



Stanislaus & Tuolumne Rivers Groundwater Basin Association
Groundwater Sustainability Agency
1231 11th Street | Modesto, CA 95354
Email: strgba@mid.org

STRGBA GSA AGENDA
September 8, 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. 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 8/11/21 Meeting Minutes [[Action Item](#)]
Who: Eric Thorburn, Committee
Expected Outcome: Approval
4. Topic: Budget and Schedule Update
Who: Gordon Enas, Committee
Expected Outcome: Discussion
5. Topic: Public Outreach Update
Who: Samantha Wookey, Committee
Expected Outcome: Discussion
6. Topic: GSP Update
Who: Todd Groundwater, Committee
Expected Outcome: Discussion
7. Next Meeting
October 13, 2021 at 1:30 p.m. via Zoom
8. Items too late for the agenda



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MEETING MINUTES

August 11, 2021 (2:30 p.m. – 3:00 p.m.)

The meeting was called to order at 2:32 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): Chad Tienken
City of Waterford: Mike Pitcock
Stanislaus County: Walt Ward
Oakdale Irrigation District: Eric Thorburn
City of Modesto: Miguel Alvarez
City of Oakdale: Michael Renfrow
City of Riverbank: Michael Riddell

Other Attendees:

Phyllis Stanin, Todd Groundwater	Samantha Wookey, MID
Liz Elliott, Todd Groundwater	Gordon Enas, MID
Bill Hudelson	Dennis Wittchow
Stacy Henderson	Louie Brichetto
Hilary Reinhard	John Mauterer
Dana Ferreira	Ryan Hackett
Mike Moradian	John Mensinger
Valerie Kincaid	Emily Sheldon
Stu Gilman	Amanda Peisch-Derby
Ryan Honnette	Jacob DeBoer

2. Business from the Public

N/A



3. Approve 7/14/21 Meeting Minutes [Action item]

Tienken moved, 2nd by Riddell, to approve 7/14/21 meeting minutes. Motion carried.

4. Reduction of Groundwater In Storage Resolution [Action item]

Tienken moved, 2nd by Ward to approve Reduction of Groundwater in Storage Resolution. Motion carried.

5. Land Subsidence Resolution [Action item]

Renfrow moved, 2nd by Riddell to approve Land Subsidence Resolution.

6. Budget and Schedule Update

Enas reported that Todd Groundwater has expended approximately 64% of the budget and 85% of the time scheduled through June 30, 2021.

Ward asked if DWR has been processing reimbursements. Alvarez stated City of Modesto has received 9 reimbursements from DWR and he will be sending out an update to the member agencies.

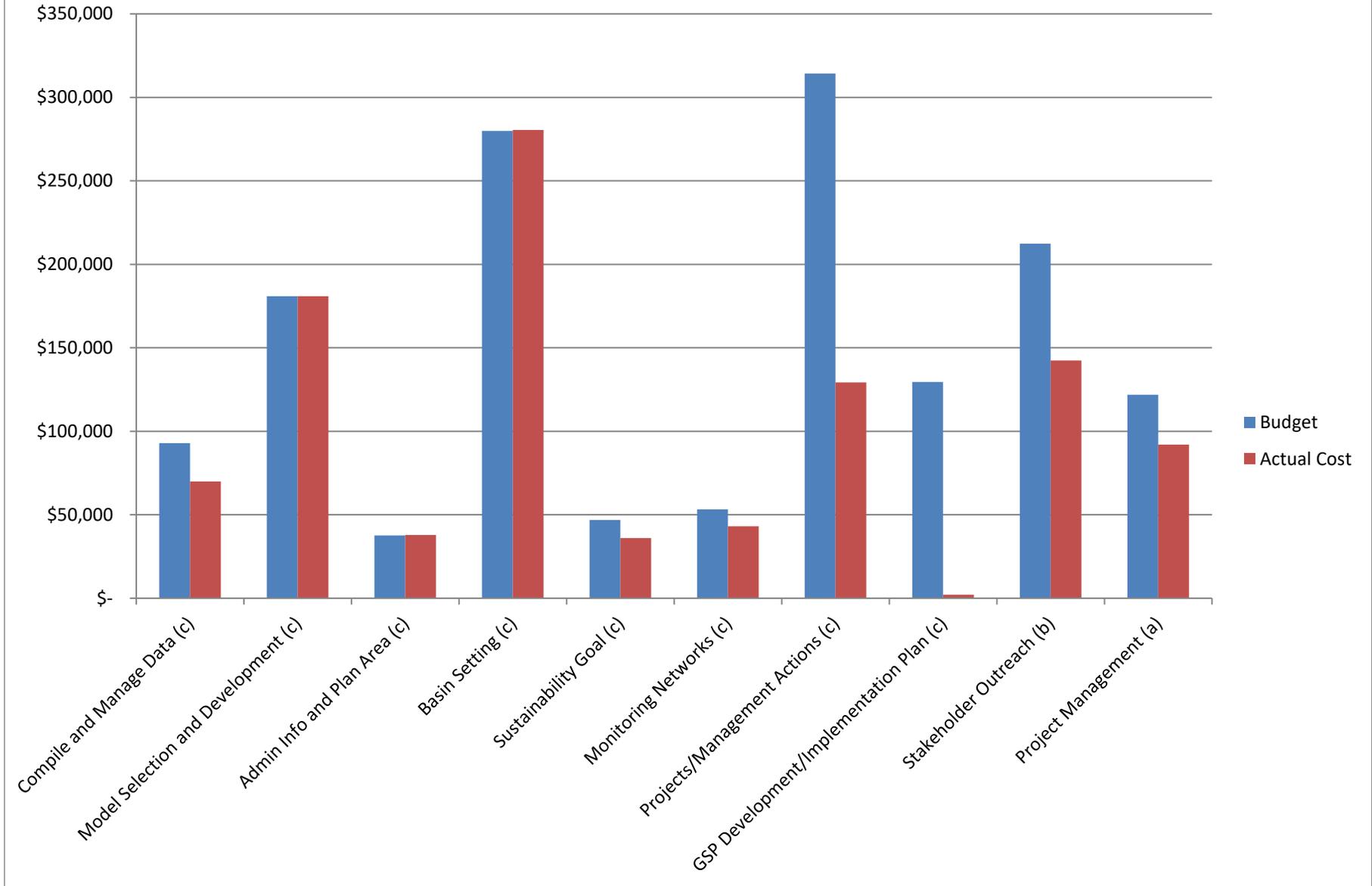
7. Next meeting

September 8, 2021 at 1:30 p.m. via Zoom

8. Items too late for the agenda

Ward stated that eight agencies (7 from STRGBA GSA and the Tuolumne GSA) will have to take independent action adopting the GSP once finalized. Riddell asked when will the draft GSP will be completed? Stanin responded that they are targeting the end of October 2021.

Cost To Prepare GSP (September 2018 - July 2021)





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TECHNICAL ADVISORY COMMITTEE AGENDA

September 8, 2021 (2:00 p.m. – 3:00 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

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



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3. Topic: Approve 8/11/21 Meeting Minutes [[Action Item](#)]
Who: Eric Thorburn, Committee
Expected Outcome: Approval
4. Topic: GSP Projects and Sustainable Yield Analysis — Urban Scenario
Who: Woodard & Curran, Committee
Expected Outcome: Discussion
5. Topic: Monitoring Networks and Sustainable Management Criteria
Who: Todd Groundwater, Committee
Expected Outcome: Discussion
6. Next Meeting
Special TAC meeting September 22, 2021 at 1:30 p.m. via Zoom
7. Items too late for the agenda



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TECHNICAL ADVISORY COMMITTEE MEETING MINUTES

August 11, 2021 (1:30 p.m. – 2:30 p.m.)

The meeting was called to order at 1:31 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): Chad Tienken
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Mike Moradian	John Mensinger
Valerie Kincaid	Emily Sheldon
Stu Gilman	Amanda Peisch-Derby
Ryan Honnette	Jacob DeBoer

2. Business from the Public

N/A



3. Approve 7/28/21 Minutes [Action item]

Tienken moved, 2nd by Renfrow, to approve 7/28/21 meeting minutes. Motion carried.

4. Monitoring Well Network

Stanin first presented on the Monitoring Well Network. The presentation can be accessed at the STRGBA GSA website: www.strgba.org.

- Thorburn asked can you explain what indicator are we looking for in the monitoring wells pertaining to land subsidence? Stanin stated with chronic lowering of water levels the minimum threshold has been set to the historical low through 2020. By managing water levels and preventing future decline, we are allowed by DWR to use water levels as a proxy for land subsidence. There is also additional monitoring for land subsidence.
- Reinhard asked what criteria was used to select monitoring wells for interconnected surface water? Stanin responded that wells that have shallow screens and are located relatively close to the rivers, best represent the water table. Reinhard followed up by asking why not use InSAR data to monitor subsidence? Stanin stated there isn't an opportunity to see future trends by relying on InSAR data. However, by incorporating the MT's for chronic lowering of water levels we have the opportunity to ensure we are not inadvertently triggering land subsidence.

5. Recap on Reduction of Groundwater In Storage/Land Subsidence

Stanin followed up with a presentation on Reduction of Groundwater In Storage and Land Subsidence.

- Renfrow asked if there will be a process to mitigate issues such as chronic lowering and MT's? Stanin said sustainable management criteria gives us the best guess on how to avoid undesirable results. We will also move forward with projects and management actions to support the Sustainable Yield. While the groundwater model only assumes decreasing demand as the means to achieve Sustainable Yield, we will need to replace demand reduction with actual projects and management actions. We will also be able to reevaluate our plan in 5 years and adjust the MTs and MOs at that time, if needed
- Kincaid asked if we are going to develop a relationship between lowering of groundwater levels and a corresponding reduction in groundwater in storage, since we will need to prove that one SI is a proxy for the other? Stanin responded that the reduction of groundwater in storage is tied to a balanced basin-wide Sustainable Yield of 267,000 acre-feet. If we keep water levels from declining, we will be able to



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- maintain the SY of 267,000 acre-feet. Kincaid responded that we need to carefully tie MTs for water levels to the volume of reduction in storage in order to use as a proxy.
- Renfrow asked about the accuracy of the InSAR data? Stanin responded that DWR uses licensed land surveyors to evaluate the accuracy.
- Next steps: Stanin finished the presentation with a summary of the next steps in the GSP development process.

6. Next Meeting

September 8, 2021 at 1:30 p.m. via Zoom

7. Items too late for the agenda

N/A



SUSTAINABLE YIELD – MODESTO SUBBASIN

TECHNICAL ADVISORY COMMITTEE (TAC)

SEPTEMBER 08, 2021



AGENDA: PROJECTS & MANAGEMENT ACTIONS

- Introduction
 - SGMA Regulations
 - Review of existing and proposed projects
 - Explanation of modeling scenarios
- Scenario I: Urban Sustainability Projects
 - Modeling Approach & Assumptions
 - Model Results: Water Budgets
 - Model Results: Groundwater Hydrographs
- Next Steps

SGMA REGULATIONS

- GSP Regulation 354.44 (a):

“Each Plan shall include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.”

- GSP Regulation 354.44 (b)(1):

“A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent.”

PROJECTS AND MANAGEMENT ACTIONS

- **Group 1: On-Going Management Actions**
 - Projects that are in place to manage Subbasin's groundwater system
- **Group 2: Planned Projects and Management Actions**
 - Generally, readily implementable
 - Some still in the planning stages of development
- **Group 3: Supplemental Projects and/or Actions**
 - Conceptual projects for potential consideration subject to feasibility
 - Additional projects previously identified in various planning documents

MODESTO GSP - GROUP I & II PROJECTS

#	Urban Projects	Project Proponent	Group	Scenario I	Scenario II	Scenario III
1	Municipal Conservation Projects	City of Modesto	1	X	X	X
2	Storm Drain Cross Connection Removal Project	City of Modesto	2	X	X	X
3	Surface Water Supply Project	City of Waterford	2	X	X	X
In-lieu Supply or Recharge Projects						
4	MID to Out-of-District Lands In-lieu and Direct Recharge Project	Non-District East	2		X	X
5	OID to Out-of-District Lands In-lieu and Direct Recharge Project	Non-District East	2		X	X
Flood Mitigation Projects						
6	Tuolumne River Flood Mitigation Direct Recharge Project	Stanislaus County	2		X	X
7	Dry Creek Flood Mitigation Direct Recharge Project	Stanislaus County	2		X	X
Post-PMA Sustainable Yield Analysis						
	Demand Reduction					X

NOTE: The *Growth Realization of Surface Water Treatment Plant Phase II* – is a Group I PMA and is already simulated as part of the projected conditions baseline

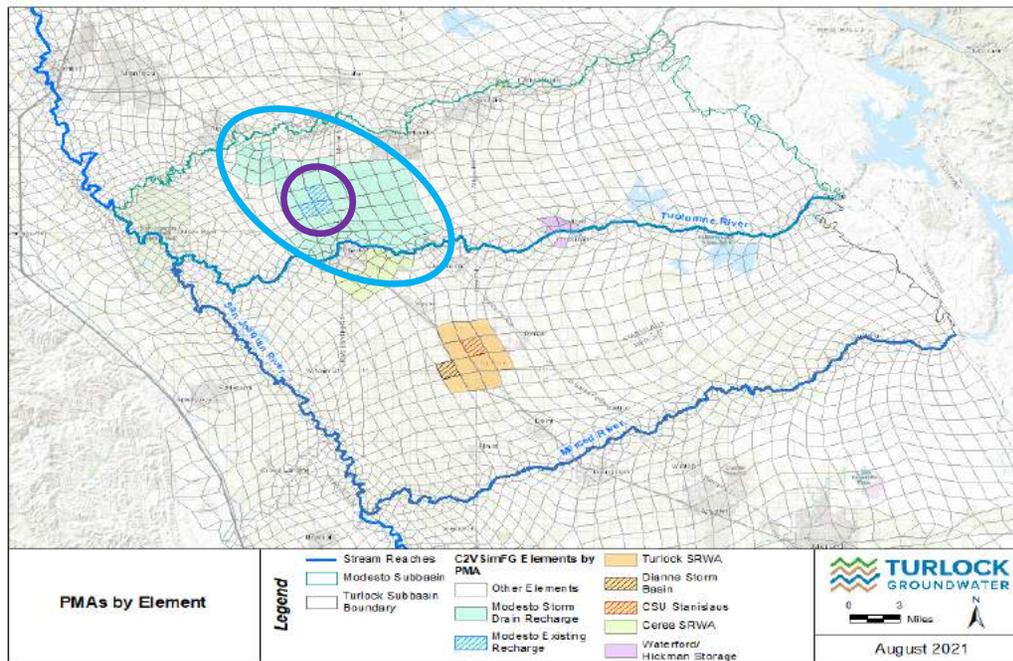
Preliminary Draft; Subject To Revision

MODESTO GSP - GROUP III PROJECTS

Conceptual Projects

- Municipal Group III Projects
 - MOD - detention basin standards specifications update
 - OAK - OID surface water to OAK for non-potable irrigation (parks)
- Agricultural Group III Projects
 - NDE - Stanislaus River flood mitigation, direct recharge project
 - NDE - Additional recharge ponds constructed in NDE areas
 - ALL - Preservation of lands favorable for future recharge projects

MODELING APPROACH & ASSUMPTIONS



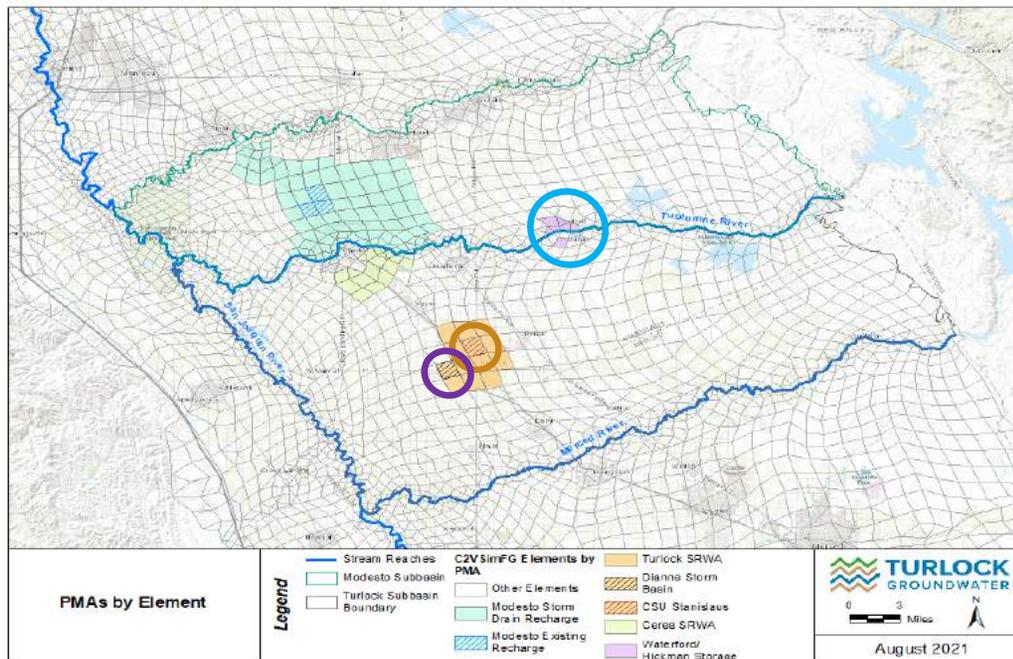
MOD Conservation

- Reduced PCWU in MOD
- Reduction up to ~50 GPCD

Storm Drain Cross Connection Removal

- Recharge facilities in MOD
- Up to 248 AFY

MODELING APPROACH & ASSUMPTIONS



Waterford/Hickman

- 900 AFY of surface water from Modesto ID
- Reduced municipal pumping

Dianne Storm Basin

- Recharge runoff from TUR
- Assumed 22.5 AFY Nov-Apr

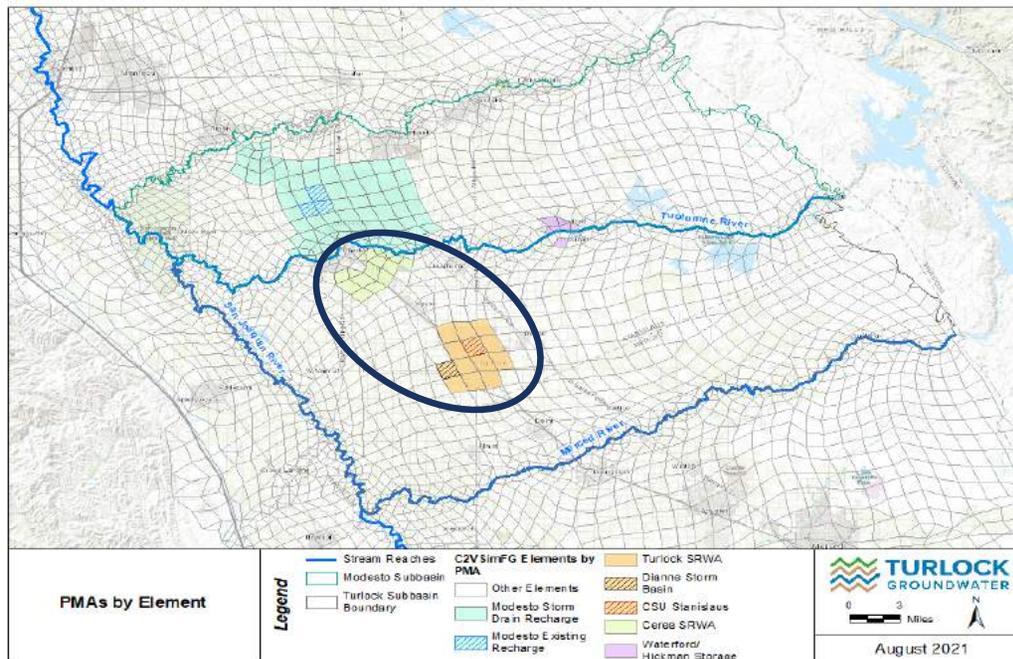
Stan State Recharge

- Recharge runoff from CSUS
- Assumed 460 AFY Nov-Apr

MODELING APPROACH & ASSUMPTIONS

SRWA

- Up to 30,000 AFY if surface water to Turlock and Ceres
 - Yr. 1-7 0 AFY
 - Yr. 8-10 Up to 16,800 AFY
 - Yr. 11-19 Up to 20,160 AFY
 - Yr. 20-50 Up to 30,000 AFY
- Cities to provide offset groundwater to TID in dry/critical years
- Refined Tuolumne River operations



Preliminary Draft; Subject To Revision

LAND & WATER USE BUDGET

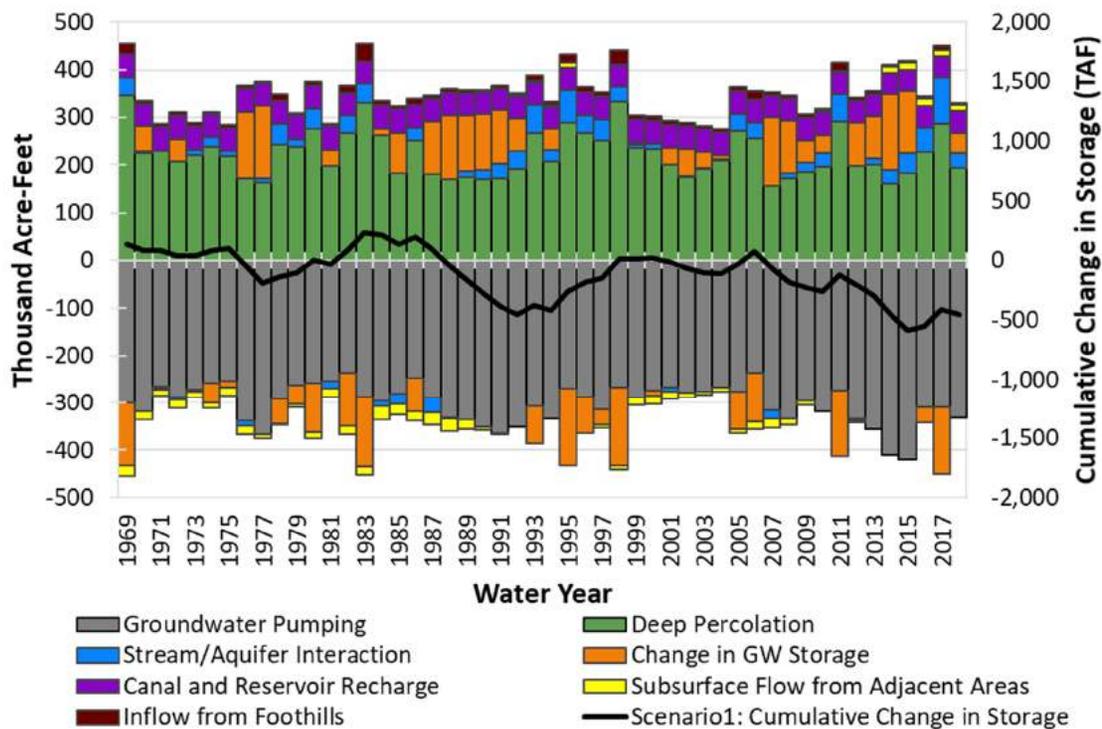
	Baseline	Scenario I	Difference (S1-BL)
Urban Area	132,000	132,000	0
Urban Demand	111,000	98,100	-12,900
Urban Surface Water	51,100	51,800	700
Urban Pumping	59,900	46,300	-13,400

Scenario - Baseline

■ Urban Water Use

- Reduced urban demand
 - Modesto
- Increased surface water
 - Turlock, Ceres, Waterford, Hickman
- Reduced groundwater
 - Modesto, Turlock, Ceres, Waterford, Hickman

GROUNDWATER BUDGET



Scenario – Baseline (Years 1-50)

Inflow

■ Stream Depletion	-5,700 AFY
■ Percolation	-4,800 AFY
■ Recharge	+200 AFY

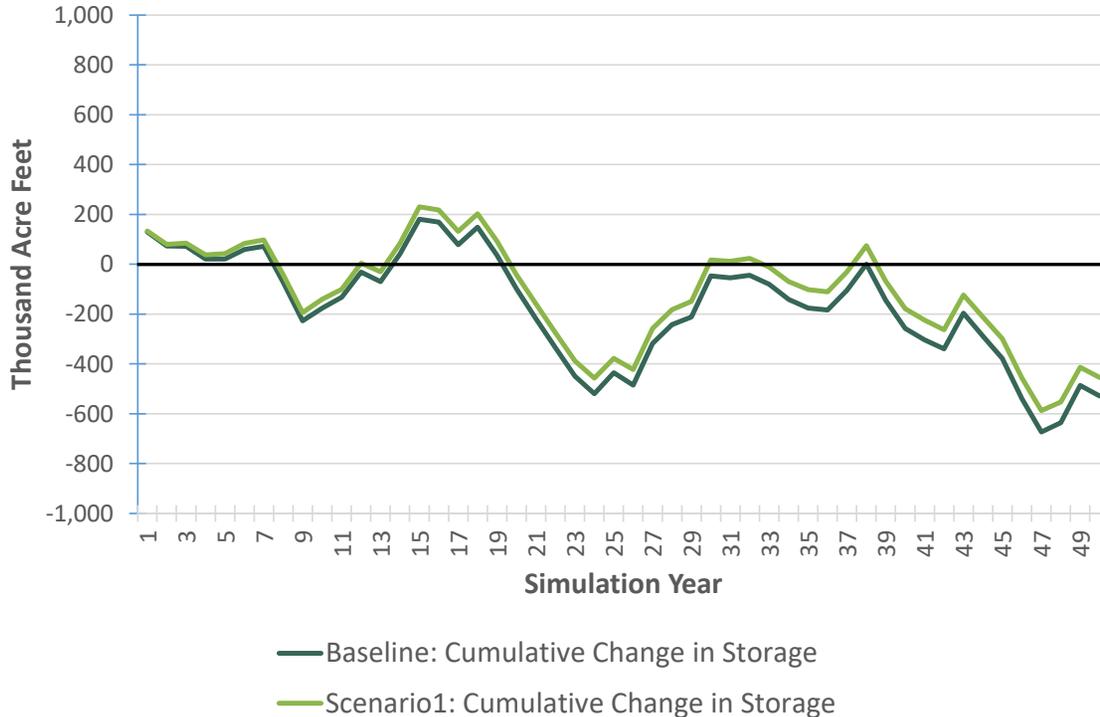
Outflow

■ Pumping	-13,400 AFY
■ Subsurface Flow	+1,600 AFY

Storage Lost

■ Δ Storage	-1,500 AFY
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GROUNDWATER BUDGET



Scenario – Baseline (Years 1-50)

Inflow

■ Stream Depletion	-5,700 AFY
■ Percolation	-4,800 AFY
■ Recharge	+200 AFY

Outflow

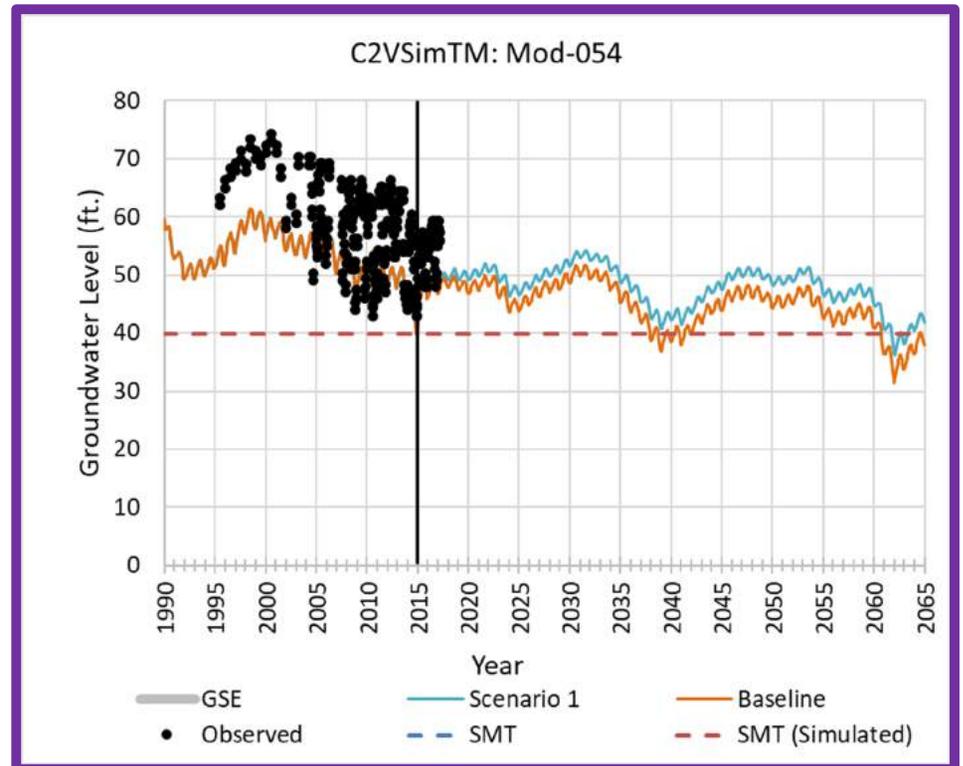
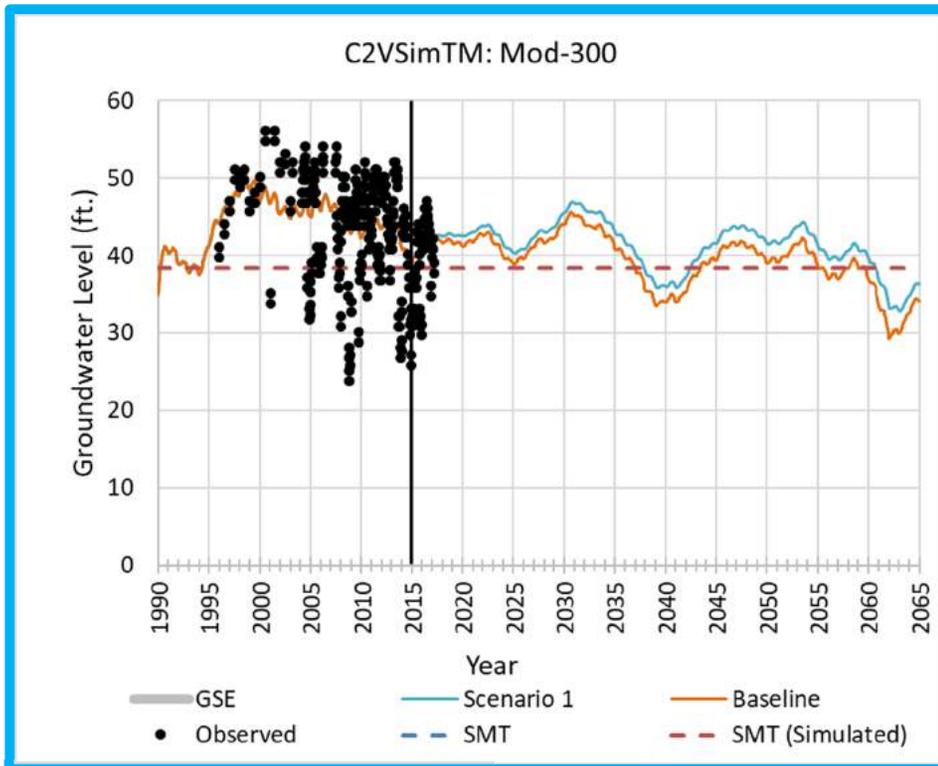
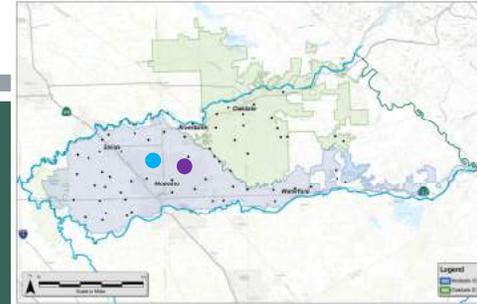
■ Pumping	-13,400 AFY
■ Subsurface Flow	+1,600 AFY

Storage Lost

■ Δ Storage	-1,500 AFY
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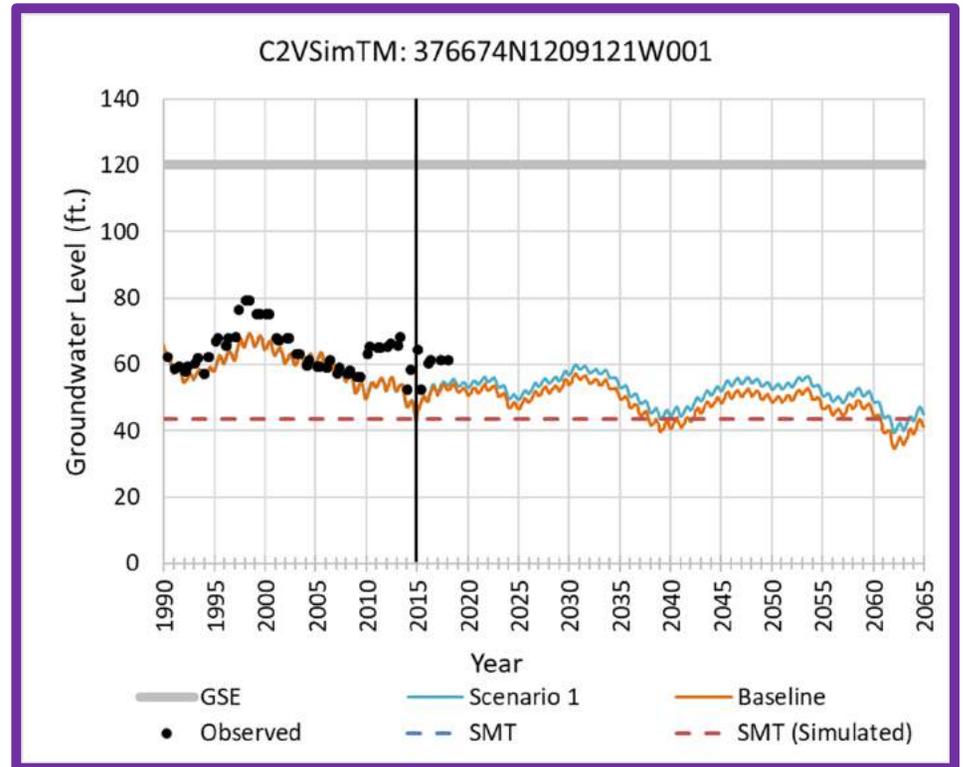
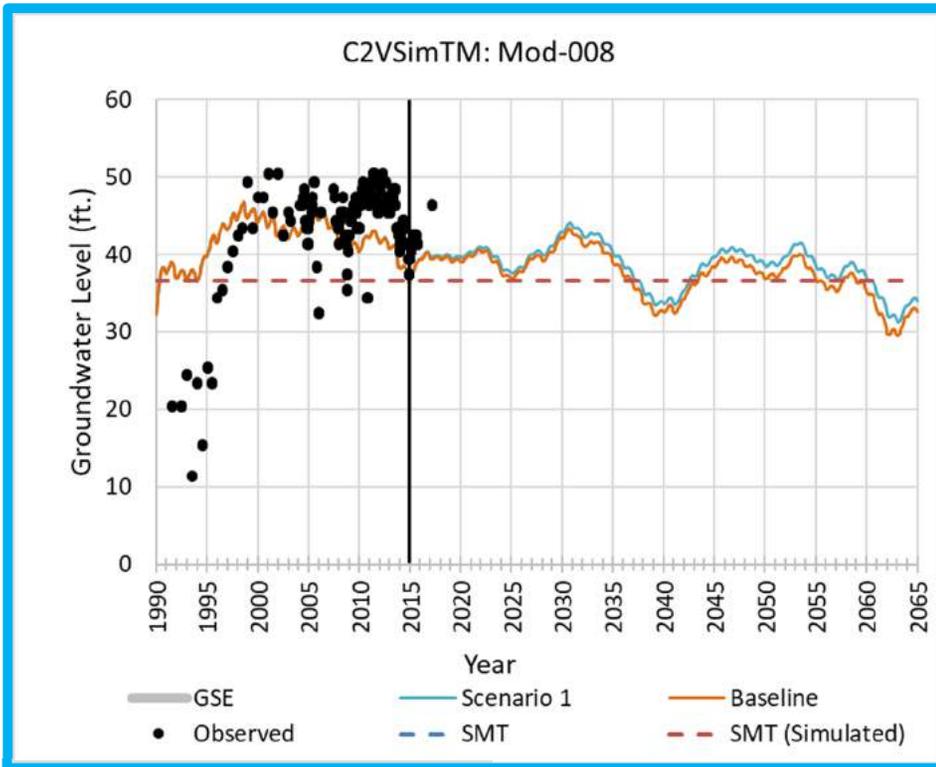
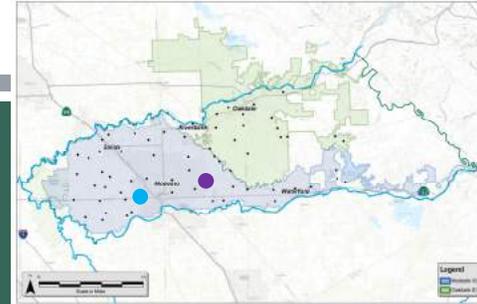
Preliminary Draft; Subject To Revision

SUSTAINABLE YIELD HYDROGRAPHS



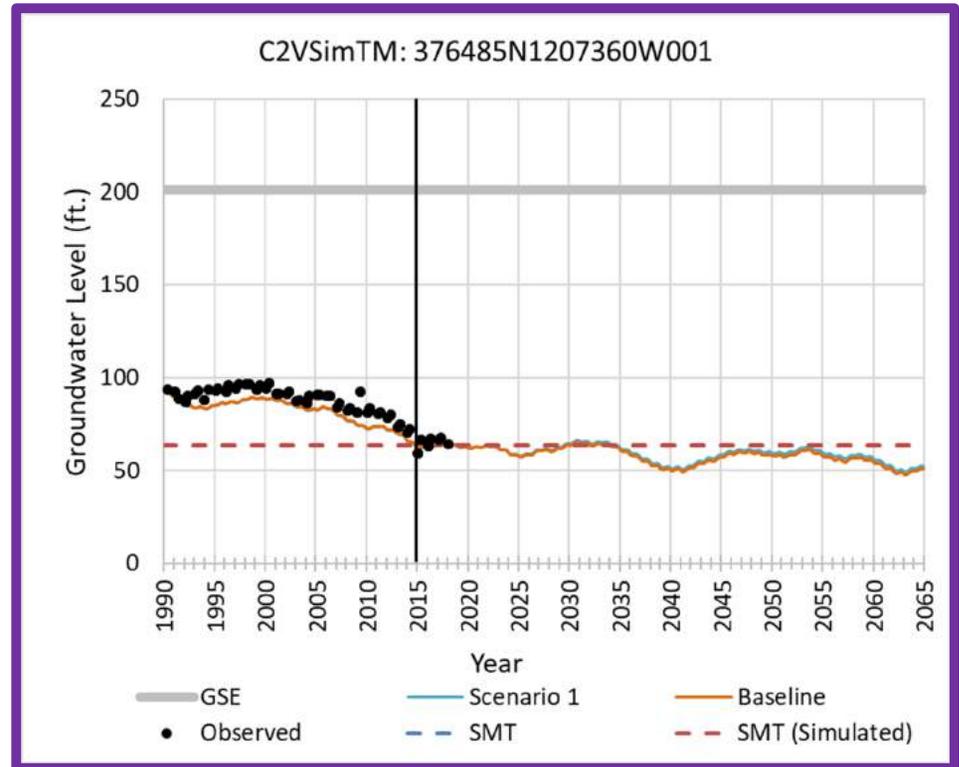
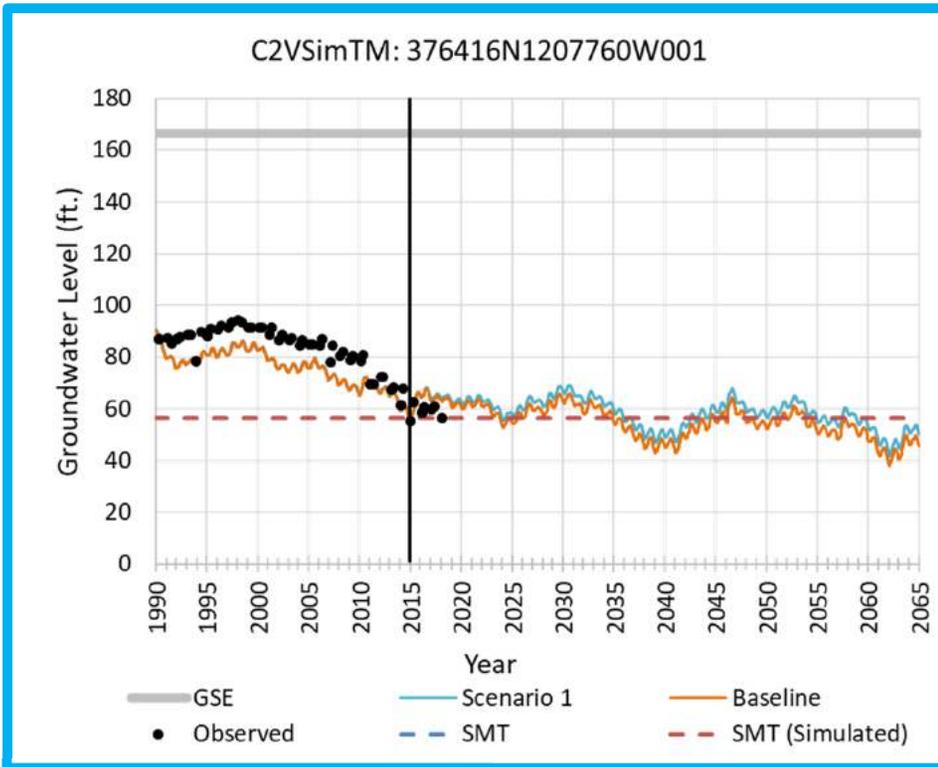
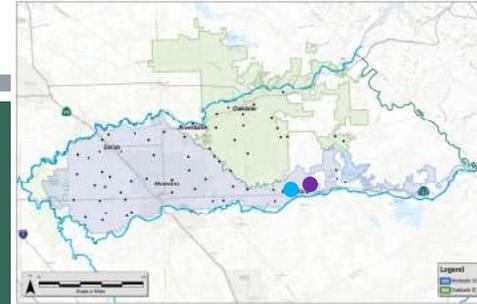
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NEXT STEPS

- **Projects & Management Actions**
 - Scenario I Complete any refinements per TAC recommendation
 - Scenario II Begin development of agricultural-based projects
 - Scenario III Once Scenario II is approved by the planning and TAC committees, we will revisit the Subbasin's sustainable yield with projects in place

QUESTIONS?





GSP MONITORING NETWORKS AND SUSTAINABLE MANAGEMENT CRITERIA

TECHNICAL ADVISORY COMMITTEE (TAC) MEETING

September 8, 2021

TODD
GROUNDWATER

MODESTO SUBBASIN FINAL DRAFT GSP MONITORING WELL NETWORK



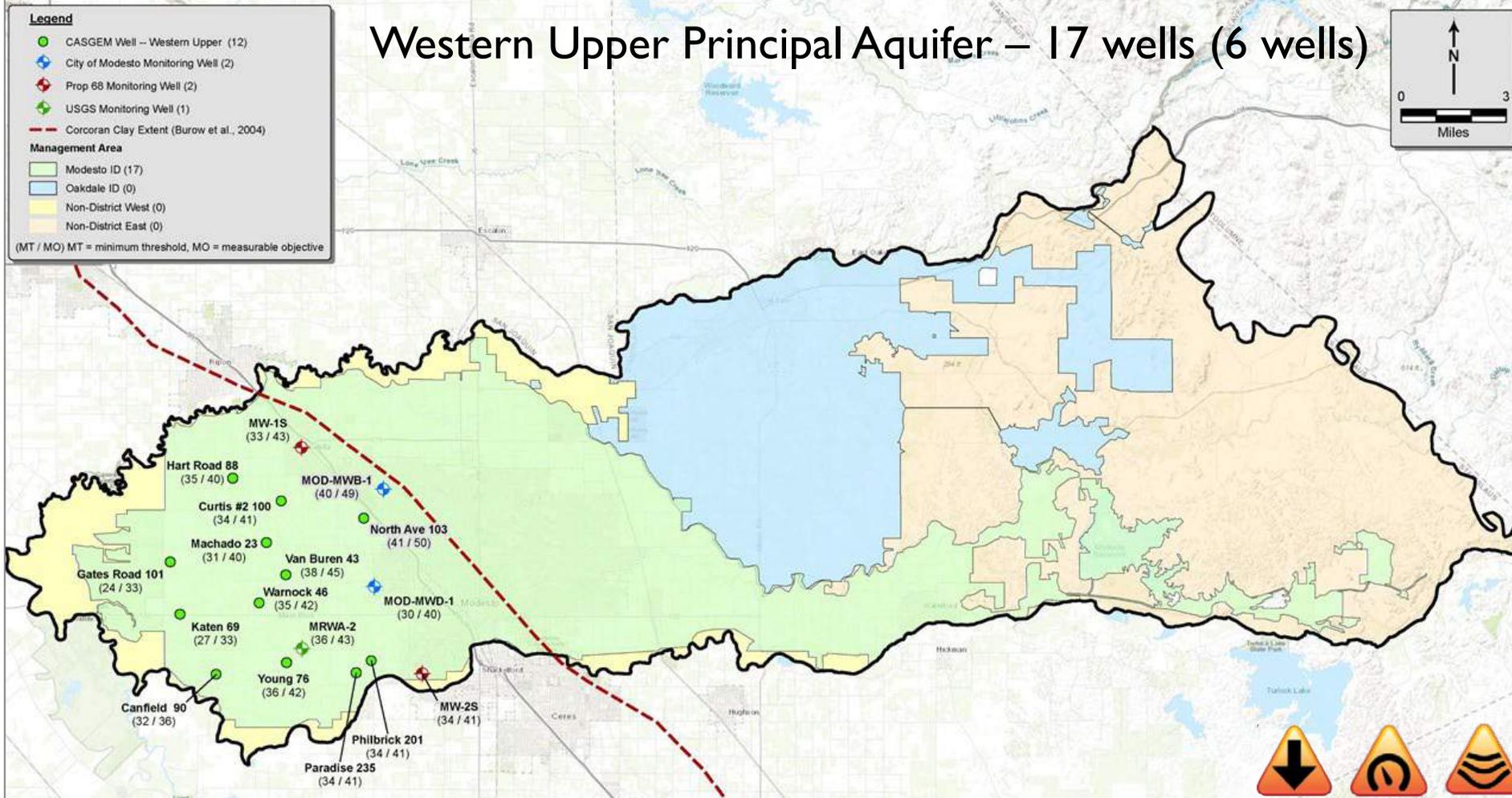
Well Source / Existing Monitoring Program	Western Principal Aquifers	Eastern Principal Aquifer	Total # of Wells	Existing or New Well?
CASGEM	12	25	37	Existing
City of Modesto	4	2	6	Existing
U.S. Geologic Survey (USGS)	2	2	4	Existing
STRGBA New Wells	4	10	14	New – Installed in 2021

- 61 Network Wells
 - 47 existing wells
 - 14 new wells
- URs, MTs, MOs, and Interim Milestones (IMs) set for each
- Review MT exceedances and IMs today

CHRONIC LOWERING OF GROUNDWATER LEVELS, REDUCTION OF GROUNDWATER IN STORAGE AND LAND SUBSIDENCE



Western Upper Principal Aquifer – 17 wells (6 wells)



Proposed Approach:

An UR occurs when the MT is exceeded:

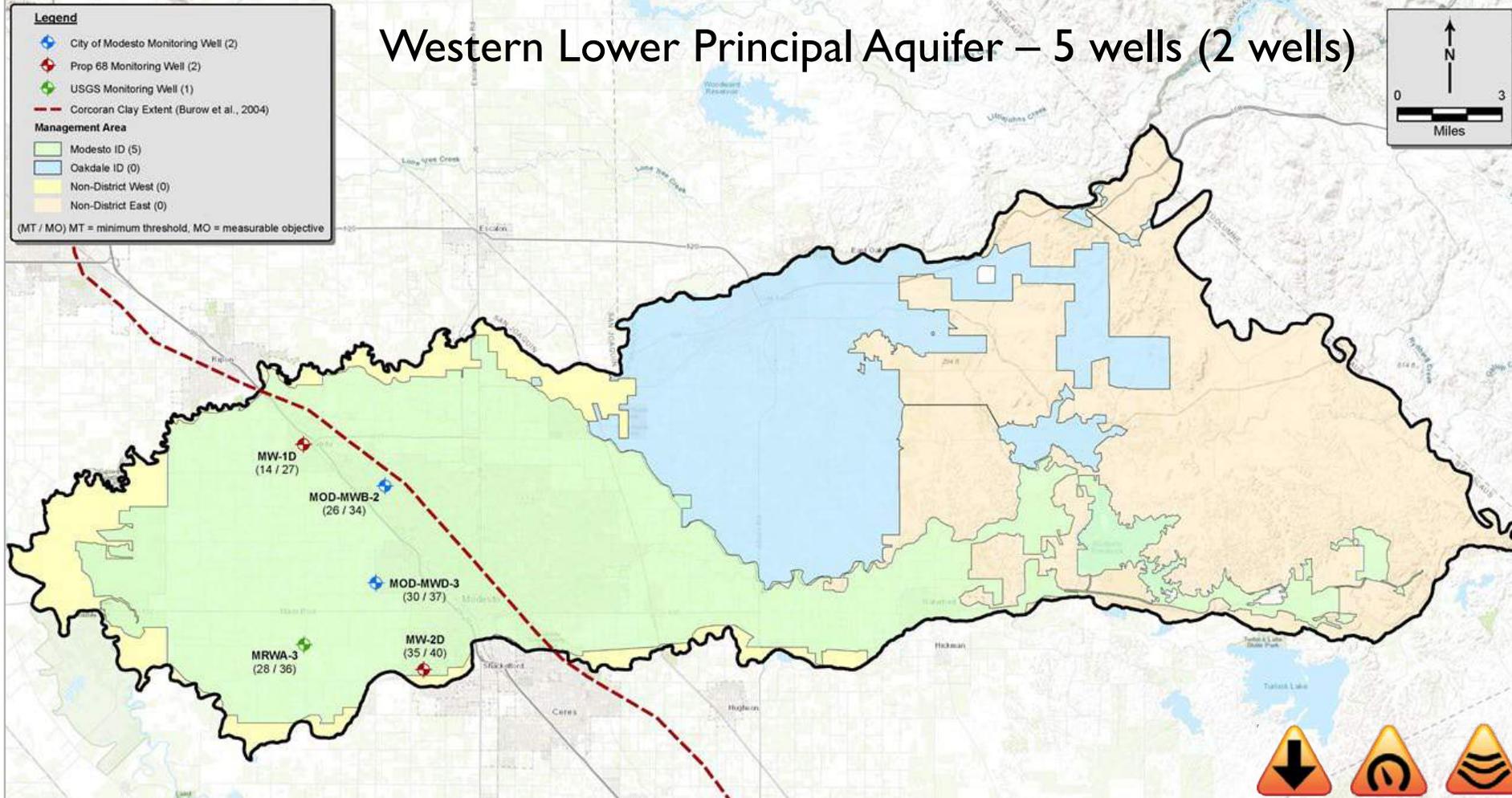
- By 33% of the wells in a Principal Aquifer
- For three (3) consecutive Fall monitoring events



CHRONIC LOWERING OF GROUNDWATER LEVELS, REDUCTION OF GROUNDWATER IN STORAGE AND LAND SUBSIDENCE



Western Lower Principal Aquifer – 5 wells (2 wells)



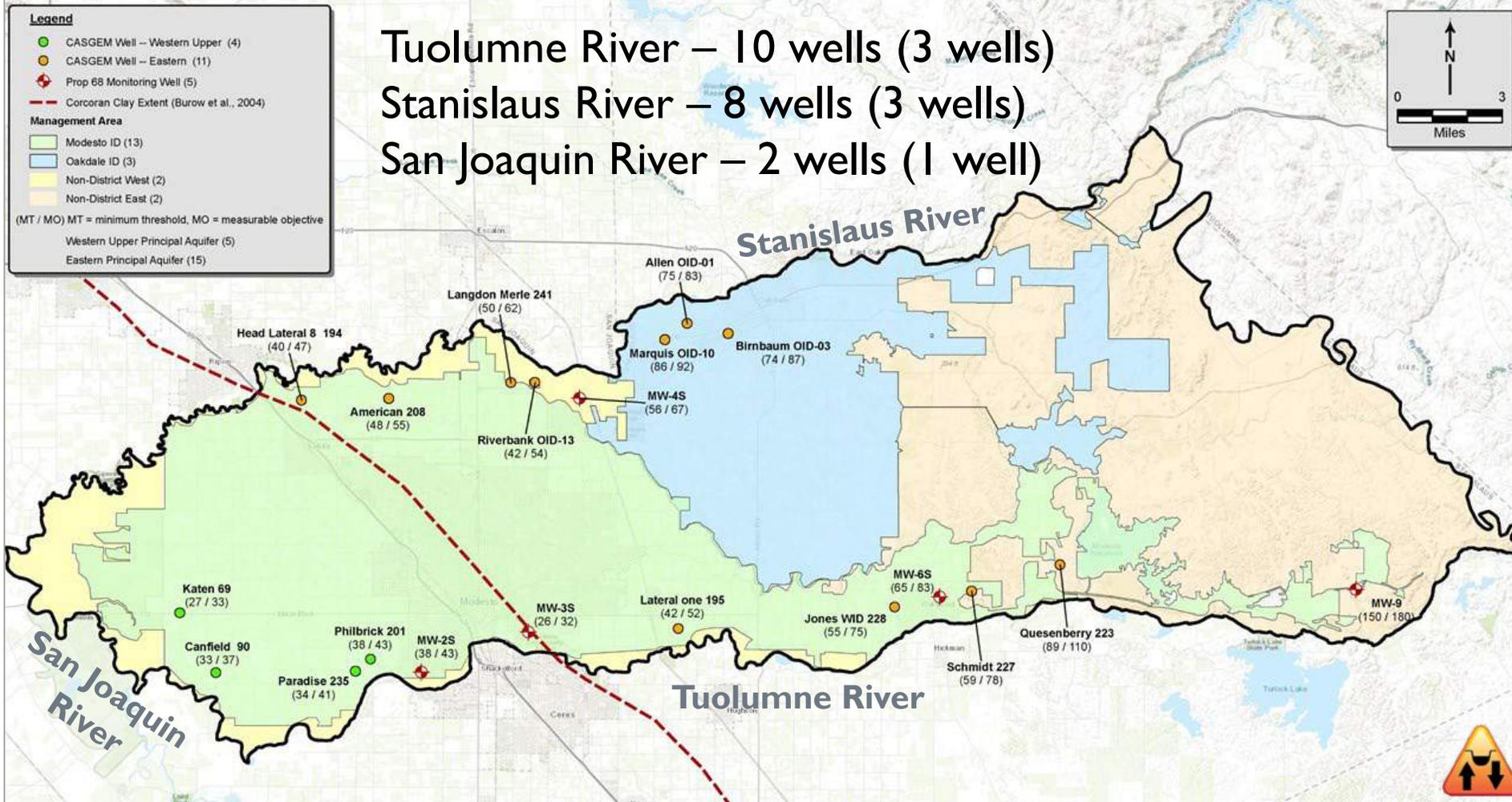
Proposed Approach:

An UR occurs when the MT is exceeded:

- By 33% of the wells in a Principal Aquifer
- For three (3) consecutive Fall monitoring events



INTERCONNECTED SURFACE WATER



Tuolumne River – 10 wells (3 wells)
 Stanislaus River – 8 wells (3 wells)
 San Joaquin River – 2 wells (1 well)

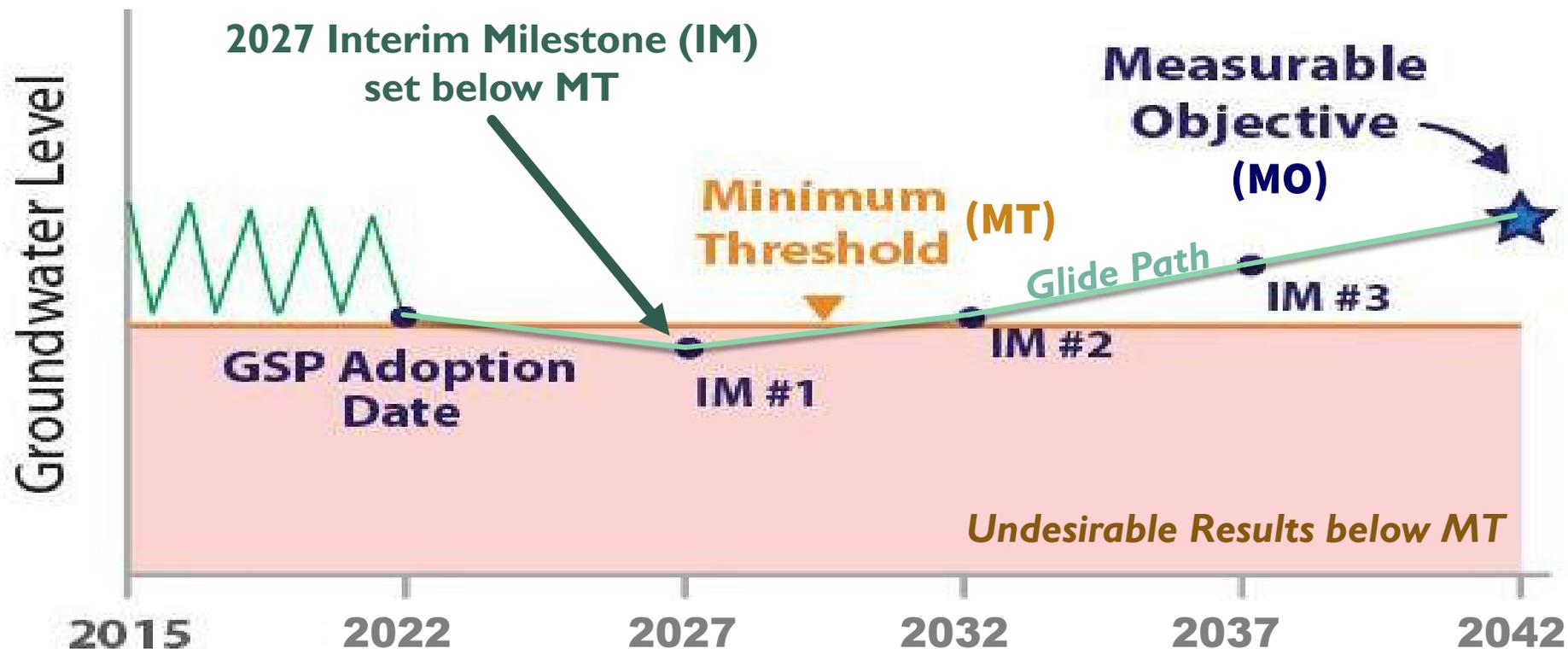
Proposed Approach:

An UR occurs if the MT is exceeded by:

- 33% of wells on either the Tuolumne river, or 33% on the Stanislaus river, or 50% of wells on the San Joaquin river
- For three (3) consecutive Fall events

INTERIM MILESTONES GSP IMPLEMENTATION PERIOD

- Water levels allowed to fall below the MT in the initial implementation period if Interim Milestones (IM) anticipate a “*glide path*” toward sustainability

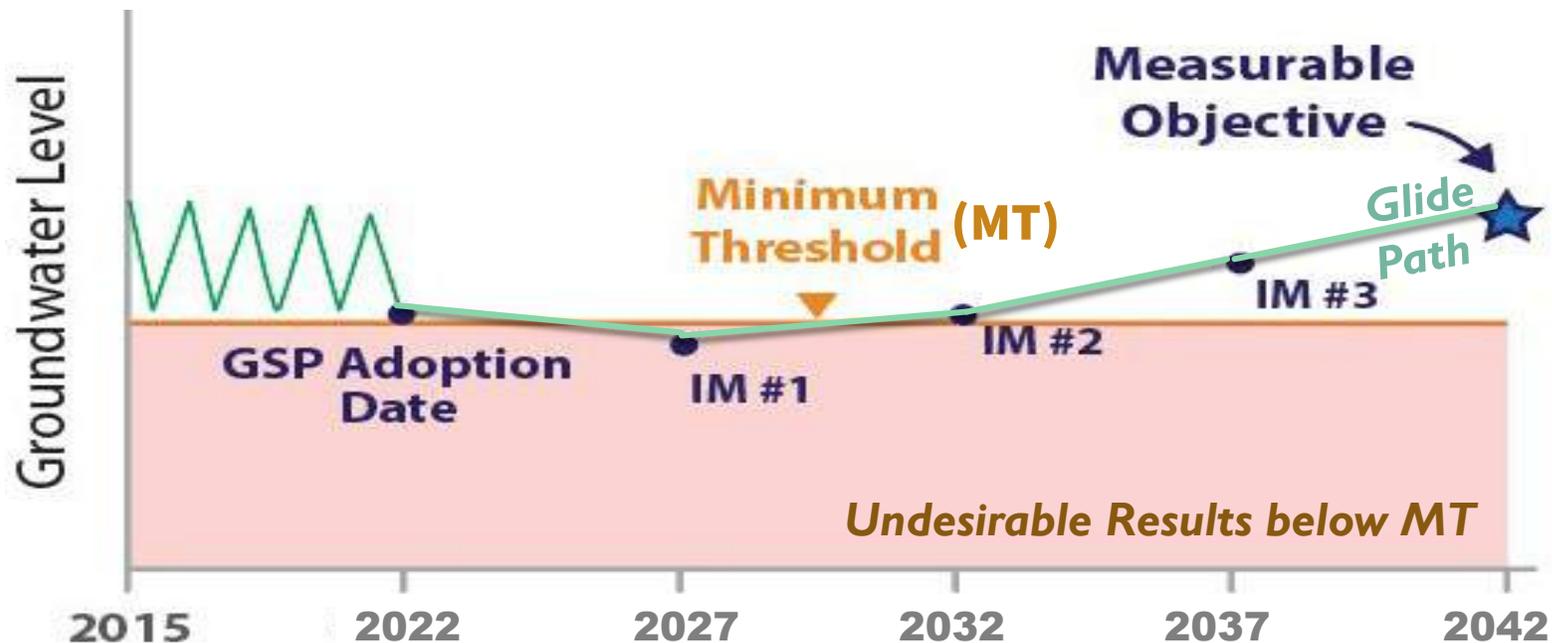


INTERIM MILESTONES – PROPOSED METHODOLOGY

- Developed 2027 Interim Milestones (IMs) for CASGEM wells in OID and Non-District East Management Areas (9 wells)
- Recognize that water levels in these areas may continue to decline while projects are brought online
- Assume a continuing rate of decline through the first five years of GSP implementation
- Added the total groundwater elevation decline from Fall 2013 to Fall 2020 (7 years) to the Fall 2020 measurement to define an IM
- Average decline of about 13 feet in 7 of the wells; about 36 feet in 2 Non-District East wells

INTERIM MILESTONES – PROPOSED APPROACH

- IM #1 – 2027: water level declines, if needed, while projects coming online
- IM #2 – 2032: set at the MT
- IM #3 – 2037: one-half distance between the MT and the MO



NEXT STEPS

- Finalize all sustainable management criteria
- Finalize analysis of Projects
- Develop draft Management Actions
- Release additional GSP chapters – *Water Budget* chapter coming next, followed by *Sustainable Management Criteria* and *Monitoring Networks*

