



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: strgba@mid.org

## TECHNICAL ADVISORY COMMITTEE AGENDA

**July 14, 2021 (1:30 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

### **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

#### **On your desktop/iPad or tablet/laptop:**

1. To join the webinar, click the link published in the Agenda for the current meeting about 5 minutes before webinar begins.
2. Follow the on-screen instructions to install and/or launch the Zoom application.
3. If prompted, enter the Webinar ID published in the Agenda.
4. All public attendees will enter the meeting muted.
5. If you wish to speak under Business from the Public, or after the Chairman calls for Public Comment, click on the “Raise Hand” button to request to speak.

#### **On your phone:**

1. To join the meeting by phone, call the number published in the Agenda for the meeting.
2. Enter the Webinar ID published in the Agenda, then hit the # symbol.
3. All public attendees will enter the meeting muted.
4. If you wish to speak under Business from the Public, or after the Chairman calls for Public Comment, press \*9 on your phone to “Raise Hand” or simply request to speak.
  - a. Wait until the last four digits of your phone number is called by the Host.



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: [strgba@mid.org](mailto:strgba@mid.org)

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 6/23/21 Special TAC Meeting Minutes [[Action Items](#)]  
Who: Eric Thorburn, Committee  
Expected Outcome: Approval
  
4. Topic: Sustainable Management Criteria and Groundwater Dependent Ecosystems  
Who: Todd Groundwater, Committee  
Expected Outcome: Discussion
  
5. Next Meeting  
August 11, 2021 at 2 p.m. (following STRGBA GSA monthly meeting) via Zoom
  
6. Items too late for the agenda



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: strgba@mid.org

**SPECIAL TECHNICAL ADVISORY COMMITTEE  
MEETING MINUTES**

**June 23, 2021 (10:00 a.m. – 12:00 p.m.)**

The meeting was called to order at 10:02 a.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  
City of Modesto: Miguel Alvarez  
Stanislaus County: Walt Ward  
Oakdale Irrigation District: Eric Thorburn  
City of Oakdale: Michael Renfrow

**Other Attendees:**

Alexis Stevens, Somach, Simmons & Dunn  
John Mauterer, MID  
Amanda Peisch-Derby, DWR  
Hilary Reinhard, Provost & Pritchard  
Gordon Enas, MID  
Janelle Chapdelaine  
Steve Knell, OID  
Samantha Wookey, MID  
Ali Taghavi, Woodard & Curran  
John Mensinger  
Phyllis Stanin, Todd Groundwater  
John Davids

Emily Sheldon  
Liz Elliott, Todd Groundwater  
Matthew Toste  
Rick Rogers  
John Brichetto

**2. Business from the Public**

N/A



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354

Phone: (209) 526-7564 | Fax: (209) 526-7352

Email: [strgba@mid.org](mailto:strgba@mid.org)

**3. Approve 6/9/21 Minutes [Action item]**

Renfrow moved, 2<sup>nd</sup> by Tienken, to approve 6/9/21 meeting minutes. Motion carried.

**4. Sustainable Yield Scenario**

Taghavi began by presenting results from the Sustainable Yield Scenario analysis. The presentation can be accessed at the STRGBA GSA website: [www.strgba.org](http://www.strgba.org).

Mensingher asked if the average urban pumping values reflect the drop in per capita use since meters were installed on homes? Taghavi responded that the model uses the most recent use data from the City of Modesto.

Mensingher stated that the Management Actions should include items that will help NDE pumpers to achieve sustainability. He also suggested that with the deep percolation numbers reflecting the current trend away from flood irrigation and toward drip irrigation, the Management Actions should encourage more flood irrigation.

Pitcock asked if he could get a list of projects proposed in the vicinity of Waterford?

Thorburn responded that specific project locations have not been developed yet.

Dauids cautioned that even though there is no planned demand reduction shown for Management Group 1 folks, including the cities, future projects which include deliveries of surface water shouldn't be eliminated from consideration.

Mensingher added that the Modesto Regional Water Treatment Plant has excess capacity and there might be an opportunity to provide surface water to Oakdale, Riverbank, and Waterford and should be considered as a management action

A participant asked, with regard to the sustainable yield hydrograph for wells in the NDE, is the 58% demand reduction controlled by the hydrographs in the central and western portion of the subbasin? Taghavi responded that the 58% reduction was based on total storage decline in the basin. Groundwater levels in the central and western portions of the basin are well above the Fall 2015 threshold, and need no significant reductions, however, more is needed on the eastside.

**5. Sustainable Management Criteria – Interconnected Surface Waters and Chronic Lowering of Water Levels**

Next, Stanin presented on Depletion of Interconnected Surface Waters.

How much of the projected surface water losses under the Baseline Scenario are due to overdraft in the NDE? Stanin responded that in general, the upper reaches of the Tuolumne River are more affected than the Stanislaus River, however we don't have depletion values by river reach.

Rogers stated that he is concerned with setting the SMC for streamflow depletions at the 2014 levels, at the height of the historic drought, since those conditions do not support steelhead and salmon. Do the MT's protect fish migration, spawning and rearing? Stanin responded that TID has looked into whether we are meeting minimum streamflow



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: [strgba@mid.org](mailto:strgba@mid.org)

requirements and is satisfied that the MT's along the Tuolumne River are protecting environmental uses.

**6. Next Meeting**

July 14, 2021 at 2 p.m. (following STRGBA GSA monthly meeting) via Zoom

**7. Items too late for the agenda**

N/A





# SUSTAINABLE MANAGEMENT CRITERIA & GROUNDWATER DEPENDENT ECOSYSTEMS (GDEs)

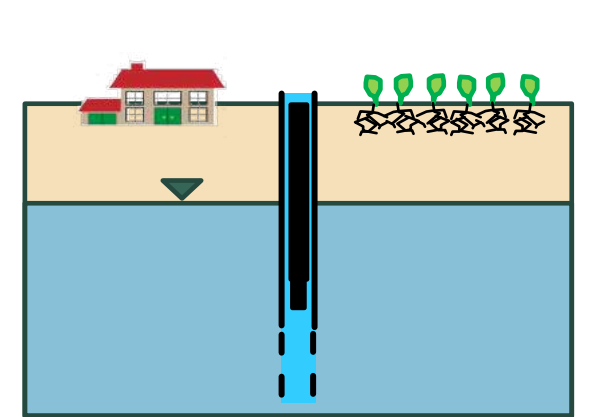
TECHNICAL ADVISORY COMMITTEE (TAC) PLANNING COMMITTEE

July 14, 2021

TODD  
GROUNDWATER

# PRESENTATION OUTLINE

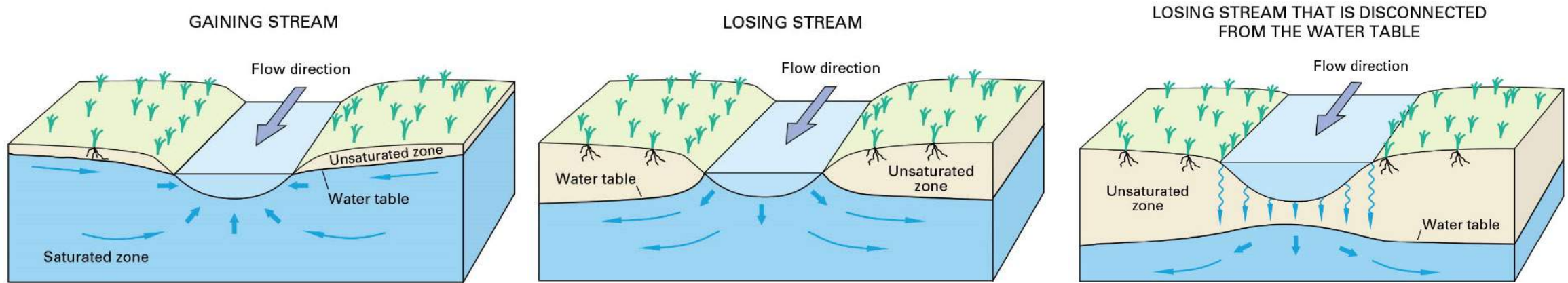
- ➔ ■ **Interconnected Surface Water** 
  - Potential Groundwater Dependent Ecosystems (GDEs)
  - Approach to undesirable results and minimum thresholds
- **Chronic Lowering of Water Levels** 
  - Review of analyses for sustainable management criteria
  - Approach to undesirable results and minimum thresholds







# INTERCONNECTED SURFACE WATER CONCEPTS AND MODESTO SUBBASIN BOUNDARIES



- Historical water budget: All three river boundaries – Tuolumne, San Joaquin, and Stanislaus rivers – were net gaining streams
- Projected future baseline: Tuolumne and Stanislaus rivers transition to net losing streams although remain connected to groundwater; San Joaquin is less affected
- Net losing stream benefits groundwater but has potential to impact surface water rights and ecosystems unless mitigated by projects and operational measures

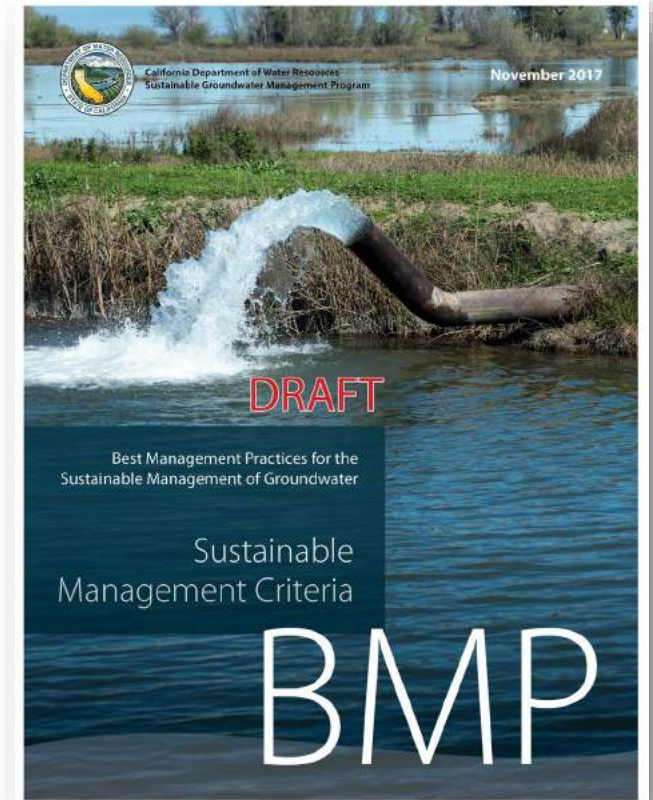




# INTERCONNECTED SURFACE WATER SUSTAINABLE MANAGEMENT CRITERIA – DWR BMP

DWR BMP provides a list of considerations when selecting a minimum threshold (MT) for this indicator:

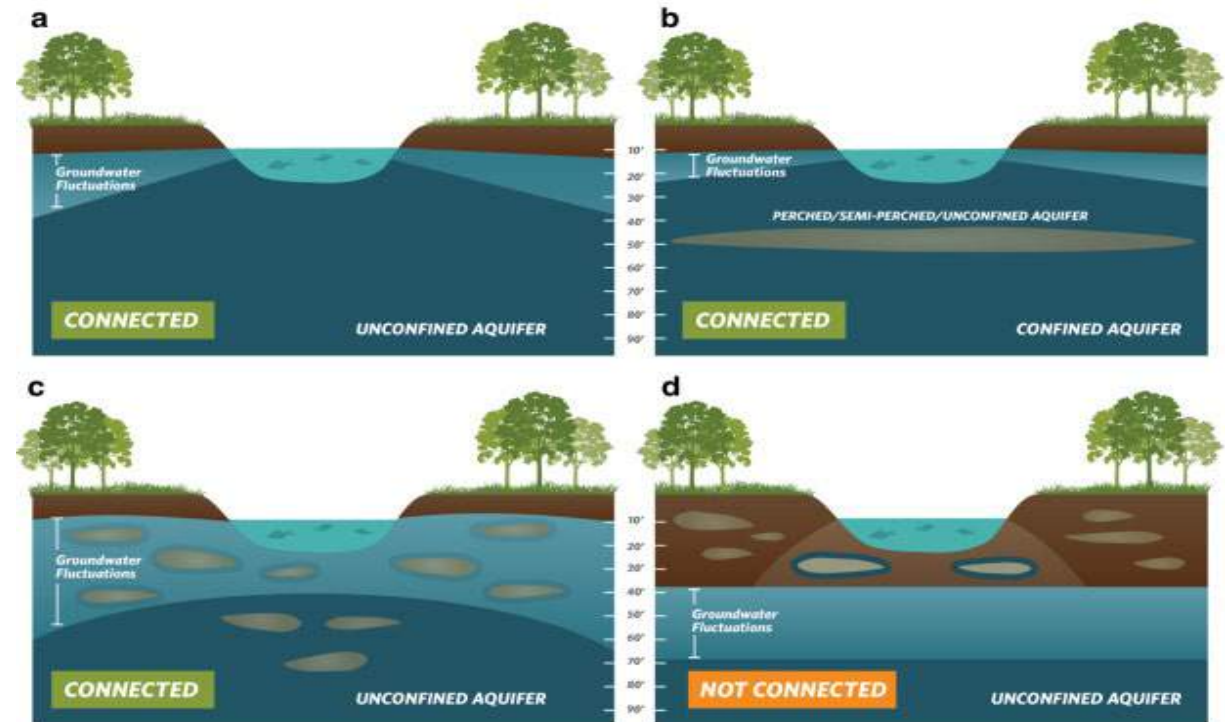
- Historical rates of stream depletion for water year types
- Uncertainty in streamflow depletion estimates from model
- Proximity of pumping along rivers
- Agricultural and municipal surface water demand
- State or federally mandated flow requirements
- Criteria from adjacent subbasins
- Impacts on Groundwater Dependent Ecosystems (GDEs)



# PRELIMINARY ASSESSMENT OF GROUNDWATER DEPENDENT ECOSYSTEMS (GDEs)

- Potential GDEs maps available after project/grant contracting had been completed
- Preliminary methodology and analysis of potential GDEs now
- Identify GDEs as a data gap; more comprehensive GDE study to be conducted after GSP submittal

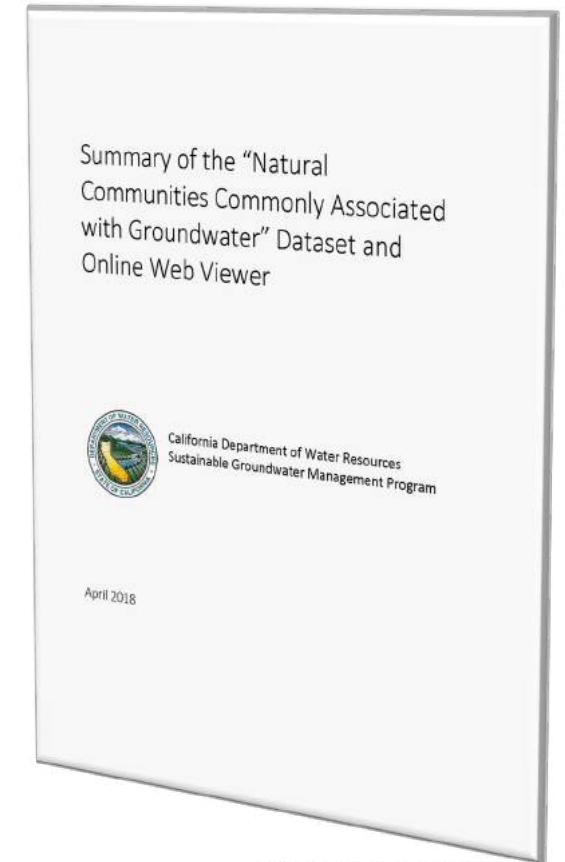
## Ecosystems Connected to and Supported by Groundwater



Source: The Nature Conservancy, Identifying GDEs Under SGMA, 2019

# GROUNDWATER DEPENDENT ECOSYSTEMS (GDEs) GSP REQUIREMENTS

- Regulations require identification of GDEs *utilizing data available from the Department, ... or best available information.* §354.16(g)
- DWR/TNC provided maps of potential GDEs April 2018 – “best available information” for the Modesto Subbasin
- NCCAG dataset available only after the GSP was underway;
  - About 1,800 separate polygons to assess in the Subbasin
  - Needed reasonable approach for preliminary assessment; eliminate polygons unlikely to be GDEs now
  - Conduct more technically-credible study after Jan 2022



# GROUNDWATER DEPENDENT ECOSYSTEMS

- What is a GDE?

Groundwater dependent ecosystems (GDEs) are plant and animal communities that solely or partially depend on the availability of groundwater to maintain their structure and function.

- How SGMA defines GDEs

“Ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface.” (CCR title 23, §351(m)). SGMA includes specific requirements for GSAs to identify the groundwater dependent ecosystems (GDEs) in their subbasins and consider impacts to GDEs in making groundwater management decisions.



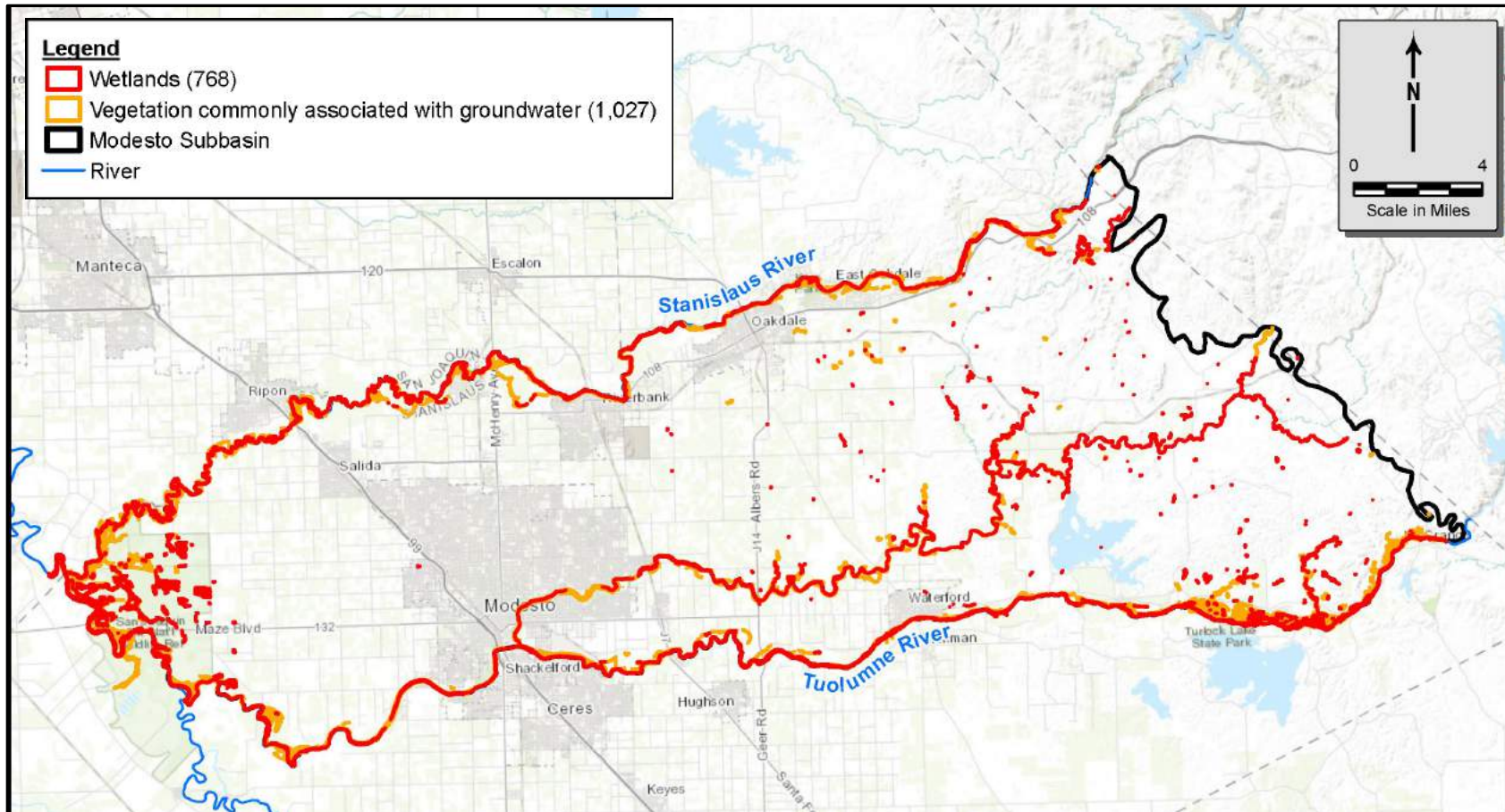
# PRELIMINARY ASSESSMENT OF MODESTO SUBBASIN GDEs

## METHODOLOGY

- Consider the TNC NCCAG polygons as potential GDEs for the Subbasin
- Compare polygons to depth to water under various hydrologic conditions:
  - Spring 1998 (wet period)
  - Fall 2015 (dry period)
  - Use more complete water level contours from C2VSim-TM model, which integrates Modesto Subbasin surface water features
- Assess which NCCAG polygons occur where depth to water exceeds 30 feet (reasonable maximum rooting depth), in accordance with TNC best practices



# POTENTIAL GDEs IN THE MODESTO SUBBASIN

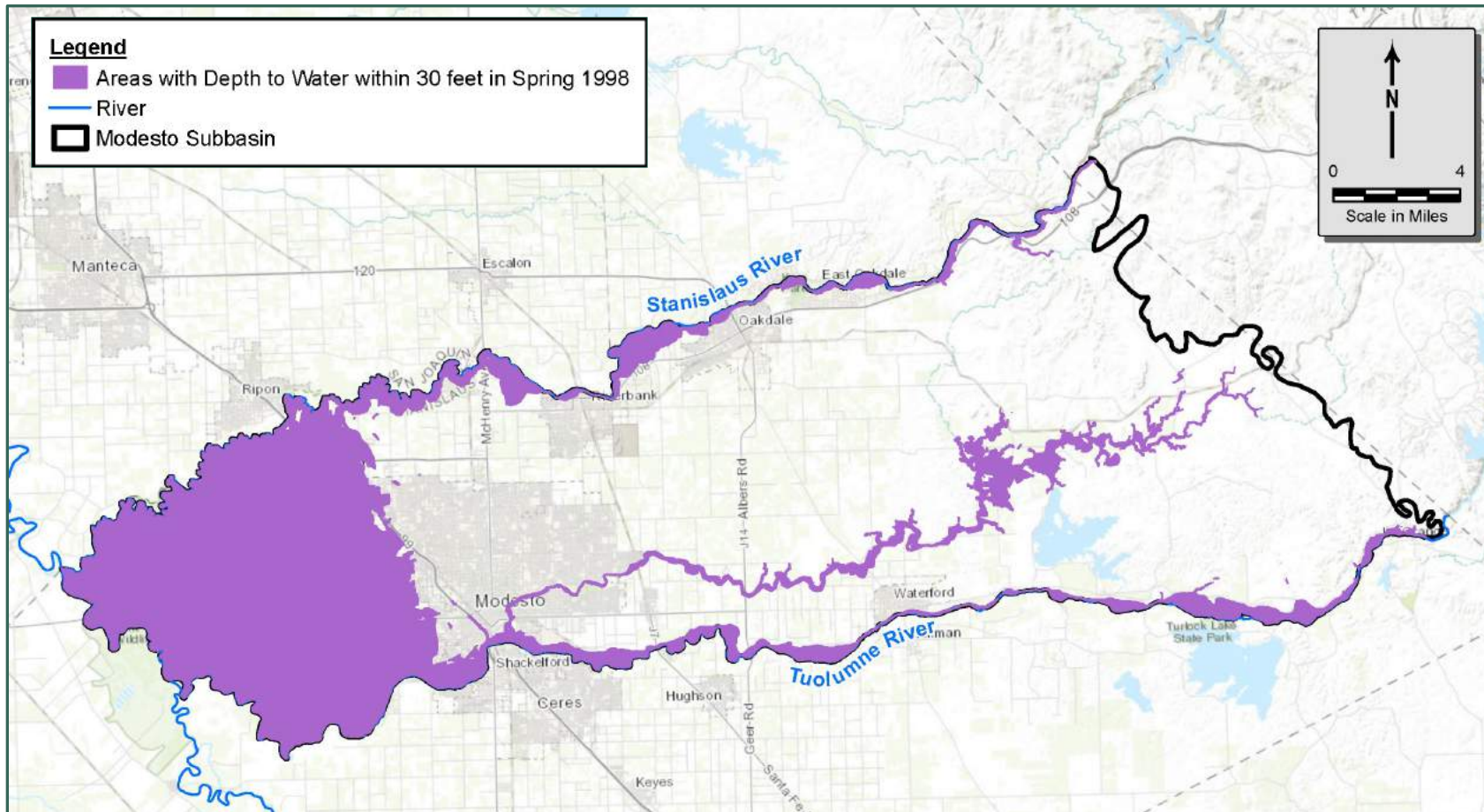


- *Natural Communities Commonly Associated with Groundwater* (NCCAG dataset)
- 1,795 polygons:
  - 768 Wetland
  - 1,027 Vegetative
- Vegetation presence does not necessarily indicate a GDE

Source: DWR Natural Communities Commonly Associated with Groundwater

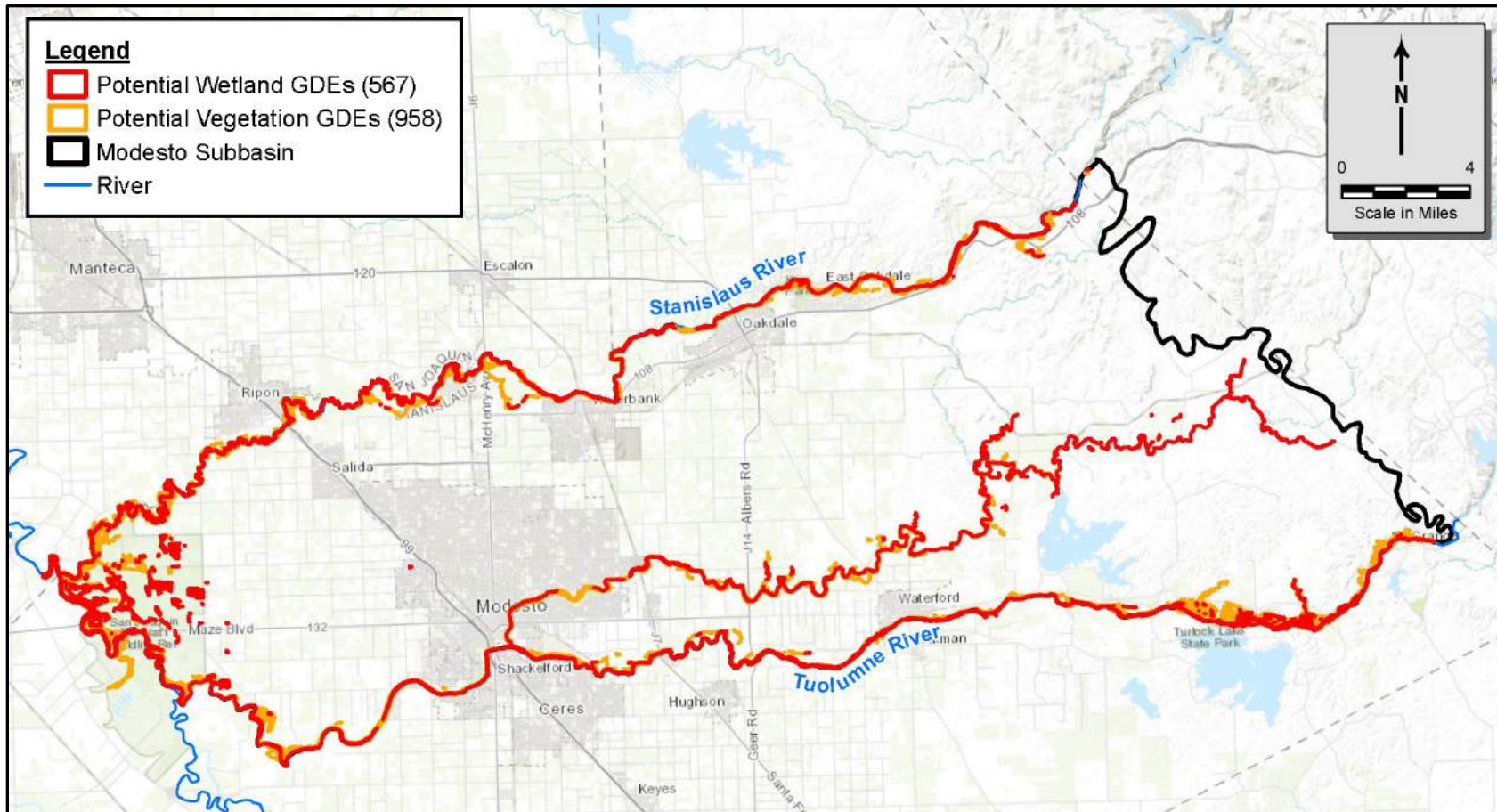


# AREAS WITH DEPTH TO WATER LESS THAN 30 FEET DURING WET PERIOD – SPRING 1998



- Depth to water (DTW) Spring 1998, based on model contours
- DTW within 30 feet:
  - Along river boundaries
  - Along Dry Creek
  - Western Subbasin
- These areas could support GDEs

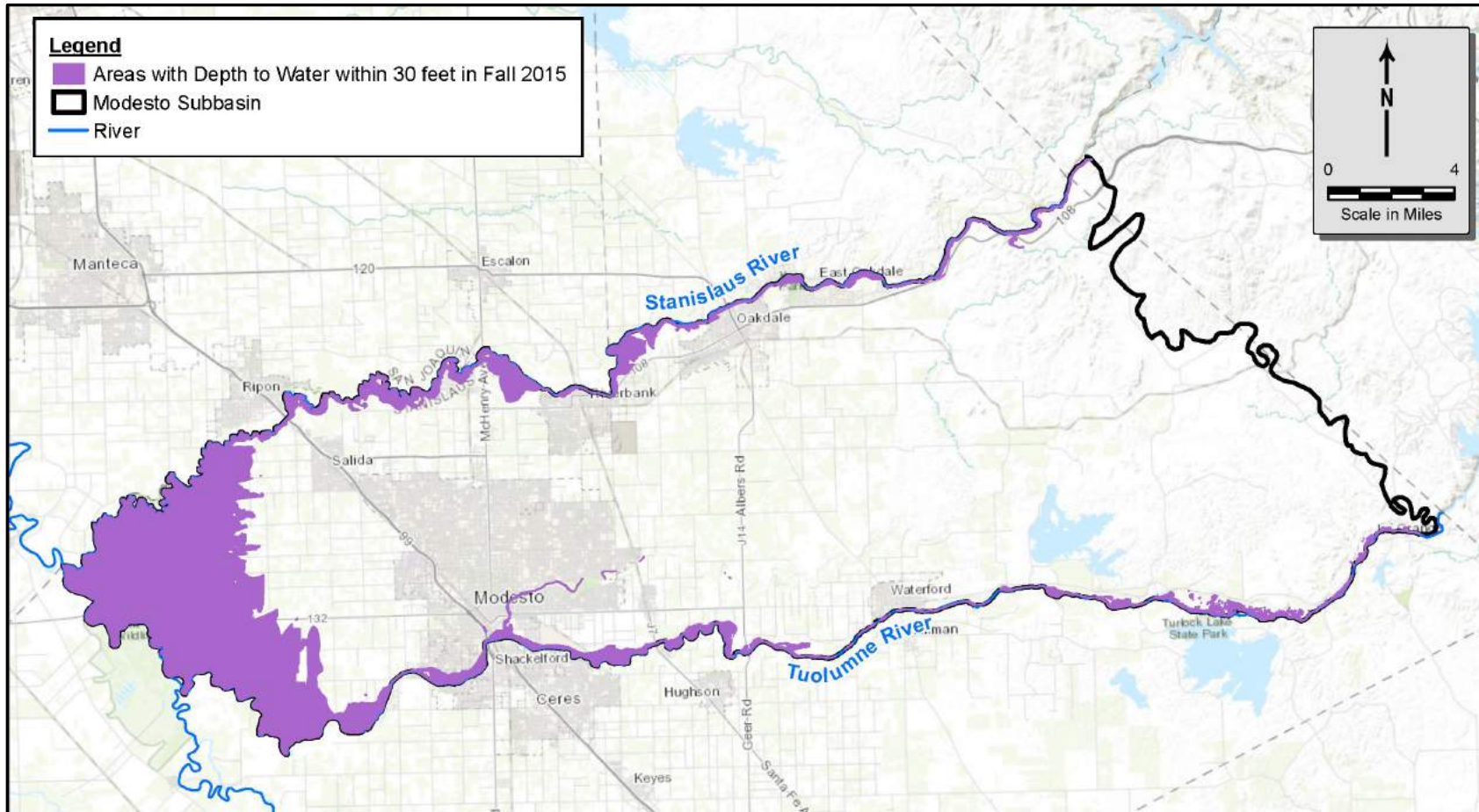
# POTENTIAL GDEs BASED ON DEPTH TO WATER DURING WET PERIOD – SPRING 1998



- 1,525 polygons:
  - 567 Wetland
  - 958 Vegetative
- ~15% decrease from the original NCCAG dataset
- GDEs eliminated in eastern Subbasin, away from rivers and Dry Creek
- This represents the potential GDEs that could have been present during the GSP Study Period

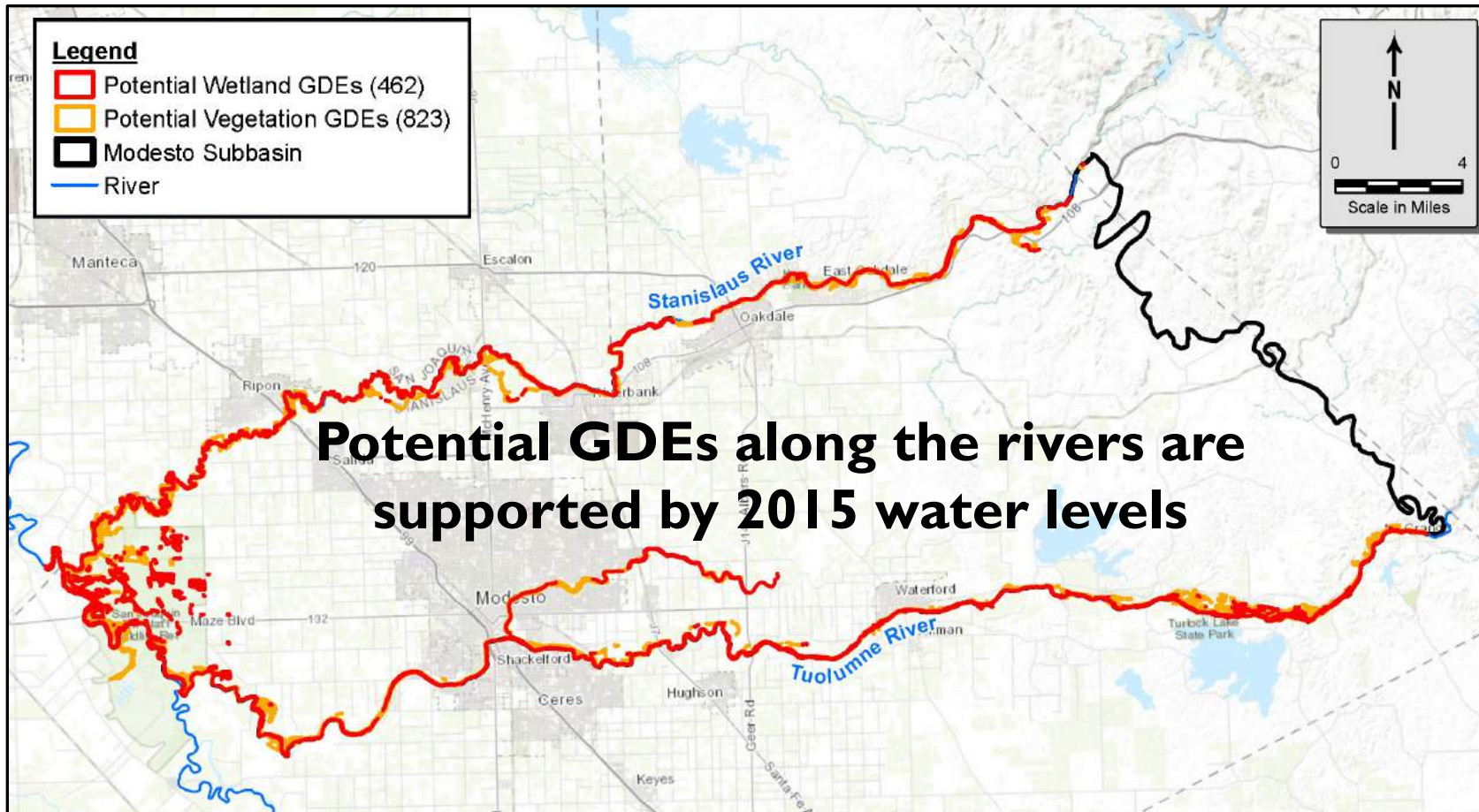


# AREAS WITH DEPTH TO WATER LESS THAN 30 FEET DURING DRY PERIOD – FALL 2015



- Depth to water in Fall 2015, based on model contours
- DTW within 30 feet in western Subbasin and along river boundaries
- These areas supported GDEs even during drought conditions

# POTENTIAL GDEs DURING 2015 DROUGHT CONDITIONS



- 1,285 polygons supported along rivers, even in 2015
- 28% decrease in potential GDEs from the original NCCAG dataset
- Most not supported by 2015 water levels on upper reach of Dry Creek
- Dry Creek included as potential County flood control/recharge project for the GSP; supports additional analysis



# INTERCONNECTED SURFACE WATER MODELING FOR SUSTAINABLE YIELD

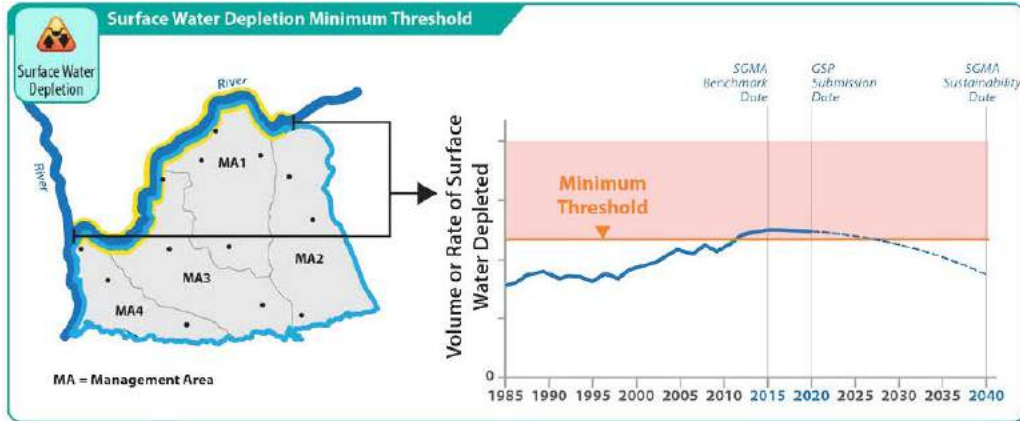
- Sustainable yield (SY) scenario suggests future streamflow depletions can be partially offset if water levels are managed at 2015 levels.

Interconnected Surface Water Modeling	Historical (WY 1991-2015)	Baseline (50-Yr Avg)	2015 (Dry condition)	SY Scenario 2015 VWLs (50-Yr Avg)
Total Streamflow Depletion (negative is net gaining stream)	-60,000	26,000	-7,000	-14,000
Tuolumne River	-30,000	11,000	-1,000	-11,000
San Joaquin River	-14,000	-9,000	-14,000	-12,000
Stanislaus River	-16,800	24,000	8,000	9,000





# INTERCONNECTED SURFACE WATER METRICS SUSTAINABLE MANAGEMENT CRITERIA



- DWR BMP: use volume or rate of streamflow depletion as the metric for MT
- Adjacent subbasins use groundwater levels as a proxy for interconnected SW

- Approach for using water levels as a proxy to the depletion volume or rate:
  - Identify groundwater elevation monitoring sites where a correlation between water level and volume/rate of depletion can be demonstrated.
  - Sustainable yield correlates 2015 water levels along the rivers to a net streamflow depletion of -14,000 AFY that can be used to develop a metric (negative indicates net gaining stream).
  - Using an MT of 2015 water levels correlates to total less streamflow depletion than for either projected future baseline or 2015 flow conditions.



# RECOMMENDATION FOR INTERCONNECTED SURFACE WATER UNDESIRABLE RESULTS AND MINIMUM THRESHOLDS

## Undesirable Result (UR) Definition

Significant and unreasonable adverse impacts on the beneficial uses of surface water caused by groundwater extraction.




For the Tuolumne, San Joaquin, and Stanislaus rivers, the MT will be expressed as the low groundwater elevations observed in Fall 2015 at representative monitoring wells along the river boundaries.

The UR will be evidenced by an exceedance of an MT at a designated percentage of representative monitoring locations for a designated number of consecutive semi-annual monitoring events along each river.

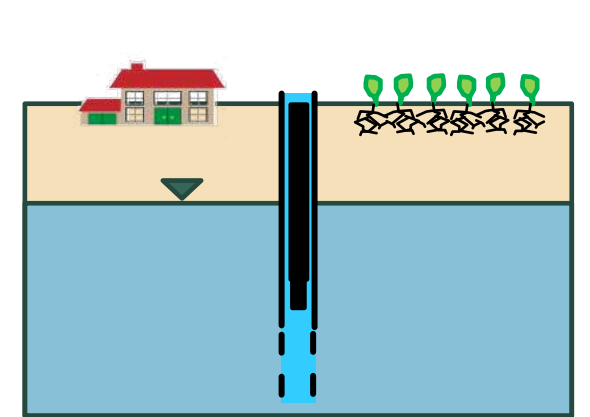
*Percentage of wells and number of consecutive monitoring events to be based on the final GSP representative monitoring well network; monitoring network in progress.*

# PRESENTATION OUTLINE

- **Interconnected Surface Water** 
  - Potential Groundwater Dependent Ecosystems (GDEs)
  - Approach to undesirable results and minimum thresholds



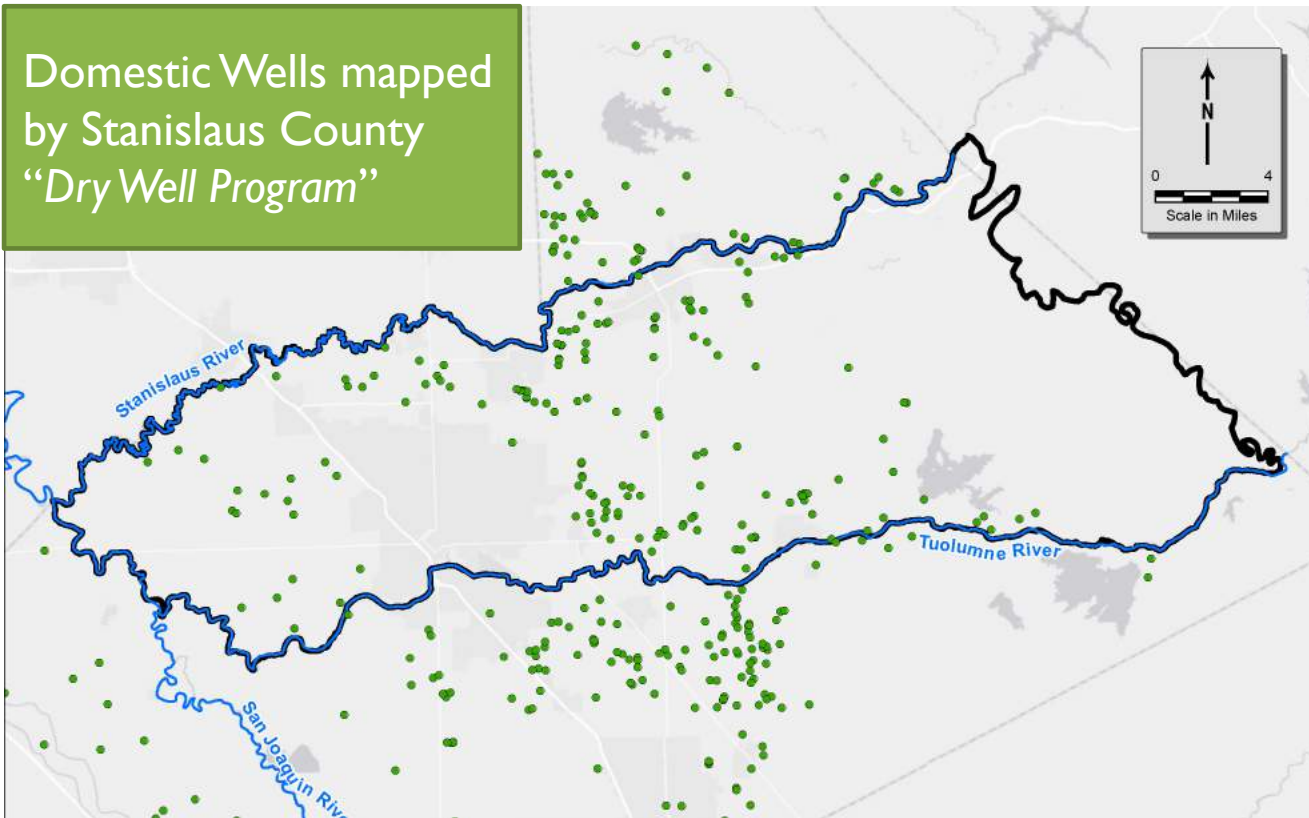
- ➔ ■ **Chronic Lowering of Water Levels** 
  - Review of analyses for sustainable management criteria
  - Approach to undesirable results and minimum thresholds





# ADVERSE IMPACTS TO WATER SUPPLY WELLS DURING RECENT DROUGHT

Domestic Wells mapped  
by Stanislaus County  
“Dry Well Program”

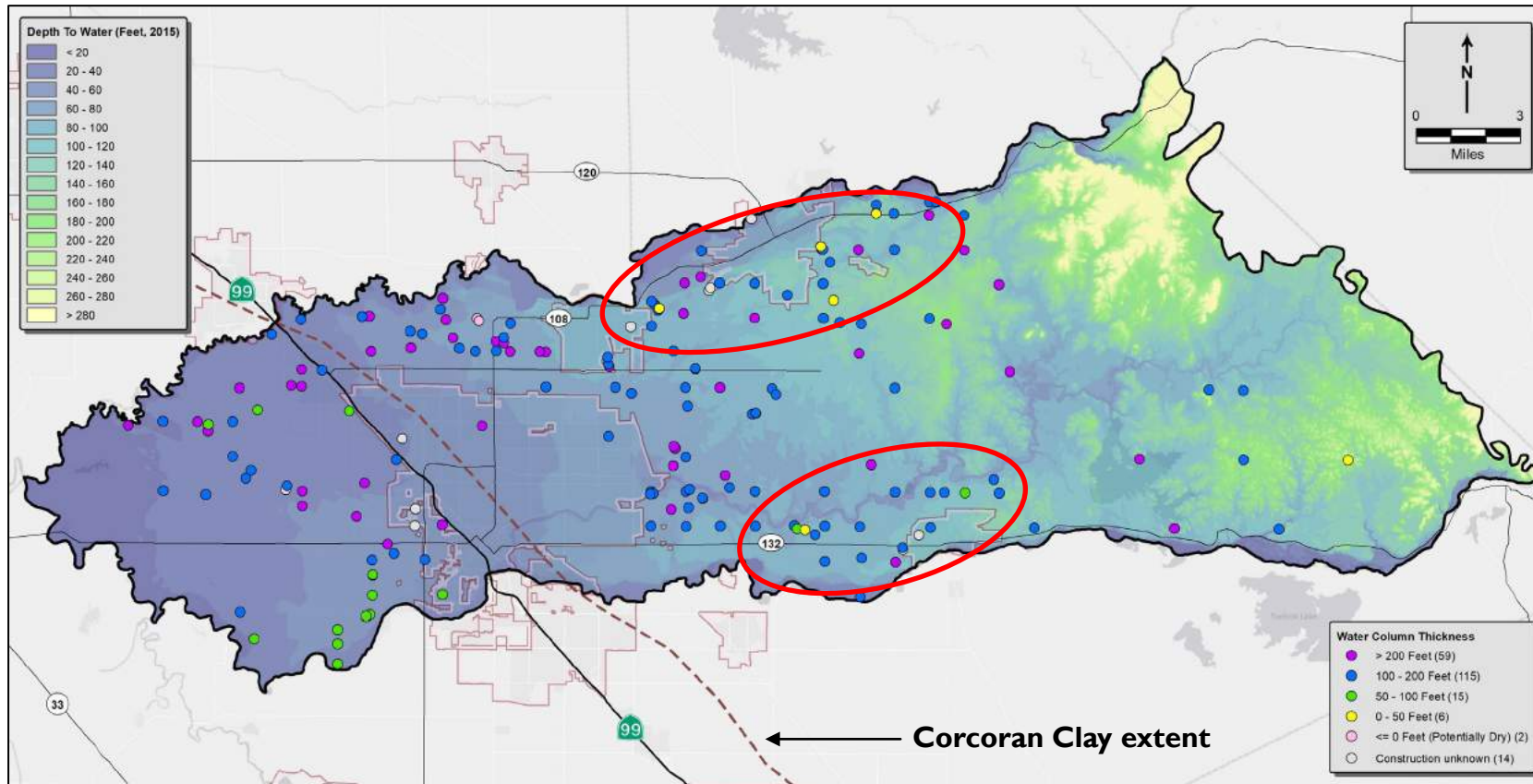


- 159 domestic well failures reported 2014-2017
- County assisted well owners and mapped problem wells
- Most problem wells were old and/or shallow (<100 feet deep)
- Adverse impacts to other water supply wells:
  - City of Waterford public water supply
  - OID agricultural water supply



# DOMESTIC WELLS VULNERABILITY ANALYSIS

## NEW WELLS INSTALLED SINCE 2015



- New domestic wells likely replaced wells impacted in 2015
- Some newer wells remain vulnerable to potential future declines in local areas (2 areas circled in red on map)
- Hydrographs indicate that current water levels in those 2 areas are relatively stable



# CHRONIC LOWERING OF WATER LEVELS APPROACH TO UNDESIRABLE RESULTS AND MTs

- Adverse impacts to water supply wells during 2015 drought:
  - Waterford, OJD, and domestic wells
  - Others predict problems if groundwater levels continue to decline
- Most failed 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; wells appear to be capable of supplying water
- GSP projects include increasing reliance for public water suppliers
- Maintaining water levels at or above recent *historic low levels* would sufficiently protect current water supply wells

# RECOMMENDATION FOR CHRONIC LOWERING OF WATER LEVELS UNDESIRABLE RESULTS AND MINIMUM THRESHOLDS

## Undesirable Result (UR) Definition

Significant and unreasonable groundwater level declines – either due to multi-year droughts or due to chronic declines where groundwater is the sole supply – such that water supply wells are adversely impacted in a manner that cannot be readily managed or mitigated.



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

The UR will be evidenced by an exceedance of an MT in a designated percentage of representative monitoring wells for a number of consecutive semi-annual monitoring events in each Management Area.

*Percentage of wells and number of consecutive monitoring events to be based on the final GSP representative monitoring well network for each Management Area; monitoring network in progress.*



## NEXT STEPS

- Develop criteria for Groundwater Storage, Land Subsidence, and Water Quality sustainability indicators
- Finalize monitoring network
- Set MTs, Measurable Objectives (MOs), and Interim Milestones for representative wells
- Continued development and analysis of projects and Management Actions





## Stanislaus & Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: [strgba@mid.org](mailto:strgba@mid.org)

### STRGBA GSA AGENDA

**July 14, 2021 (3:00 p.m. – 4:00 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](http://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

#### **On your desktop/iPad or tablet/laptop:**

1. To join the webinar, click the link published in the Agenda for the current meeting about 5 minutes before webinar begins.
2. Follow the on-screen instructions to install and/or launch the Zoom application.
3. If prompted, enter the Webinar ID published in the Agenda.
4. All public attendees will enter the meeting muted.
5. If you wish to speak under Business from the Public, or after the Chairman calls for Public Comment, click on the "Raise Hand" button to request to speak.

#### **On your phone:**

1. To join the meeting by phone, call the number published in the Agenda for the meeting.
2. Enter the Webinar ID published in the Agenda, then hit the # symbol.
3. All public attendees will enter the meeting muted.
4. If you wish to speak under Business from the Public, or after the Chairman calls for Public Comment, press \*9 on your phone to "Raise Hand" or simply request to speak.





**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: strgba@mid.org

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 6/9/21 Meeting Minutes [Action Item]  
Who: Eric Thorburn, Committee  
Expected Outcome: Approval
4. Topic: Chronic Lowering of Water Levels Resolution [Action Item]  
Who: Gordon Enas, Committee  
Expected Outcome: Approval
5. Topic: Interconnected Surface Water Resolution [Action Item]  
Who: Gordon Enas, Committee  
Expected Outcome: Approval
6. Topic: Budget and Schedule Update  
Who: Gordon Enas, Committee  
Expected Outcome: Discussion
7. Next Meeting  
August 11, 2021 at 1:30 p.m. via Zoom
8. Items too late for the agenda



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: strgba@mid.org

## MEETING MINUTES

**June 9, 2021 (1:30 p.m. – 2:00 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  
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	Dave Boucher
John Mauterer, MID	Valerie Kincaid
Stacy Henderson, Terpstra Henderson	Liz Elliott, Todd Groundwater
Hilary Reinhard, Provost & Pritchard	Phyllis Stanin, Todd Groundwater
Gordon Enas, MID	Debbie Montalbano
Samantha Wookey, MID	John Davids
John Mensinger, MID	Amanda Peisch-Derby
Dennis Witchow	
Emily Sheldon	
Steve Knell	

### 2. Business from the Public

N/A



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: [strgba@mid.org](mailto:strgba@mid.org)

**3. Election of GSA Chairman [Action item]**

Renfrow moved, 2<sup>nd</sup> by Riddell, to elect Eric Thorburn as the STRGBA GSA Chairman. Motion carried.

**4. Approve 5/12/21 Minutes [Action item]**

Ward moved, 2<sup>nd</sup> by Riddell, to approve 5/12/21 meeting minutes. Motion carried.

**5. Budget and Schedule Update**

Enas reported that Todd Groundwater has expended approximately 58% of the budget and 80% of the time scheduled through April 30, 2021.

**6. Public Outreach Update**

Wookey gave an update on the office hours. The meeting was recorded and posted to the STRGBA GSA website. The spring newsletter was released and is also available on the website.

**7. GSP Update**

Stanin reported that the consultant team is currently developing a list of projects/management actions and developing the sustainable management criteria.

**8. Monitoring Well Update**

Elliott gave an update on the progress of the monitoring well program. The contractor installed and constructed 17 wells at 11 locations. Due to leftover funds an additional well was installed. Next steps include surveying wells and collecting water quality data from the wells.

- Witchow asked is there a way to find out the exact coordinates of the wells? Elliott stated approximate coordinates are available although the wells have not been surveyed. Elliot will provide a map showing the approximate well locations and post to the website.
- Renfrow mentioned that the asphalt pavement surrounding the monitoring well located in the City of Oakdale need repair. Renfrow will contact Elliot with the details.

**9. Next meeting**

July 14, 2021 at 1:30 p.m. via Zoom webinar



**Stanislaus & Tuolumne Rivers Groundwater Basin Association  
Groundwater Sustainability Agency**

1231 11<sup>th</sup> Street | Modesto, CA 95354  
Phone: (209) 526-7564 | Fax: (209) 526-7352  
Email: strgba@mid.org

**10. Items too late for the agenda**

- Renfrow stated he received a text message from the Public Works Superintendent about the monitoring well pavement. Has anyone else had trouble with the asphalt. Elliott stated she is the contact person to be connected to the contractor.
- Allison and Dave Boucher asked where well #9 is located. Elliott answered the question live and stated there will be a map posted to show the locations of the wells.

DRAFT





## AGENDA REPORT

**GSA Meeting Date:** July 14, 2021

---

<b>Subject:</b>	Chronic Lowering of Groundwater Levels Sustainability Indicator for the Modesto Subbasin.
-----------------	---

---

<b>Recommended Action:</b>	<p>Resolution making the determination that Undesirable Results (UR) are defined as the chronic lowering of groundwater levels in the Modesto Subbasin that produce significant and unreasonable groundwater level declines – either due to multiyear droughts or due to chronic declines where groundwater is the sole supply – such that water supply wells are adversely impacted in a manner that cannot be readily managed or mitigated.</p> <p>Further, resolving that the Minimum Threshold (MT) will be expressed as the historic low groundwater elevation observed or estimated for WY 1991-2020 at each representative monitoring location, based on available data. The UR will be evidenced by an exceedance of an MT in a designated percentage of representative monitoring wells for a number of consecutive semi-annual monitoring events in each Management Area.</p>
----------------------------	---

---

<b>Background and Discussion:</b>	<p>SGMA identifies six sustainability indicators that describe potential adverse groundwater conditions. Undesirable results occur when conditions related to any of the six sustainability indicators become significant and unreasonable. SGMA states that undesirable results occur when chronic lowering of groundwater levels produce a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods. Based on this information and the technical analysis of impacts of groundwater levels on water supply wells – including public water supply and domestic wells – as presented by the technical consultants at multiple public meeting with the Technical Advisory Committee (TAC), the STRGBA GSA has determined that undesirable results related to chronic lowering of groundwater levels will likely occur if groundwater levels in a designated percentage of representative monitoring wells for a number of consecutive semi-annual monitoring events in each Management Area exceed the historic low groundwater elevation observed or estimated between WY 1991-2020.</p>
-----------------------------------	---

---

<b>Alternatives, Pros and Cons of Each Alternative:</b>	<p>Pros: Defining the undesirable results for chronic lowering of water levels will support the Modesto Subbasin in achieving its sustainability goal.</p> <p>Cons: Not defining the undesirable result for chronic lowering of water levels will make the GSP non-compliant with SGMA and potentially place the Modesto Subbasin under probation.</p>
---	--

---

---

**Concurrence:** The recommendation to define undesirable results for the Chronic Lowering of Water Levels sustainability indicator is contained in the presentation given by Todd Groundwater to STRGBA GSA dated June 23, 2021 and supported by other presentations to the Technical Advisory Committee (TAC) at periodic public meetings. This recommendation is consistent with similar findings made by the Turlock Subbasin to the south and the Eastern San Joaquin Subbasin to the north.

---

**Fiscal Impact:** If the resolution is adopted, a measurable objective and minimum threshold for the chronic lowering of water levels sustainability indicator will need to be developed and implemented by the GSP, which may require additional analysis by the consultant team, but not additional cost.

---

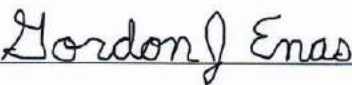
**Recommendation:** Resolution making the determination that Undesirable Results (UR) are defined as the chronic lowering of groundwater levels in the Modesto Subbasin that produce significant and unreasonable groundwater level declines – either due to multiyear droughts or due to chronic declines where groundwater is the sole supply – such that water supply wells are adversely impacted in a manner that cannot be readily managed or mitigated.


Further, resolving that the Minimum Threshold (MT) will be expressed as the historic low groundwater elevation observed or estimated for WY 1991-2020 at each representative monitoring location, based on available data. The UR will be evidenced by an exceedance of an MT in a designated percentage of representative monitoring wells for a number of consecutive semi-annual monitoring events in each Management Area.

---

**Attachments:** Supporting documents attached:  
 Resolution  Presentation  Other supporting docs  None attached  
*Note: Original contracts and agreements are housed in the GSA Secretary's Office, phone (209) 526-7360.*

---

Presenter

Gordon Enas, P.E. 7/9/2021
Date Signed

GSA Chairman

Eric Thorburn, P.E. 7/9/21
Date Signed



## DRAFT

### RESOLUTION NO. 2021-5

#### **APPROVING THE DEFINITION OF CHRONIC LOWERING OF GROUNDWATER LEVELS SUSTAINABILITY INDICATOR FOR THE MODESTO SUBBASIN.**

WHEREAS, the Sustainable Groundwater Management Act (SGMA) identifies six sustainability indicators that describe potential adverse groundwater conditions and that if any of these indicators should be determined to be significant and unreasonable in the Modesto Subbasin, that condition would define an Undesirable Result; and

WHEREAS, SGMA states that a Groundwater Sustainability Agency (GSA) is required to establish criteria for undesirable results for those sustainability indicators that exist and are likely to occur in the future; and

WHEREAS, SGMA states that undesirable results occur when “chronic lowering of groundwater levels produce a significant and unreasonable depletion of supply if continued over the planning and implementation horizon”; and

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) has determined that undesirable results related to chronic lowering of groundwater levels will likely occur if groundwater levels in a designated percentage of representative monitoring wells for a number of consecutive semi-annual monitoring events in each Management Area exceed the historic low groundwater elevation observed or estimated between WY 1991 and 2020.

BE IT RESOLVED, The Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency does hereby make the determination that Undesirable Results (UR) are defined as the chronic lowering of groundwater levels in the Modesto Subbasin that produce significant and unreasonable groundwater level declines – either due to multiyear droughts or due to chronic declines where groundwater is the sole supply – such that water supply wells are adversely impacted in a manner that cannot be readily managed or mitigated.

BE IT FURTHER RESOLVED, that the Minimum Threshold (MT) will be expressed as the historic low groundwater elevation observed or estimated from WY 1991-2020 at each representative

monitoring location, based on available data. The UR will be evidenced by an exceedance of an MT in a designated percentage of representative monitoring wells for a number of consecutive semi-annual monitoring events in each Management Area.





## AGENDA REPORT

**GSA Meeting Date:** July 14, 2021

---

<b>Subject:</b>	Interconnected Surface Water Sustainability Indicator for the Modesto Subbasin.
-----------------	---

---

<b>Recommended Action:</b>	<p>Resolution making the determination that Undesirable Results (UR) for interconnected surface water in the Modesto Subbasin occur when significant and unreasonable adverse impacts to the beneficial uses of surface water are caused by groundwater extraction.</p> <p>Further, resolving that for the Tuolumne, San Joaquin, and Stanislaus rivers, the Minimum Threshold (MT) will be expressed as the low groundwater elevations observed in Fall 2015 at representative monitoring wells along the river boundaries. The UR will be evidenced by an exceedance of an MT at a designated percentage of representative monitoring locations for a designated number of consecutive semi-annual monitoring events along each river.</p>
----------------------------	--

---

<b>Background and Discussion:</b>	<p>SGMA identifies six sustainability indicators that describe potential adverse groundwater conditions. Undesirable results occur when conditions related to any of the six sustainability indicators become significant and unreasonable. Undesirable results will be used by the DWR to determine whether the sustainability goal has been achieved within the basin. SGMA requires that a GSA shall consider the interests of all beneficial uses and users of groundwater including surface water users if there is a hydrologic connection between surface and groundwater bodies. Three rivers form the boundaries of the Modesto Subbasin: Tuolumne River on the south, San Joaquin River on the west and Stanislaus River to the north. An analysis of historical groundwater levels and surface water flow data have shown that these rivers are interconnected with the groundwater aquifers. Lowering of the groundwater elevation in the Modesto Subbasin could impact surface water by depleting the flow in these rivers such that the rivers and groundwater become disconnected. Depletions of interconnected surface water then would have significant and unreasonable adverse impacts on beneficial uses of the surface water. The STRGBA GSA has determined that undesirable results related to depletion of interconnected surface water will likely occur if groundwater levels in monitoring wells adjacent to the rivers surrounding the Subbasin are allowed to decline significantly lower than Fall 2015 levels for an extended period of time.</p>
-----------------------------------	---

---

<b>Alternatives, Pros and Cons of Each Alternative:</b>	<p>Pros: Defining the undesirable results for interconnected surface water will ensure the Modesto Subbasin achieves its sustainability goal.</p> <p>Cons: By not defining the undesirable result for interconnected surface water will make the GSP non-compliant with SGMA and potentially place the Modesto Subbasin under probation.</p>
---	--

---

---

**Concurrence:** The recommendation to define undesirable results for the Interconnected Surface Water sustainability indicator is contained in the presentation given by Todd Groundwater to STRGBA GSA dated June 23, 2021. This recommendation is consistent with similar findings made by the Turlock Subbasin to the south and the Eastern San Joaquin Subbasin to the north.

---

**Fiscal Impact:** If the resolution is approved, a measurable objective and minimum threshold for the interconnected surface water sustainability indicator will need to be developed for a representative number of monitoring sites along the rivers and implemented by the GSP, which will require additional analysis by the consultant team, but at no additional cost. Costs to develop these criteria and the representative monitoring network are included in the current GSP budget. GSP implementation costs have not yet been determined.

---

**Recommendation:** Resolution making the determination that Undesirable Results (UR) for interconnected surface water in the Modesto Subbasin occur when significant and unreasonable adverse impacts to the beneficial uses of surface water are caused by groundwater extraction.

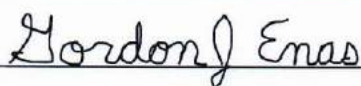
Further, resolving that for the Tuolumne, San Joaquin, and Stanislaus rivers, the Minimum Threshold (MT) will be expressed as the low groundwater elevations observed in Fall 2015 at representative monitoring wells along the river boundaries. The UR will be evidenced by an exceedance of an MT at a designated percentage of representative monitoring locations for a designated number of consecutive semi-annual monitoring events along each river.


---

**Attachments:** Supporting documents attached:  
 Resolution  Presentation  Other supporting docs  None attached

*Note: Original contracts and agreements are housed in the GSA Secretary's Office, phone (209) 526-7360.*

---

Presenter

Gordon Enas, P.E.
7/9/2021
Date Signed

GSA Chairman

Eric Thorburn, P.E.
7/9/21
Date Signed



## AGENDA REPORT

DRAFT

### RESOLUTION NO. 2021-4

#### **APPROVING THE DEFINITION OF UNDESIRABLE RESULTS FOR THE INTERCONNECTED SURFACE WATER SUSTAINABILITY INDICATOR FOR THE MODESTO SUBBASIN.**

WHEREAS, the Sustainable Groundwater Management Act (SGMA) identifies six sustainability indicators that describe potential adverse groundwater conditions and that if any of these indicators should be determined to be significant and unreasonable in the Modesto Subbasin, that condition would define an Undesirable Result; and

WHEREAS, SGMA states that a Groundwater Sustainability Agency (GSA) is required to establish criteria for undesirable results for those sustainability indicators that exist currently or are likely to occur in the future; and

WHEREAS, SGMA defines Interconnected Surface Water as a “hydrologic connection between surface and groundwater bodies”; and

WHEREAS, Three rivers form the boundaries of the Modesto Subbasin – Tuolumne River on the south, San Joaquin River on the west and Stanislaus River to the north – and an analysis of historical groundwater levels and surface water flow data have shown that these rivers are interconnected with the groundwater aquifers; and

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) has determined that undesirable results related to depletion of interconnected surface water will likely occur if groundwater levels in monitoring wells adjacent to the rivers surrounding the basin are allowed to decline significantly lower than Fall 2015 levels for an extended period of time.

BE IT RESOLVED, The Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency does hereby make the determination that Undesirable Results (UR) for interconnected surface water in the Modesto Subbasin occur when significant and unreasonable adverse impacts to the beneficial uses of surface water are caused by groundwater extraction.

BE IT FURTHER RESOLVED, that for the Tuolumne, San Joaquin, and Stanislaus rivers, the Minimum Threshold (MT) will be expressed as the low groundwater elevations observed in Fall 2015 at representative monitoring wells along the river boundaries. The UR will be evidenced by an exceedance of an MT at a designated percentage of representative monitoring locations for a designated number of consecutive semi-annual monitoring events along each river.



### Cost To Prepare GSP (September 2018 - May 2021)

