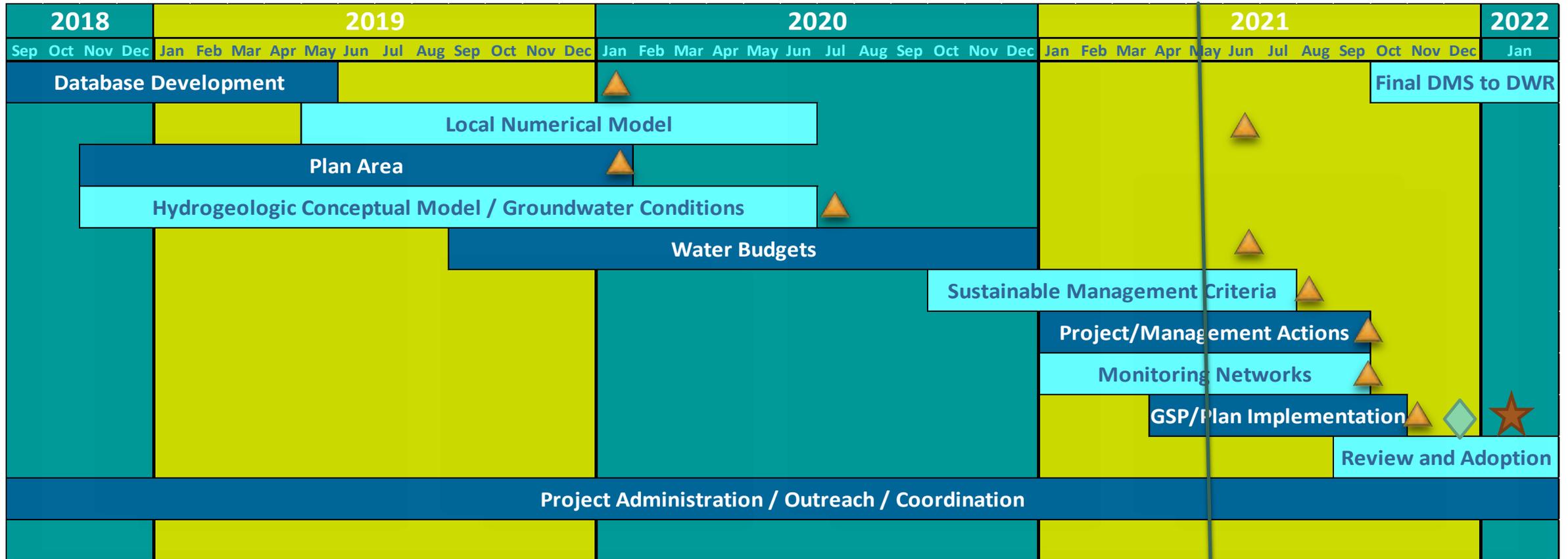
N/A

DRAFT

Cost To Prepare GSP (September 2018 - March 2021)



MODESTO GSP SCHEDULE



 **GSP Chapter**
  **Final Draft GSP**
  **GSP Adoption**

We are here

STRGBA GSA Governing Board Update Questionnaire

1. Are you regularly updating your governing body on the GSP progress and critical issues?
2. Will your governing body address major issues being discussed in the draft GSP prior to release?

Q	City of Modesto	City of Oakdale	City of Riverbank	City of Waterford	Stanislaus County	MID	OID
1	Yes. Director of Public Works has personally updated the Mayor	Yes. Director, Public Works Superintendent and staff are working on an information item to bring the Board up to speed	Yes. City Manager and City Council receive monthly updates on all SGMA activities and are informed of significant milestones and opportunities for input	Not yet. As I came in a little late to the process, I'm still getting my feet under me and have not updated my council on the subject other than giving them a heads up about the monitoring wells that were drilled in Waterford	Yes. Department Manager and the County's CEO Office receive monthly updates on all SGMA activities and are informed of significant milestones and opportunities for input	Yes. Staff gives a monthly update to the Board using materials from the TAC meetings	Yes. OID's General Manager provides periodic updates at each OID board meeting by attaching the newsletters/flyers or through general discussion. Also, GSP development is brought up during the annual budget approval process, discussed during groundwater/surface water presentations, and posted to

							OID's website under a dedicated SGMA Implementation page
2	Yes. Director of Public Works provides updates to our Council as needed	Staff will work with the Director to answer question 2	Yes in open session	Typically when a study is being performed by a consultant, the consultants as the professionals give updates, if needed	Yes. We have an internal Environmental Review Committee that will review and comment on any draft documents. Plan to bring the draft GSP before the County's Water Advisory Committee in September prior to presenting to the Board of Supervisors for approval and adoption in the Nov/Dec timeframe	Yes. MID Board is notified by email when significant events take place such as monitoring well construction, or public outreach activities.	Yes. OID also formed a SGMA Ad Hoc Committee to work through the GSP draft and adoption process in the Eastern San Joaquin GW subbasin. This allowed a venue for more detailed discussion on specific SGMA topics and provided staff with quick direction on how to move forward



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TECHNICAL ADVISORY COMMITTEE AGENDA

May 12, 2021 (2:00 p.m. – 3:30 p.m.)

Webinar Digital Platform or Phone Meeting

<https://us02web.zoom.us/j/87846141611>

By phone: 1-669-900-9128

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 - a. Wait until the last four digits of your phone number is called by the Host.



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2. Business from the Public
Who: Public
Expected Outcome: Interested persons are welcome to introduce any topic within the Agency's jurisdiction. Matters presented under this heading may be discussed but no action will be taken by the Agency at this meeting.

3. Topic: Approve 4/14/21 Meeting Minutes [[Action Items](#)]
Who: John Davids, Committee
Expected Outcome: Approval

4. Topic: Chronic Lowering of Water Levels/Project and Management Actions
Who: Todd Groundwater, Committee
Expected Outcome: Discussion

5. Topic: Draft Sustainability Goal
Who: Todd Groundwater, Committee
Expected Outcome: Discussion

6. Next Meeting
June 9, 2021 at 2 p.m. (following STRGBA GSA monthly meeting) via Zoom

7. Items too late for the agenda



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**TECHNICAL ADVISORY COMMITTEE
MEETING MINUTES**

April 14, 2021 (2:00 p.m. – 3:00 p.m.)

The meeting was called to order at 2:00 p.m.

1. Welcome and Introductions

The following members of the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) attended via Zoom:

Modesto Irrigation District (MID): John Davids
City of Waterford: Mike Pitcock
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Mike Dunbar
David Orth
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Matthew Toste

2. Business from the Public

N/A



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3. Approve 3/10/21 Minutes [Action item]

Renfrow moved, 2nd by Thorburn, to approve 3/10/21 meeting minutes. Motion carried.

4. Technical Workshop #13 – Climate Change Modeling

Amador presented the model results from the 2070 climate change scenario analysis. Climate change analysis is required under SGMA to be included in the GSP. Model results show that under this scenario rising air temperatures will lead to increased evapotranspiration, decreased availability of surface water, and increased demand for groundwater. The presentation can be accessed at the STRGBA GSA website:

www.strgba.org.

- Davids commented that the analysis is helpful in understanding climate change impacts, but it doesn't include any potential projects or management actions to mitigate the impacts.
- Mensinger stated that when you talk about more precipitation and earlier snowmelt, you're suggesting there'll be more water in the river because the dams will have to release the water, which makes sense on the Tuolumne River. But the same doesn't hold true for the Stanislaus River, because New Melones is a massive reservoir, which is almost never at capacity nor required to make flood releases. So, have you factored that into your assumptions? Amador responded that the modelling relies on the DWR's model, CALSIM, rule curves for reservoir operations, flood control, and stream flows. These rules are mimicked in the analysis. Mensinger added that the Stanislaus is an important river, and since New Melones is regulated by the federal government it requires a deep understanding of how the reservoir is operated to ensure a proper analysis. The same is true for Don Pedro Reservoir and the Tuolumne River.
- Mensinger also commented that the graphic depicting the reductions in projected future surface water deliveries due to the climate change scenario looked odd since MID deliveries are based on the customer's needs. Davids responded that the model is only one climate change analysis tool, but it does underscore the importance that local surface water providers will need to maximize reservoir operations.
- Davids asked how does DWR's methodology used for this analysis relate to adjacent subbasins? Amador responded that the same approach was used for both the Eastern San Joaquin and Turlock subbasins.



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5. GSP Monitoring Network Considerations

Stanin next presented on GSP Monitoring Network considerations and stated they will be selecting the sustainable management criteria and determining monitoring and networks in the coming weeks.

- Ward asked if the University NAVSTAR Consortium (UNAVCO) GPS stations use the same vertical datum as the various monitoring well sites? Stanin responded “Yes”.
- Ward also asked if we will coordinate the network with GSA’s on the other side of the adjoining rivers? Stanin responded “Yes” and added that locating adjacent wells on both sides of the river is very important.
- Riddell added that all wastewater treatment plants in California are required to have monitoring wells, so we should check into using their data. Davids asked Stanin to investigate obtaining data from those plants.

6. Next Meeting

May 12, 2021

7. Items too late for the agenda

N/A



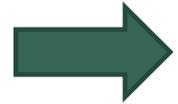
MODESTO SUBBASIN GSP SUSTAINABLE MANAGEMENT CRITERIA

STRGBA TECHNICAL ADVISORY COMMITTEE (TAC) MEETING

May 12, 2021

TODD 
GROUNDWATER

PRESENTATION OUTLINE



- Chronic Lowering of Groundwater Levels
 - Undesirable Results definition
 - Approach to Minimum Thresholds
- DRAFT Sustainability Goal for the Modesto Subbasin
- Preliminary List of Projects and Management Actions

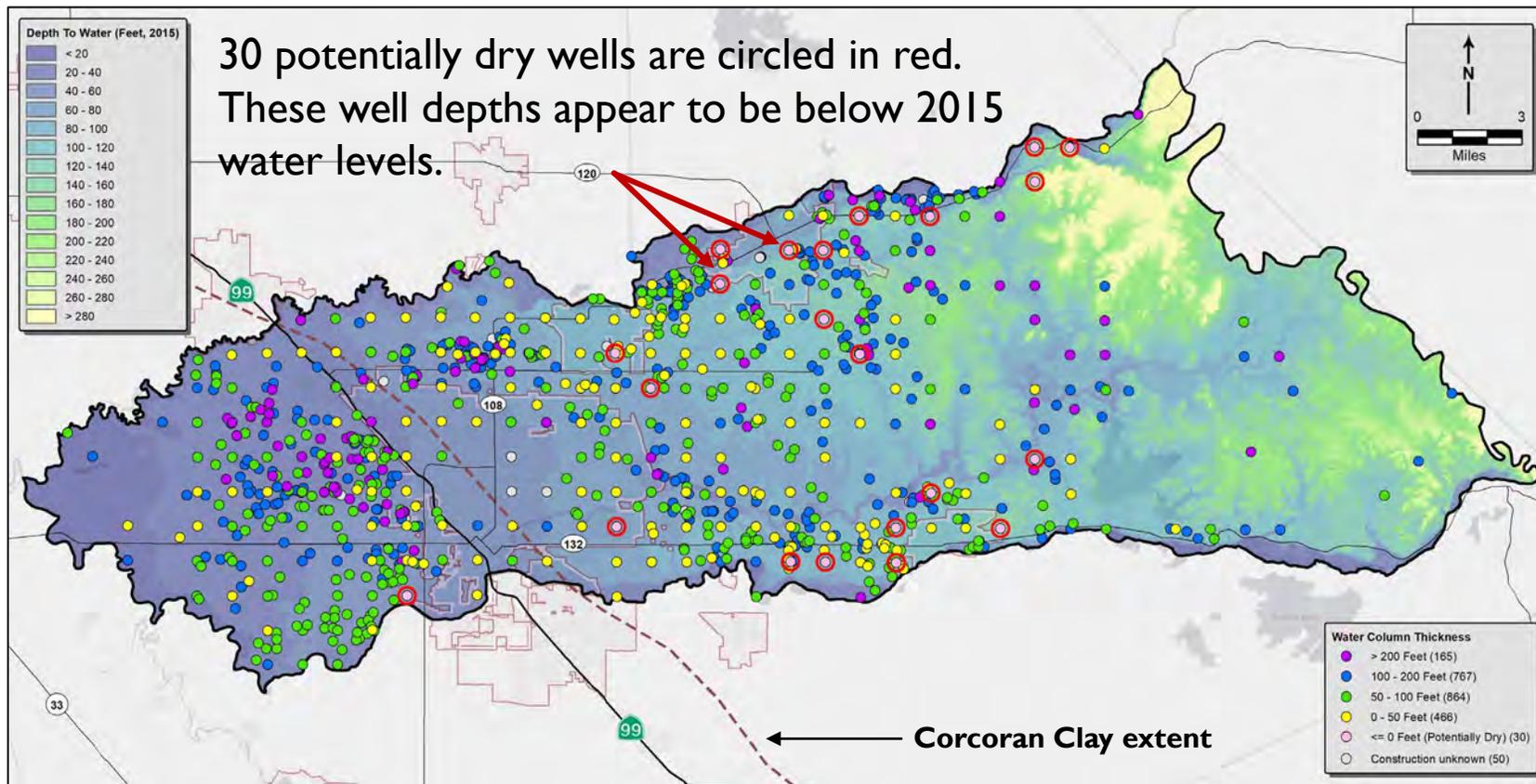


CHRONIC LOWERING OF WATER LEVELS APPROACH TO UNDESIRABLE RESULTS AND MTs

- Adverse impacts to water supply wells occurred during recent drought (e.g., Waterford, OID); City of Modesto predicts well issues if groundwater levels continue to decline
- Adverse impacts to domestic wells also occurred during the recent drought
- Most of these domestic wells appear to have been replaced/deepened; local areas remain vulnerable to domestic well problems if water levels decline
- Current water levels are near recent-drought levels in most areas of the Subbasin; assume that wells are currently capable of supplying water
- Maintaining water levels at or above recent historic low levels would sufficiently protect current water supply wells



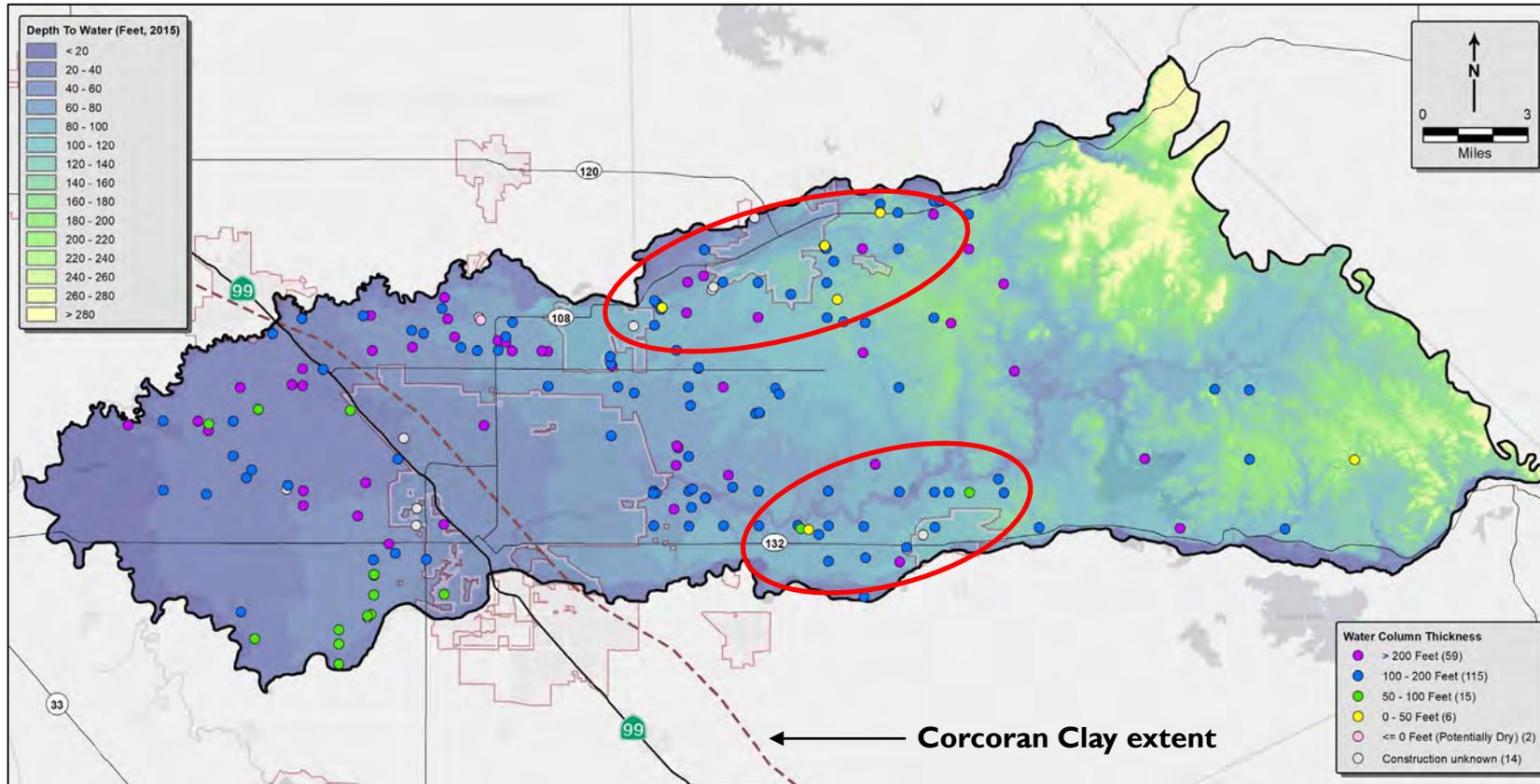
DOMESTIC WELLS CONSTRUCTED BEFORE 2015



- 2,356 domestic wells constructed from 1948 to Nov. 2014 (status unknown)
- 30 potentially dry wells (1.3%) in east-central Subbasin near river boundaries in 2015
- 20% wells appear vulnerable if water levels decline an additional 50 feet (yellow dots)



DOMESTIC WELLS CONSTRUCTED 2015 TO PRESENT



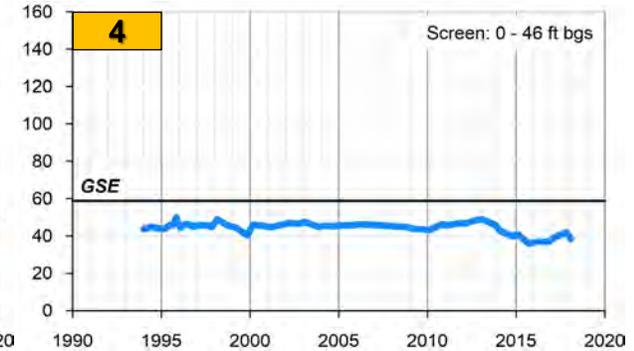
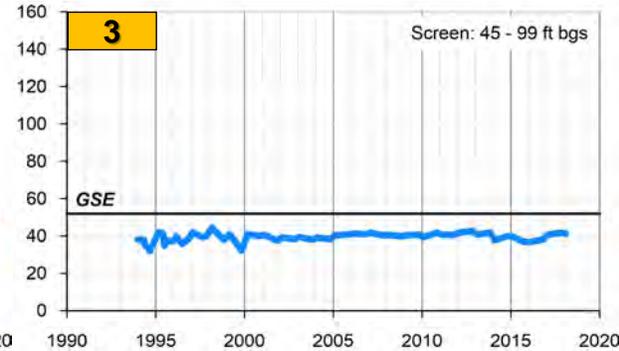
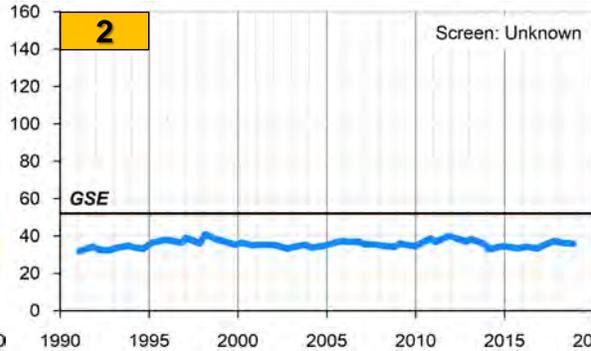
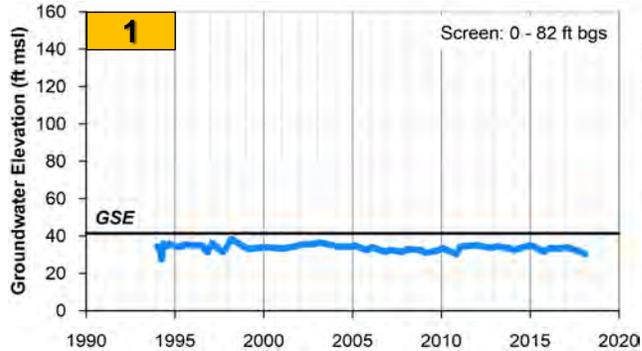
- New domestic wells likely replaced wells impacted in 2015
- Some newer wells remain vulnerable to significant declines in local areas (red circles)
- Hydrographs indicate that current water levels are relatively stable in these areas

CHRONIC LOWERING OF WATER LEVELS APPROACH TO UNDESIRABLE RESULTS AND MTs

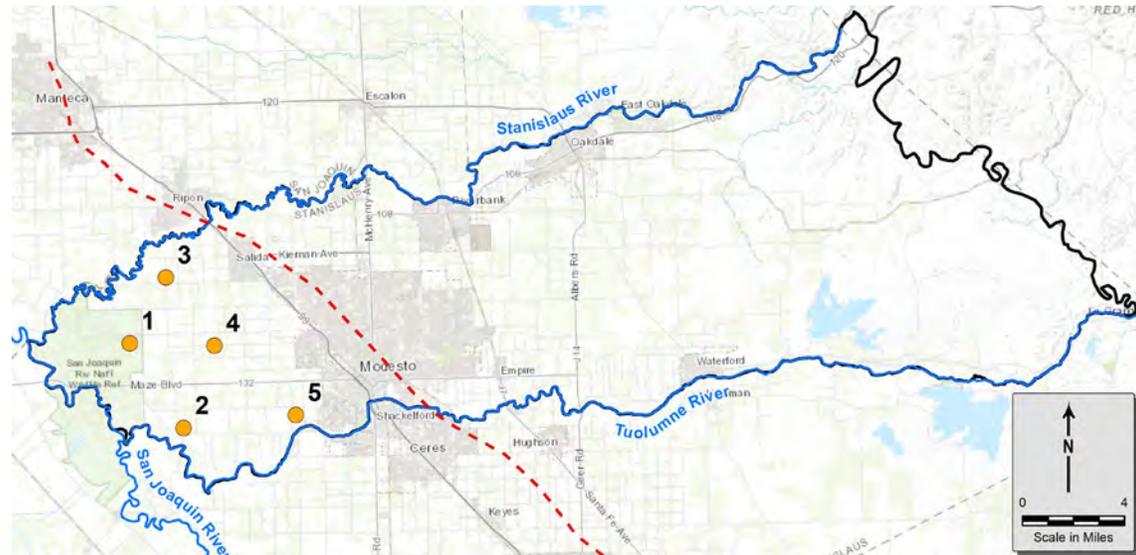
- Due to the lack of surface water, water levels will decline during future droughts
- Operate Subbasin above current lows while allowing some decline during drought cycles
- Need flexibility to allow some water level declines for reliability of water supply
- Data from 2014-2016 drought allow insight into predicting water level declines during future droughts



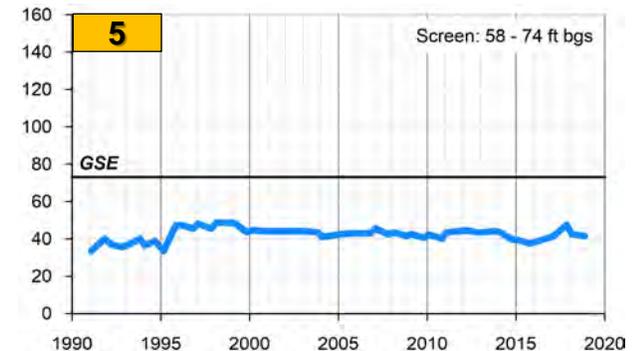
HISTORICAL GROUNDWATER LEVELS WESTERN UPPER PRINCIPAL AQUIFER



- No significant long-term declines (<15 ft)
- Water levels recover during wet periods

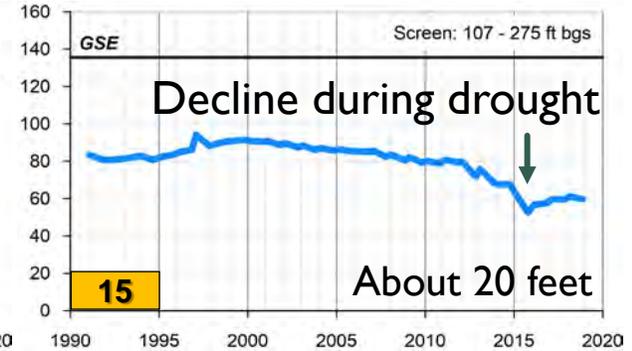
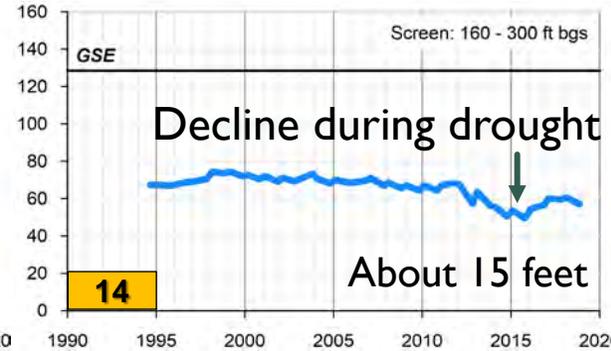
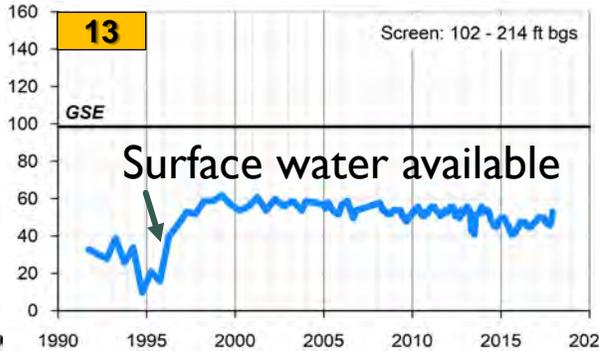
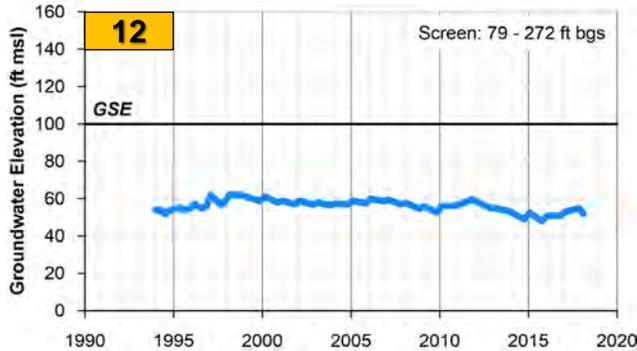


Western Upper Principal Aquifer Wells

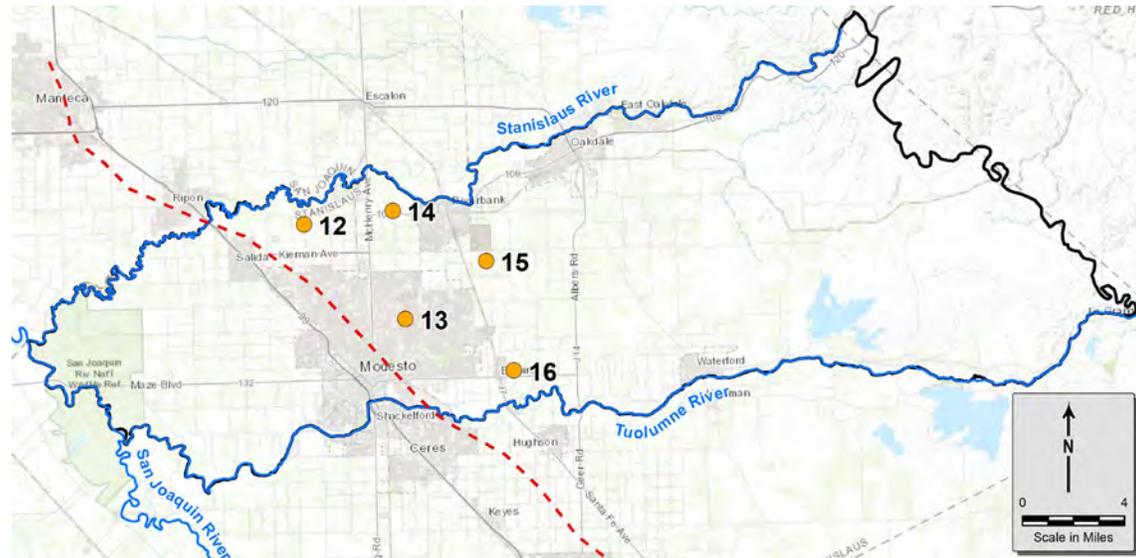




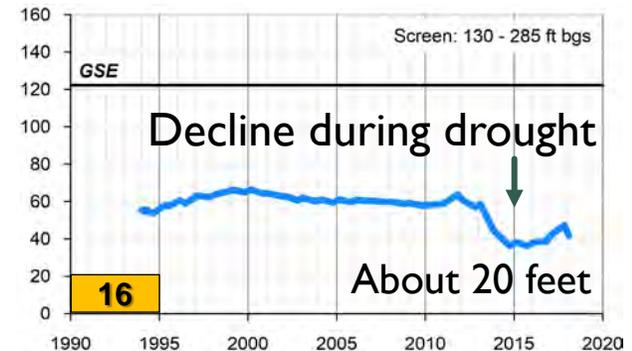
HISTORICAL GROUNDWATER LEVELS EASTERN PRINCIPAL AQUIFER



- Drought declines in Eastern Principal Aquifer 15 ft to 20 ft
- City of Modesto Well (#13 above) water levels rose when surface water became available
- Eastern-most wells have not recovered fully from drought (#14, 15, and 16)

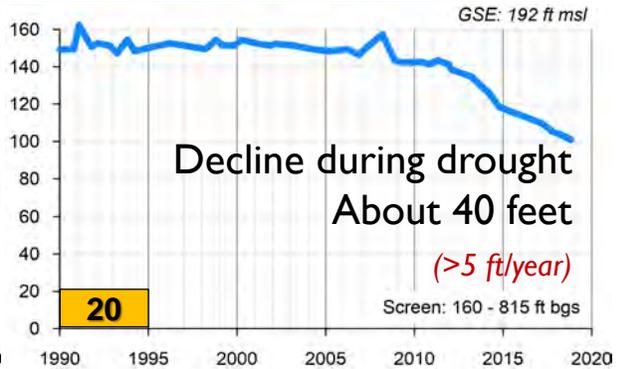
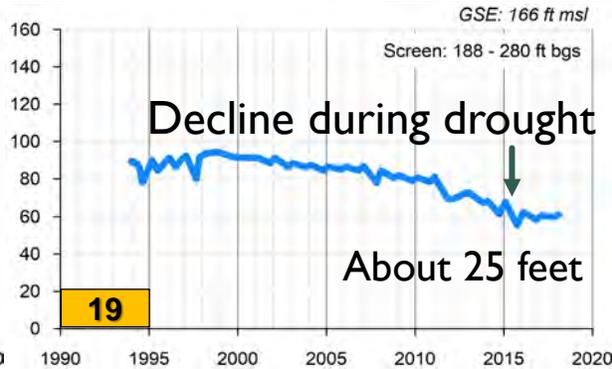
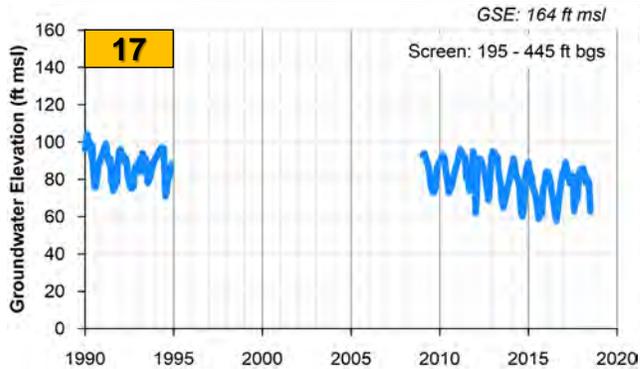


Eastern Principal Aquifer Wells

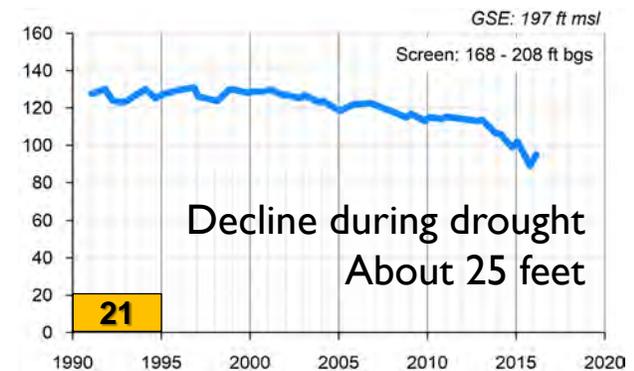
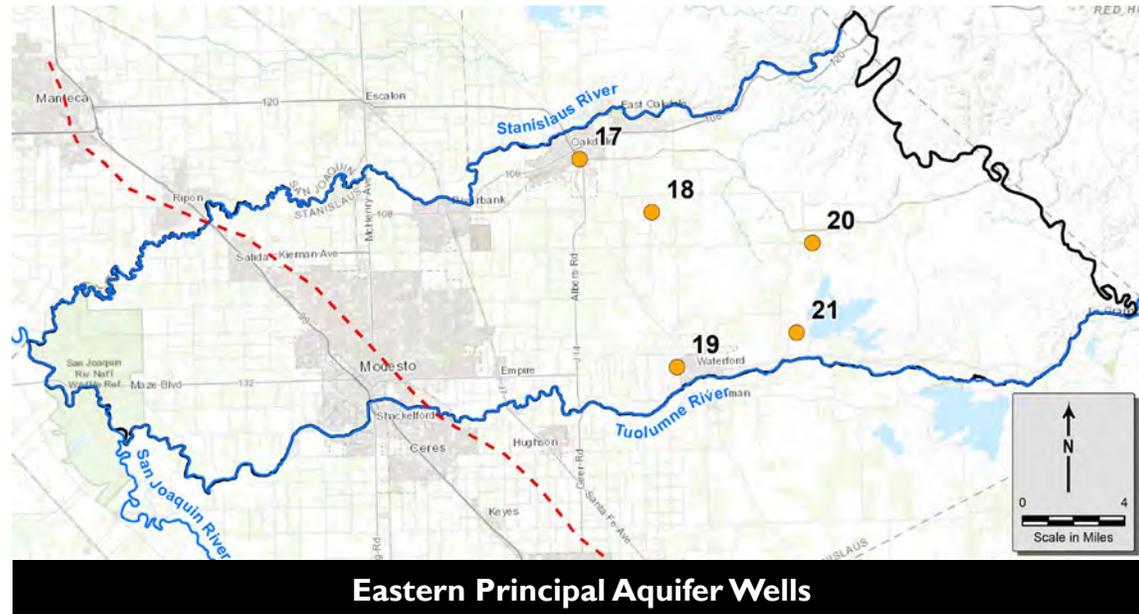




HISTORICAL GROUNDWATER LEVELS EASTERN PRINCIPAL AQUIFER



- Largest water level declines in Non-District East area
- Declines of 25 ft to 40 ft during recent drought
- Rate of decline more than 5 feet/year for some eastern wells





POTENTIAL APPROACH UNDESIRABLE RESULTS (UR) AND MINIMUM THRESHOLDS (MT)

Undesirable Result (UR) Definition

Significant and unreasonable groundwater level declines such that water supply wells are adversely impacted during multi-year droughts in a manner that cannot be readily managed or mitigated.



The MT will be expressed as the historic low groundwater elevation observed from WY 1991 through WY 2020 at each representative monitoring location, based on available data.

The UR will be evidenced by an exceedance of a minimum threshold (MT) at 30 percent of the representative monitoring wells in six consecutive semi-annual monitoring events.

This approach is preliminary and may be modified based on TAC / stakeholder input and/or details of the final monitoring network.

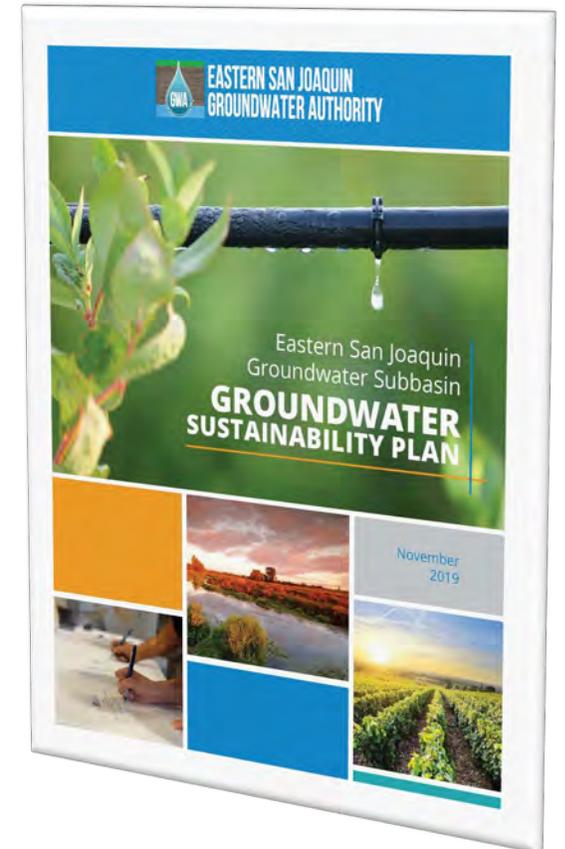


ADJACENT SUBBASINS SELECTED MTs BASED ON HISTORICAL LOW WATER LEVELS

Eastern San Joaquin Subbasin GSP

Chronic Lowering of Groundwater Levels

- Undesirable results definition considers historical drought levels and domestic well depths
- MTs – shallower of:
 - historical drought low level (1992 or 2015-2016) with a buffer of the historical fluctuation, or
 - 10th percentile of domestic well depth (protects 90% of domestic wells)



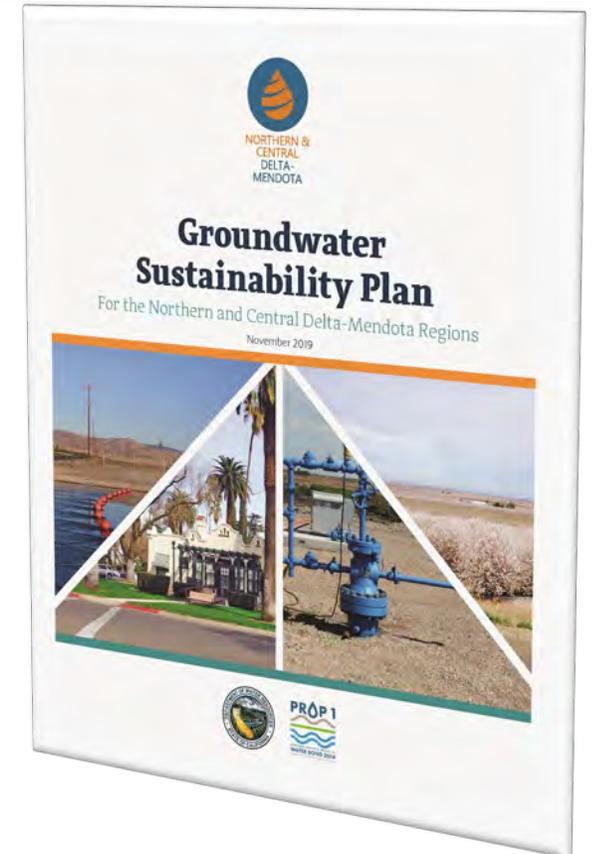


ADJACENT SUBBASINS SELECTED MTs BASED ON HISTORICAL LOW WATER LEVELS

Delta Mendota Subbasin (Northern & Central Regions GSP)

Chronic Lowering of Groundwater Levels

- Undesirable results occur when significant and unreasonable change in water levels impacts beneficial users of groundwater
 - Examples include dewatering of shallow wells, higher pumping costs, need to modify wells for groundwater access
- MTs
 - Historical low water level for Upper Aquifer
 - 95% of historical low water level for Lower Aquifer



PRESENTATION OUTLINE

- Chronic Lowering of Groundwater Levels
 - Undesirable Results definition
 - Approach to Minimum Thresholds
- ➔ ■ DRAFT Sustainability Goal for the Modesto Subbasin
- Preliminary List of Projects and Management Actions



DRAFT SUSTAINABILITY GOAL FOR THE MODESTO SUBBASIN

The Sustainability Goal of the Modesto Subbasin GSP is to provide a sustainable groundwater supply for the local community and for the economic vitality of the region. Groundwater levels, storage volume, and quality will be actively managed by the STRGBA GSA to:

- Operate the Subbasin within its sustainable yield to support beneficial uses including municipal, agricultural, industrial, and environmental;
- Maintain a reliable, accessible, and high-quality groundwater supply, especially during droughts;
- Manage groundwater levels such that beneficial uses of interconnected surface water are not adversely impacted by groundwater extractions;
- Optimize conjunctive management of local surface water and groundwater resources;
- Avoid adverse impacts from future potential land subsidence associated with groundwater level declines;
- Cooperate and coordinate with GSAs in neighboring subbasins to avoid undesirable results along the shared Subbasin boundaries.

This goal will be achieved over the 20-year implementation period through a robust monitoring program and a series of projects and management actions that involve groundwater recharge, in lieu surface water use, conservation, stormwater management, and other strategies to be developed and modified over time through adaptive management.

PRESENTATION OUTLINE

- Chronic Lowering of Groundwater Levels
 - Undesirable Results definition
 - Approach to Minimum Thresholds
- DRAFT Sustainability Goal for the Modesto Subbasin
- ➔ ■ Preliminary List of Projects and Management Actions



PROJECTS AND MANAGEMENT ACTIONS

- Develop working table with projects and management actions
- Update project details, as available
 - Data request for project details needed for sustainability modeling
 - Additional information required for the GSP (e.g., permitting, legal authority, benefits, costs, triggers/criteria for implementation, start and completion dates)
- List of management actions for consideration
 - Review and consider management actions in adjacent subbasins for application to Modesto Subbasin
 - Consider actions to complement monitoring and compliance with SMC
 - Fill data gaps identified in the GSP

Initial Conceptual Project List – Modesto Subbasin

DRAFT

Conjunctive Use / In Lieu Pumping

City of Modesto Conjunctive Use

Continue the water purchase agreement between Modesto Irrigation District (MID) and the City of Modesto to meet urban demands.

Provision of Excess Surface Water to Urban Suppliers

Provide surface water, when available, to local urban suppliers to supplement groundwater for urban demand.

Provision of Excess Surface Water to Non-District Eastern Areas

Provide surface water, when available, to non-district areas to offset groundwater pumping for agricultural supply.

Recharge / Land Use

Groundwater Recharge in Eastern Non-District Areas

Develop groundwater recharge projects to store excess surface water locally for future extraction and agricultural use.

On-Farm Recharge

Work with landowners to identify favorable crops, recharge volumes, and timing for enhancing local recharge on active agricultural lands.

Preservation of Lands Favorable for Future Groundwater Recharge Projects

Identify and preserve, to the extent practicable, lands within the Modesto Subbasin that contain favorable attributes for enhancing recharge.

Urban Banking Projects

Identify areas for conservation of stormwater, recycled water, or local surface water for groundwater recharge and recovery to supplement urban supplies.

OID Recharge to Benefit City of Oakdale

Increase groundwater recharge within Oakdale Irrigation District (OID) for the benefit of urban pumping by the City of Oakdale.

Management Actions from adjacent subbasins for consideration in Modesto Subbasin

Examples from Northern and Central Delta-Mendota Regions GSP

Administrative Actions

DRAFT

Drought Contingency Planning in Urban Areas	Municipal member agencies reliant on groundwater will develop and implement drought contingency planning in urban areas to prepare and respond to water shortages during drought.
Lower Aquifer Pumping Rules to Mitigate Potential Future Subsidence	Entities extracting groundwater from the Lower Aquifer will be required to comply with sustainable management criteria developed for GSP monitoring locations in the Lower Aquifer.
Increasing GSA Input on Well Permits	Counties would develop and/or change internal policies associated with well permitting to include consultation with GSAs regarding proposed well locations. <i>(already incorporated in the Modesto Subbasin with the County's Discretionary Well Permitting and Management Program)</i>
Groundwater Extraction Fee	Collect a groundwater extraction fee from well owners; use revenue to fund projects.

Reduce Groundwater Pumping

Maximize Use of Other Water Supplies	Use surface water, recycled water, storm water, and tile drain water to offset groundwater deficits, when possible.
Develop Program to Incentivize Use of Surface Water (Reduce GW Demand)	Programs to incentivize the use of surface water over groundwater may include groundwater extraction fees, a groundwater accounting framework, and rules that allow growers to sell 'groundwater credits.'
City of Patterson Reduced Groundwater Use	Two water supply portfolios in the City of Patterson's 2018 Water Master Plan could be implemented. <i>(Review current Water Plans in Modesto Subbasin for potential Management Actions)</i>
Rotational Fallowing of Crop Lands	Reduce agricultural water use by fallowing crop lands and rotate fallowed lands to reduce economic impacts to any one area. Consider recharging surplus water to the lands when fallowed.

Data Collection

Fill Data Gaps	As funding permits, efforts will be made to fill the identified data gaps to refine water budgets, improve the monitoring network, and provide additional data for setting/refining MTs and/or MOs.
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NEXT STEPS

- Select additional Sustainable Management Criteria
 - Interconnected Surface Water
 - Land Subsidence
- Complete Sustainable Yield Modeling
- Update/develop List of Projects and Management Actions



QUESTIONS

