Merced GSP Stakeholder Advisory Committee

Stakeholder Advisory Committee Meeting – April 12, 2021

Image courtesy: Veronica Adrover/UC Merced

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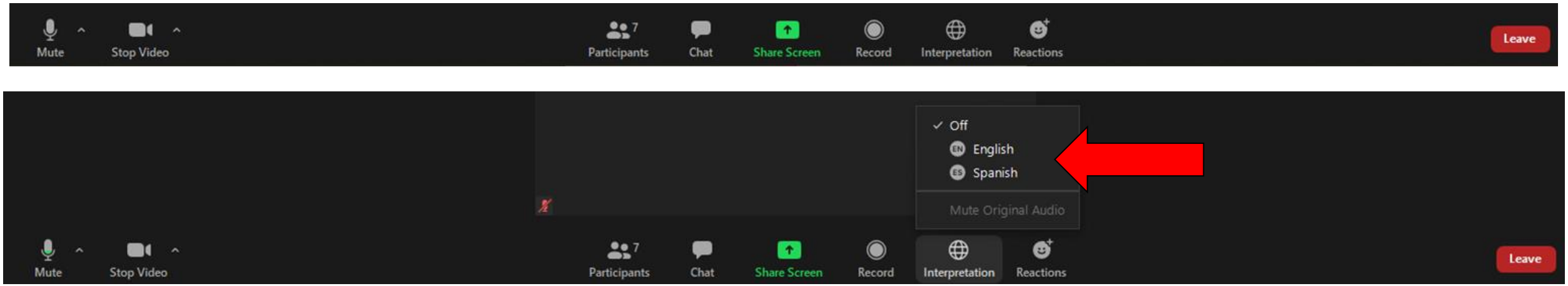
Welcome, Instructions for Zoom
Bienvenidos, Instrucciones para Zoom

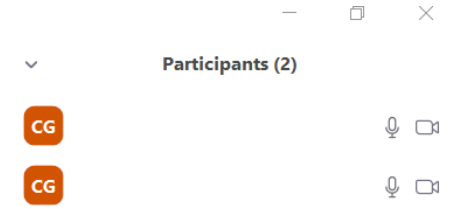
We have two language audio channels available. English only speakers, please select English.

Si solamente habla español, debe seleccionar un canal de idioma



The meeting will have simultaneous interpreting, so you are welcome to comment in your native language.
La junta será interpretada simultáneamente, así que le invitamos a que haga comentarios en su lenguaje nativo.

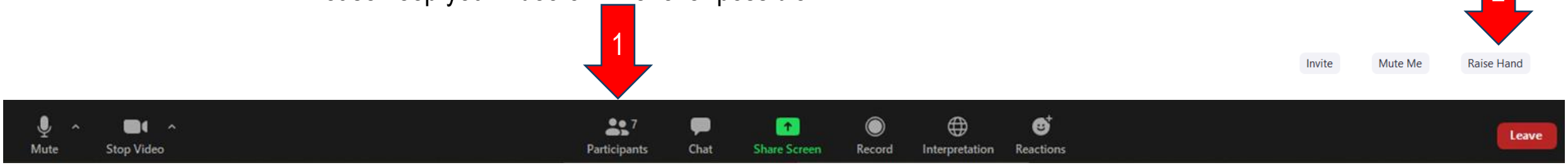
Welcome, Instructions for Zoom



- We are beginning the meeting with everyone on mute.
- Please keep yourself muted until called upon and asked to unmute.
- We recommend that you view in “Gallery View” to see the project team and Stakeholder Committee members.
- If you have comments, please use the “**Raise Hand**” feature:
  - Stakeholder Committee: during discussion time
  - Members of the Public: During Public Comment or when the moderator asks for public comments.
- The moderator will call on you to unmute.
- If you cannot hear the host or have technical issues, use the **Chat** to Host and we will try to address the issue.

Stakeholder Advisory Committee Members

- Please keep your video on whenever possible.



Agenda

1. Call to Order and Welcome
2. Introductions and Roll Call
3. Merced GSP Overview
   a) GSP Highlights/Commitments
   b) GSP Implementation Progress
   c) WY2020 Annual Report Summary
4. What's Next?
   a) Data Gaps Plan
   b) Future Stakeholder Advisory Committee Meetings
5. Public Comment
6. Next Steps and Adjourn

Image courtesy: Veronica Adrover/UC Merced

Stakeholder Advisory Committee Members

Present	Committee Member	Interest/Affiliation	Present	Alternate	Interest/Affiliation
	Arlan Thomas	MIDAC member	X	Ben Migliazzo	Live Oak Farms
X	Bob Kelley	Stevinson Representative		Blake Nervino	Stevinson/Merquin
	Breanne Ramos	MCFB			
X	Craig Arnold	Arnold Farms			
X	Darren Olguin	Resident of Merced County			
X	Dave Serrano	Serrano Farms - Le Grand			
X	David Belt	Foster Farms			
X	Emma Reyes	Martin Reyes Farm/Land Leveling			
X	Gil Cardon	Merced Co. Hispanic Chamber of Commerce			
	Greg Olzack	Atwater Resident			
X	Jean Okuye	E Merced RCD			
X	Joe Sansoni	Sansoni Farms/MCFB			
	Joe Scoto	Scoto Brothers/McSwain School Dist.			
X	Jose Moran	Livingston City Council			
X	Lacy Carothers	Cal Am Water			
X	Lisa Baker	Clayton Water District			
X	Lisa Kayser-Grant	Sierra Club			
	Mark Maxwell	UC Merced			
X	Maxwell Norton	Unincorporated area			
X	Nav Athwal	TriNut Farms			
X	Olivia Gomez	Community of Planada	X	Amanda Monaco	Leadership Counsel
X	Parry Klassen	ESJWQC			
	Reyn Akinoa	River Partners			
X	Rick Drayer	Merced/Mariposa Cattlemen			
	Robert Weimer	Weimer Farms			
X	Simon Vander Woude	Sandy Mush MWC			
X	Susan Walsh	City of Merced	X	Bill Spriggs	Resident City of Merced
X	Thomas Dinwoodie	Master Gardener/McSwain			
X	Trevor Hutton	Valley Land Alliance			
X	Wes Myers	Merced Grassland Coalition	X	Lou Myers	Benjamin Land LP

Stakeholder Advisory Committee Meeting Agreements

Guidelines for successful meetings

- Civility is required.
  - Treat one another with courtesy and respect.
  - Be honest, fair, and as candid as possible.
  - Personal attacks and stereotyping are not acceptable.
- Creativity is encouraged.
  - Think outside the box and welcome new ideas.
  - Build on the ideas of others to improve results.
  - Disagreements are problems to be solved rather than battles to be won.
- Efficiency is important.
  - Participate fully, without distractions.
  - Respect time constraints and be succinct.
  - Let one person speak at a time.
- Constructiveness is essential.
  - Take responsibility for the group as a whole and ask for what you need.
  - Enter commitments honestly and keep them.

Image courtesy: Veronica Adrover/UC Merced

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Merced GSP Overview

Image courtesy: Veronica Adrover/UC Merced

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Sustainable Groundwater Management Act Overview

- Merced Groundwater Subbasin is in a state of critical overdraft
- SGMA required a Groundwater Sustainability Plan (GSP) by **Jan 1, 2020** for sustainable groundwater management of the basin within a **20-year timeframe**

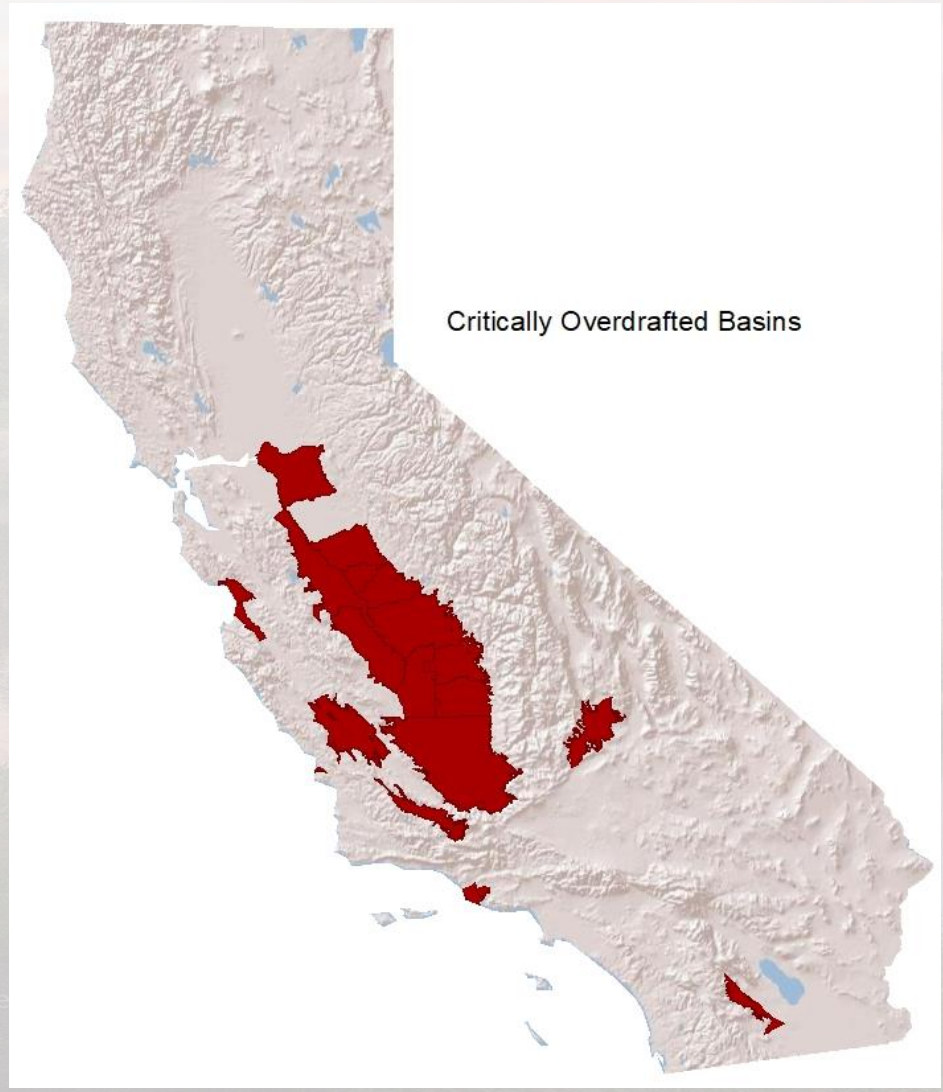
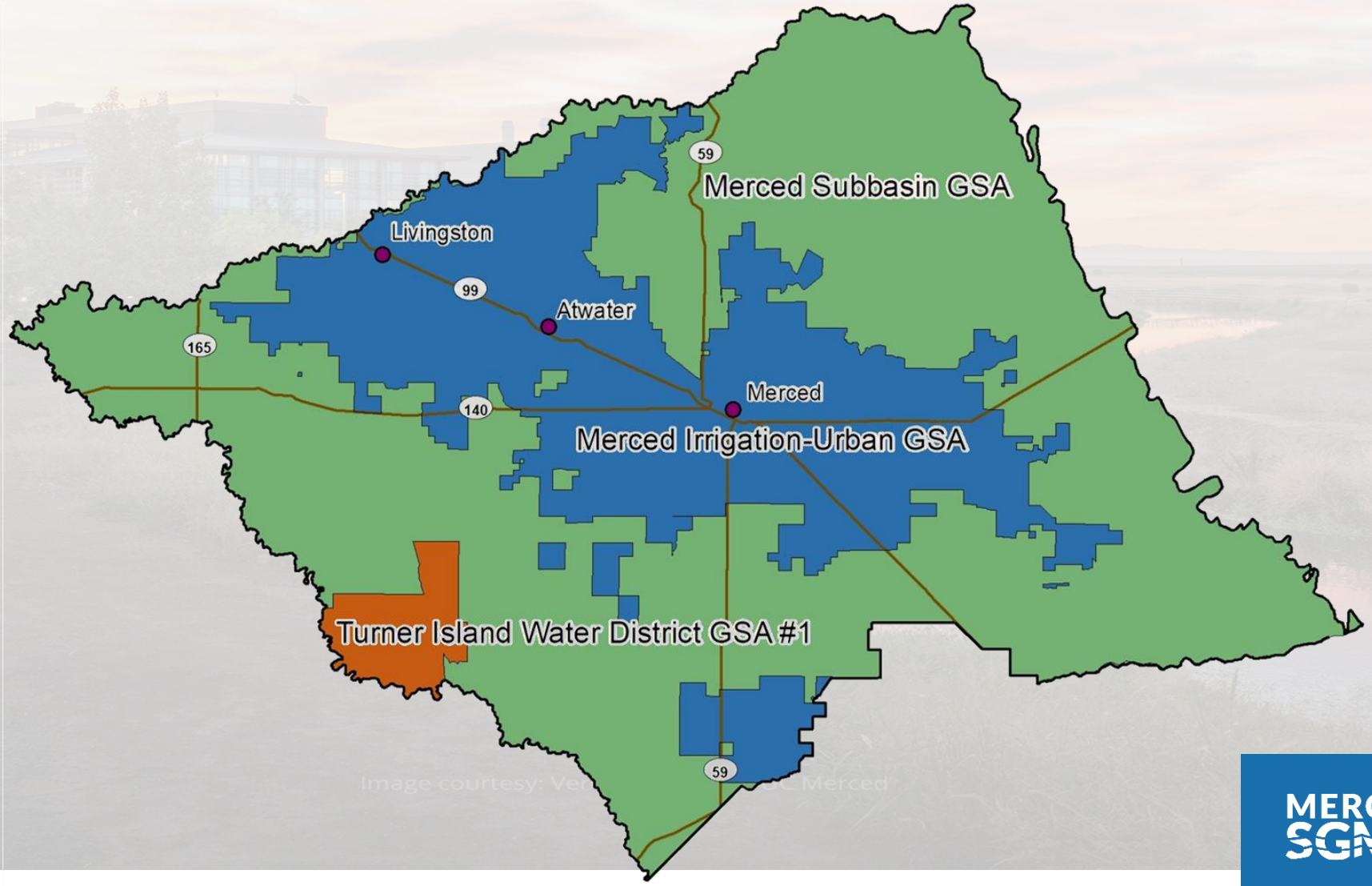


Image courtesy: Veronica Adrove

Three GSAs Prepared One Groundwater Sustainability Plan for the Merced Subbasin



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The GSP and first two Annual Reports were submitted on time

- Merced Subbasin GSP
  - Adopted by all 3 GSAs and **submitted to DWR on January 28, 2020**
  - DWR conducted “completeness” checks in February 2020 – deemed Merced GSP “complete”
  - DWR now in 2-yr review of plans and expects GSAs to start implementation in interim
- Annual Reports
  - Water Year (WY) 2019 Submitted to DWR March 31, 2020
    - Covered water years 2016-2019
  - WY 2020 Annual Report Submitted March 31, 2021

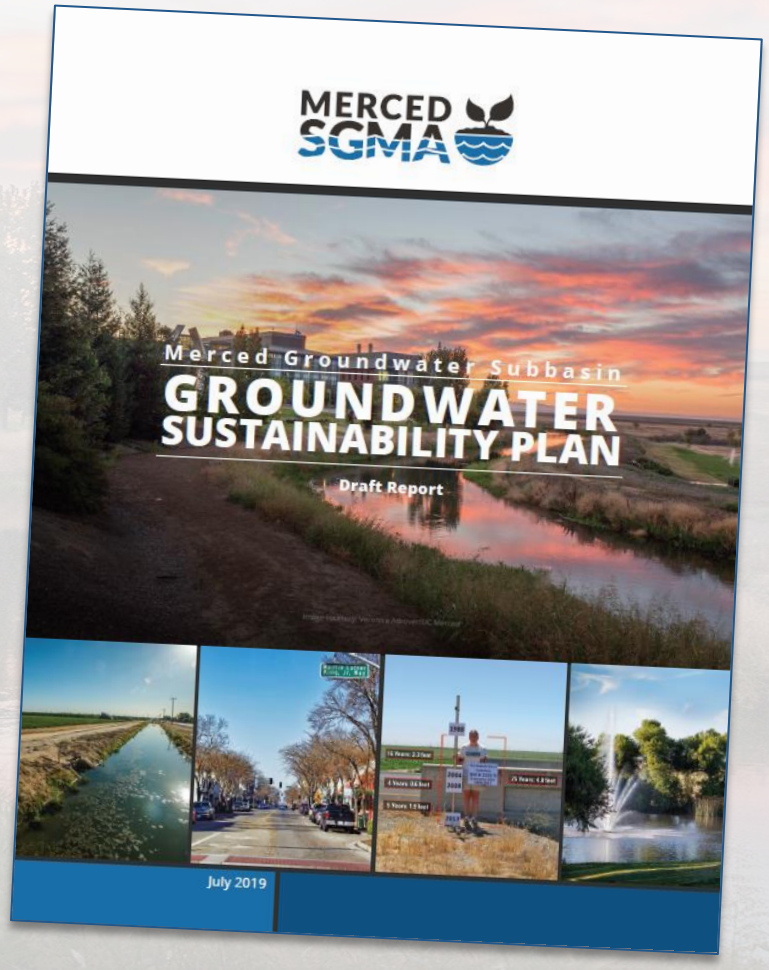


Image courtesy: Veronica Adrover/UC Merced

Merced GSP Sustainability Goal

Achieve sustainable groundwater management on a long-term average basis by increasing recharge and/or reducing groundwater pumping, while avoiding undesirable results.

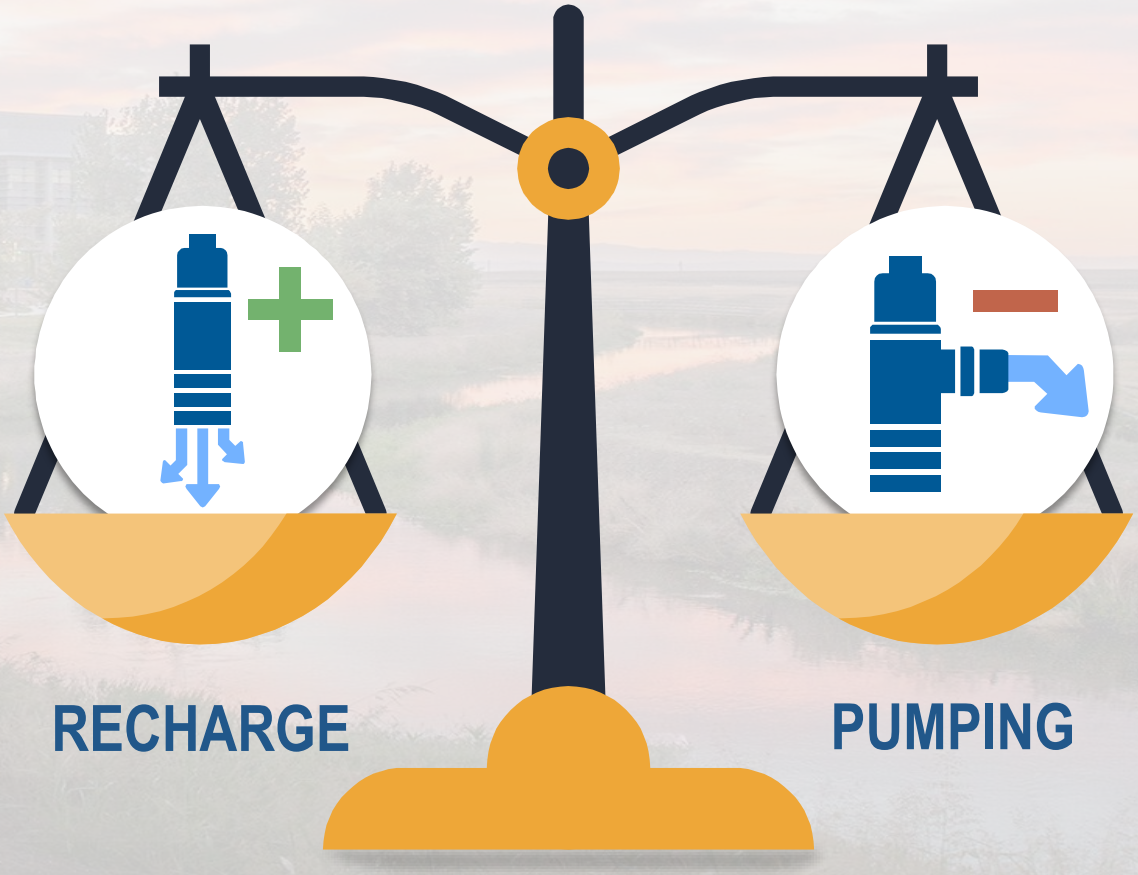


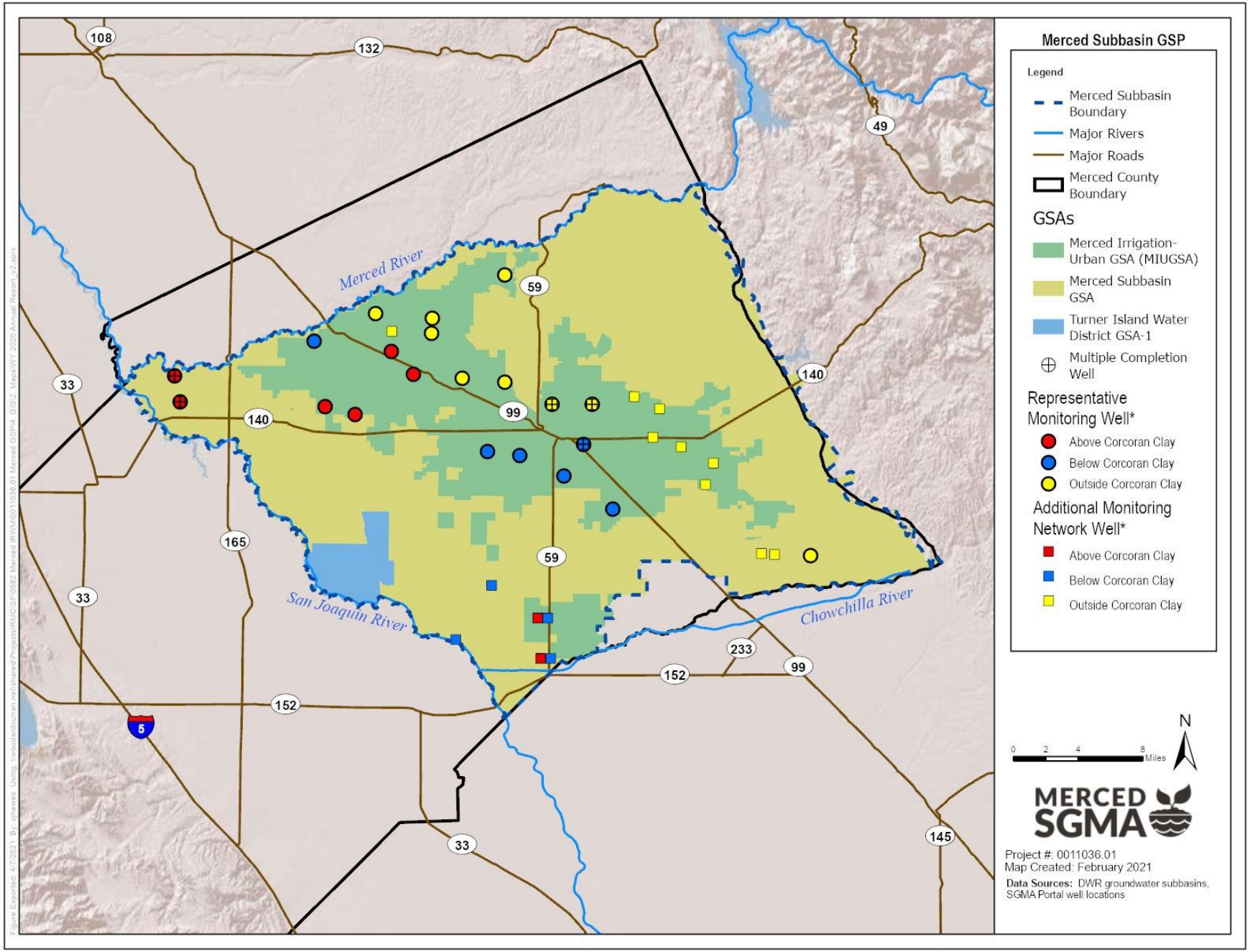
Image courtesy: Veronica Adrover/UC Merced

Key Elements of GSP

- Sustainability Goal
- Hydrogeologic Conceptual Model
- Water Budgets (Historical, Current, Projected, Sustainable)
- Sustainable Management Criteria based on consideration of sustainability indicators to avoid undesirable results
- Monitoring network and data management
- Projects and management actions to achieve sustainability by 2040

Image courtesy: Veronica Adrover/UC Merced

Representative wells monitor water levels, water quality, & subsidence



GSP Establishes Sustainable Management Criteria for the Subbasin

Sustainability Indicator	Minimum Threshold (MT)	Measurable Objective	Undesirable Result
 Groundwater Levels	Depth of shallowest well in a 2-mile radius of each representative well or minimum pre-January 1, 2015, elevation	Projected average future groundwater level under sustainable yield modeling simulation	Greater than 25% of representative wells fall below MT in 2 consecutive wet, above normal, or below normal years
 Groundwater Storage	N/A - not expected to occur in the Subbasin due to the significant volumes of freshwater in storage		
 Sea Water Intrusion	N/A - not present and not expected to occur due to the distance between the Subbasin and the Pacific Ocean (and Sacramento-San Joaquin Delta)		
 Degraded Water Quality	1,000 mg/L TDS	500 mg/L TDS	At least 25% representative wells exceed MT for 2 consecutive years
 Land Subsidence	-0.75 ft/year	-0.25 ft/year	Exceedance of MT at 3 or more representative sites for 2 consecutive years
 Depletions of Interconnected Surface Waters	Groundwater levels used as a proxy for this sustainability indicator		

Sustainable Yield = How much can be sustainably pumped

- **What is sustainable yield?**
  - Per SGMA, sustainable yield is “the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.”
- **How do we develop this?**
  - We have estimated this using a groundwater model, modifying conditions to balance out the change in stored groundwater over time.

Image courtesy: Veronica Adrover/UC Merced

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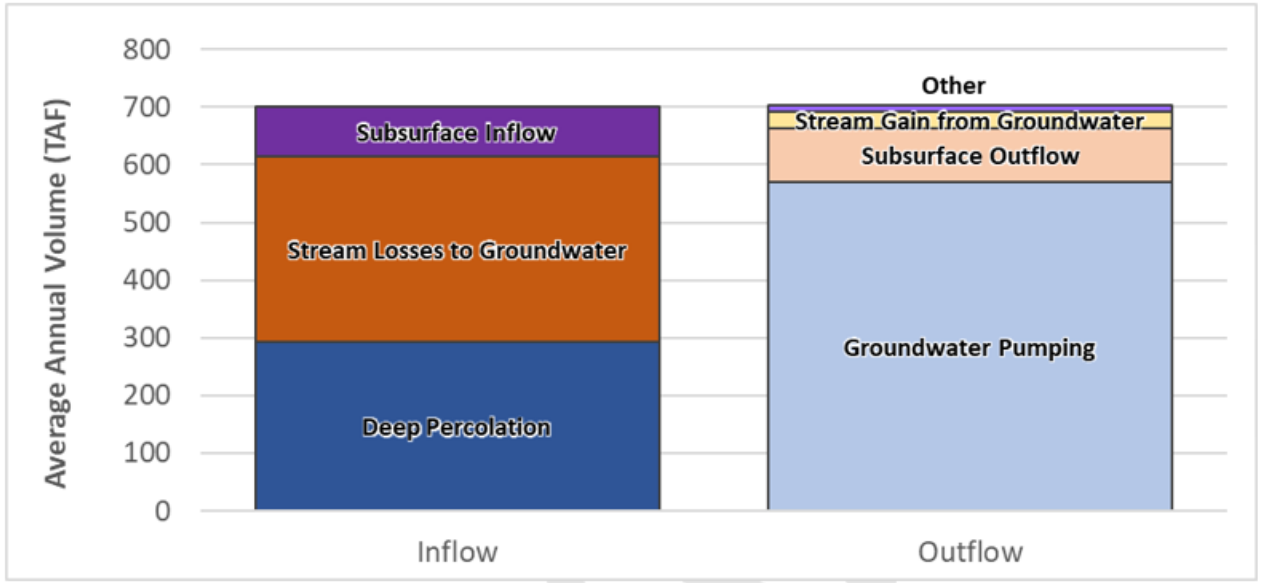
GSP Estimates Sustainable Yield

- Net change in storage over long term = zero
- Sustainable yield estimate: 570,000 AFY
- Assumes projected conditions for land use and population growth with reductions in basin pumping to result in no net change in storage over the long term

Figure ES-6: Groundwater Water Budget under Sustainable Groundwater Management Conditions Long-Term (50-Year) Average Annual



5-yr objectives are being developed by the GSAs on the path to a longer term plan for allocations

- Under SGMA, GSAs have authority to establish groundwater extraction allocations
- SGMA and GSPs adopted under SGMA cannot alter water rights

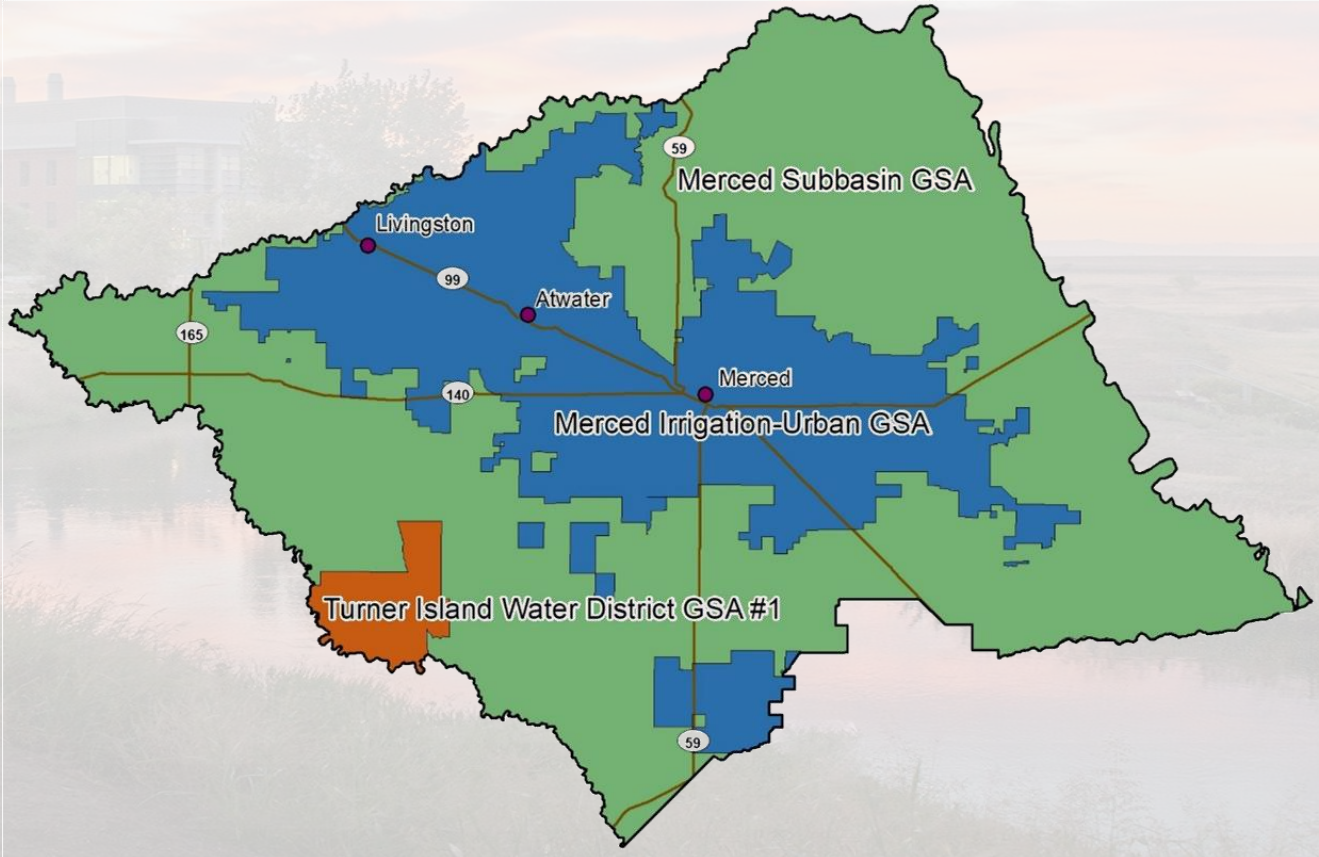


Image courtesy: Veronica Adrover/UC Merced

GSP Identifies Projects that will be Considered to Provide Additional Water

Groundwater recharge projects

- Increase stored groundwater to allow increased pumping for participating agencies

Surface water projects

- Increase availability of surface water to meet water demands (e.g., flood/stormwater management)

Projects to reduce demand

- Decrease water use to reduce need for water beyond available groundwater and surface water (e.g., improved water use efficiency)

Image courtesy: Veronica Adrover/UC Merced

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Priority Projects Identified in GSP

1. Planada Groundwater Recharge Basin Pilot Project – IN PROGRESS
2. El Nido Groundwater Monitoring Wells – IN PROGRESS
3. Meadowbrook Water System Intertie Feasibility Study - COMPLETE
4. Merquin County Water District Recharge Basin
5. Merced Irrigation District to Lone Tree Mutual Water Company Conveyance Canal
6. Merced IRWM Region Climate Change Modeling
7. Merced Region Water Use Efficiency Program
8. Merced Groundwater Subbasin LIDAR - COMPLETE
9. Study for Potential Water System Intertie Facilities from MID to LGAWD and CWD - COMPLETE
10. Vander Woude Dairy Offstream Temporary Storage
11. Mini-Big Conveyance Project - (COMPLETE - combined with project 9)
12. Streamlining Permitting for Replacing SubCorcoran Wells - COMPLETE

Questions for Stakeholder Advisory Committee

1) Are there topics in the GSP you'd like more information on?

2) Do you know where to find the GSP, Annual Reports, and other supporting documents?

GSP Implementation Progress

Image courtesy: Veronica Adrover/UC Merced

Progress Since GSP Submittal

- Annual Reports submitted for WY2019 and WY2020
- Coordination Committee Ad-hoc is discussing 5-yr objectives for each GSA and longer term allocation framework
- Awarded Prop 68 Planning Grant to prepare a Data Gaps Plan and develop a remote-sensing spreadsheet tool to estimate groundwater use.
- Prop 68 SGM Implementation Grant application on draft award list for two priority projects
- Various entities applied for a permanent water rights permit for flood water from the Merced River and other local streams
- MercedWRM model updated with most recent monitoring data

Image courtesy: Veronica Adrover/UC Merced

Prop 68 Implementation Grant Application on Draft Funding List

Southern Merced Groundwater Subbasin Recharge Program

Goal: to improve groundwater levels in the southern portion of the Merced Subbasin through direct and in-lieu groundwater recharge, while also reducing flood risk to underrepresented communities.

Le Grand Athlone-Water District Intertie and Recharge Project

Requested Grant Amount: $4,200,000

Constructs a 2-mile conveyance system linking the MID surface water distribution system to LGAWD and creeks and a new 10-acre recharge basin (Bona Vista Recharge Basin) that will deliver surface water for direct and in-lieu recharge.

El Nido Conveyance System Improvements

Requested Grant Amount: $764,000

Provides conveyance improvements at four siphons/pipelines in MID's El Nido Conveyance System to allow more surface water to be diverted from Mariposa Creek to the El Nido area for direct and in-lieu groundwater recharge

DWR Next steps:

- Draft funding list for Round 1 included full funding of Merced Projects
- Final grant awards in **May 2021**

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WY2020 Annual Report Summary

Image courtesy: Veronica Adrover/UC Merced

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Sustainable Management Criteria Status

Sustainability Indicator	Minimum Threshold (MT)	Measurable Objective (MO)	Undesirable Result	WY 2020 Annual Report Status
Groundwater Levels	Depth of shallowest well in a 2-mile radius of each representative well or minimum pre-January 1, 2015, elevation	Projected average future groundwater level under sustainable yield modeling simulation	Greater than 25% (6) of representative wells fall below MT in 2 consecutive wet, above normal, or below normal years[1]	No wells exceeded MT. 9 wells exceeded MO.
Groundwater Storage	Not applicable - not present and not likely to occur in the Subbasin due to the significant volumes of freshwater in storage			
Seawater Intrusion	Not applicable - not present and not likely to occur due to the distance between the Subbasin and the Pacific Ocean (and Sacramento-San Joaquin Delta)			
Degraded Water Quality	1,000 mg/L TDS	500 mg/L TDS	At least 25% (4) of representative wells exceed MT for 2 consecutive years	No wells exceeded MT. 2 wells exceeded MO.
Land Subsidence	-0.75 ft/year	-0.25 ft/year	Exceedance of MT at 3 or more representative sites for 2 consecutive years	No sites exceeded MT. 4 of 4 sites exceeded MO.
Depletions of Interconnected Surface Waters	Groundwater levels used as a proxy for this sustainability indicator			

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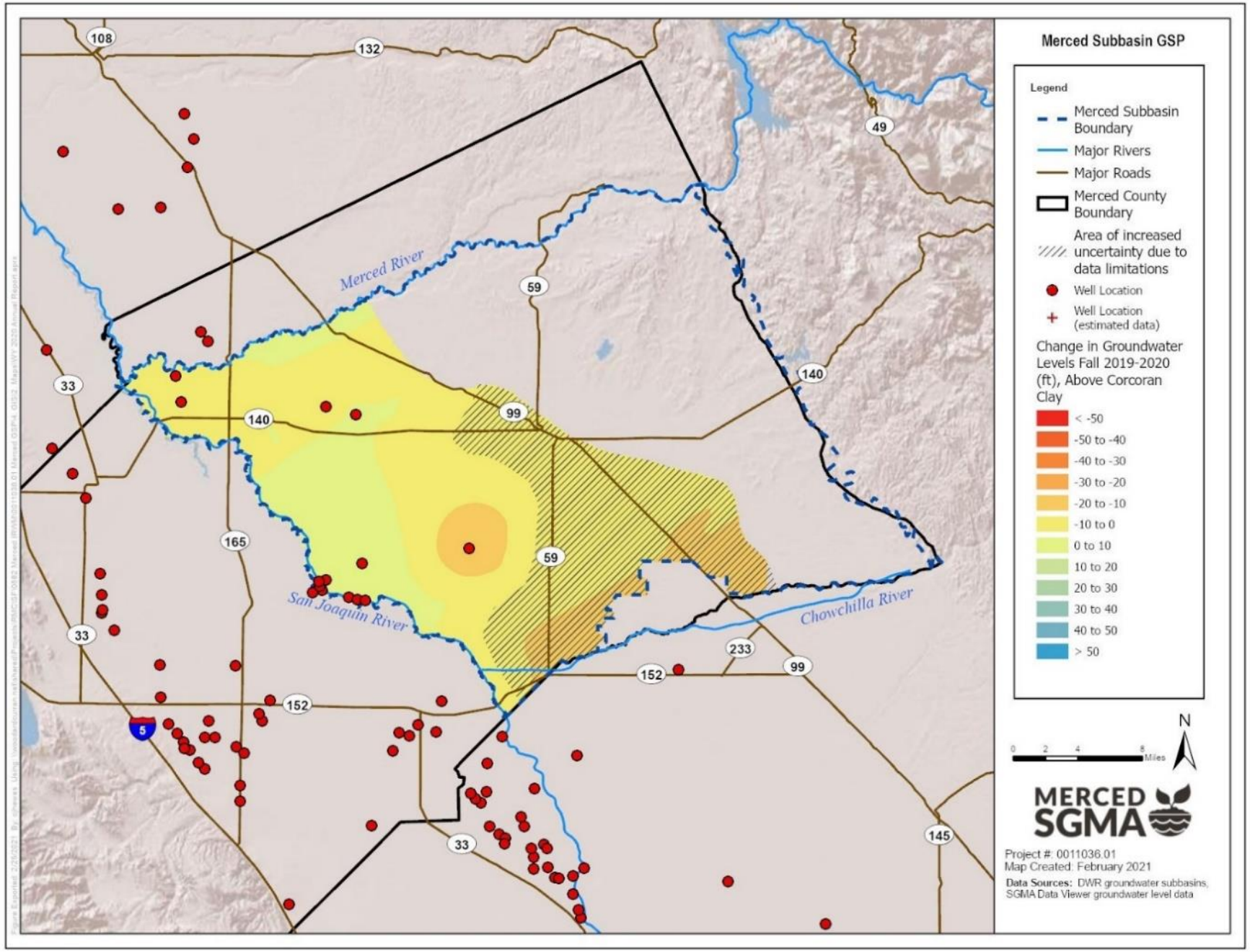
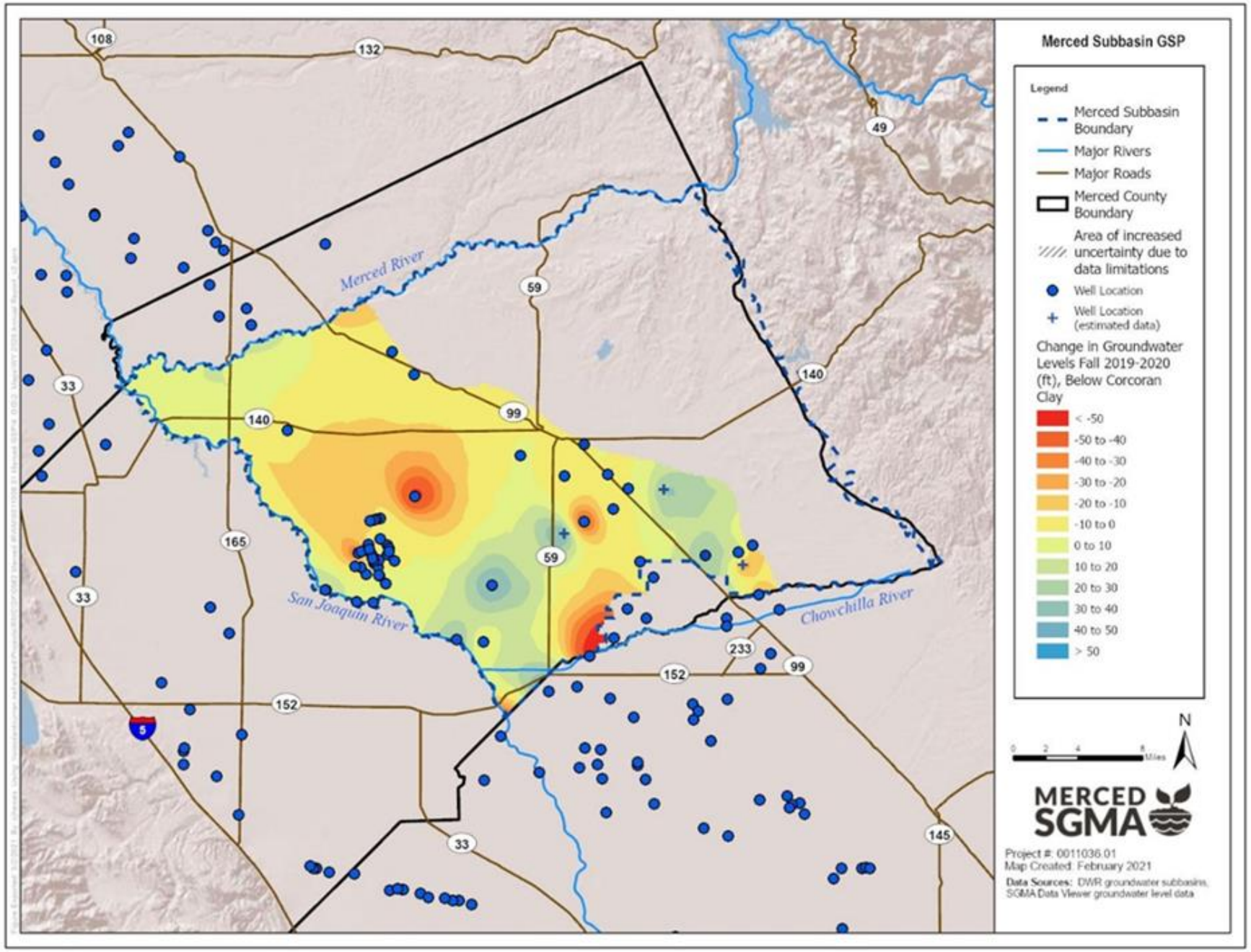
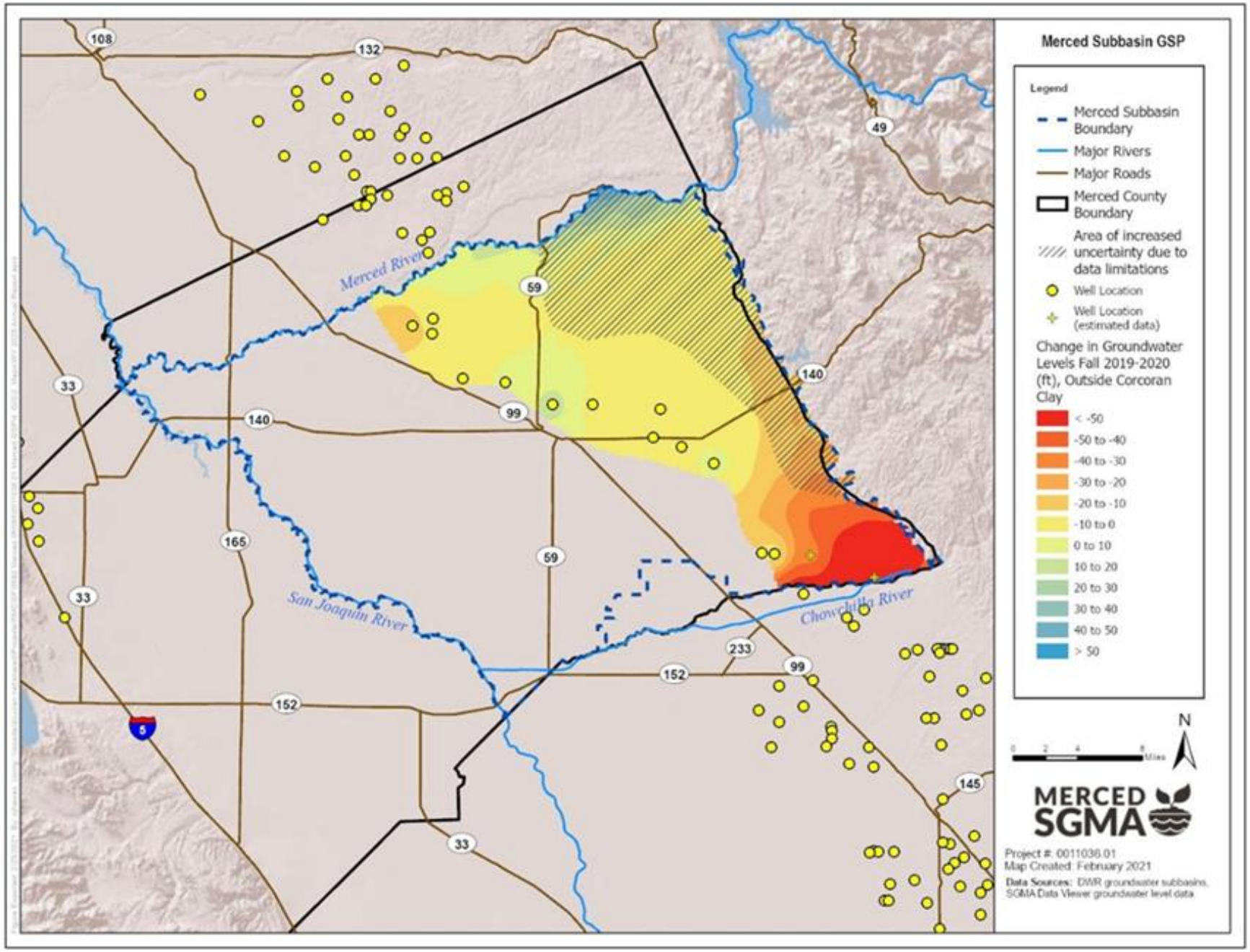
Groundwater Levels – Above Corcoran Clay



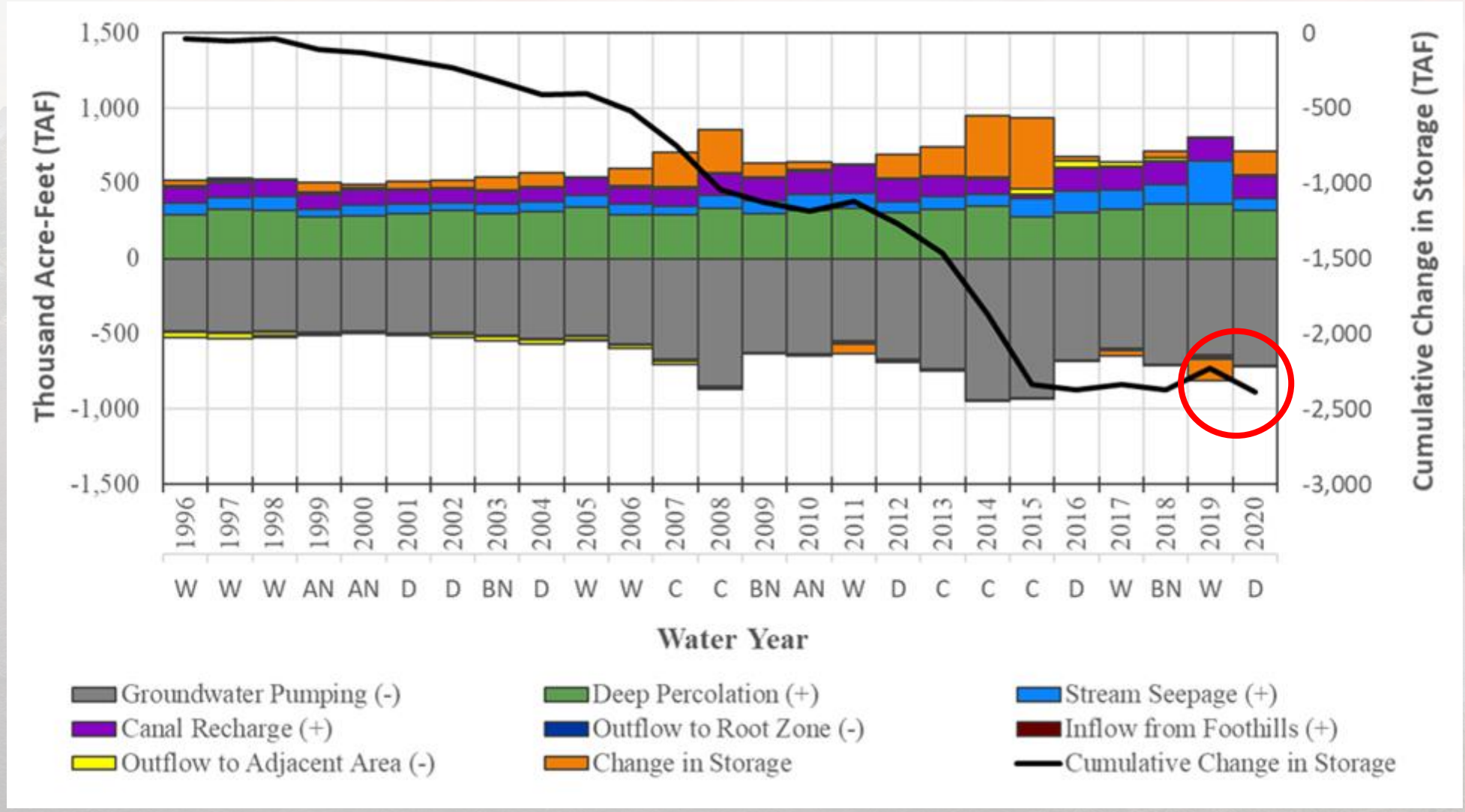
Groundwater Levels – Below Corcoran Clay



Groundwater Levels – Outside Corcoran Clay



Change in Storage



Questions for Stakeholder Advisory Committee

1) What conditions are you observing in your area of the basin?

2) What are your biggest concerns related to groundwater conditions?

What's Next? Data Gap Plan

Image courtesy: Veronica Adrover/UC Merced

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Purpose & Goal

- **Purpose –** Improve scientific understanding of Subbasin to support ongoing basin management and policy making

- **Goal –** Develop a plan that identifies and ranks priority areas for the installation of monitoring wells or subsidence monitoring stations to support basin characterization and future GSP refinement.

Image courtesy: Veronica Adrover/UC Merced

Data needs identified in GSP

- Better understand groundwater levels in poorly monitored portions of the subbasin
- Improve characterization of groundwater quality without duplicating other efforts
- Better understand depth at which subsidence is occurring
- Better understanding of shallow groundwater condition near GDEs and rivers
- Others
  - Inter-basin flows
  - Model improvement
  - Agro-climate station (e.g. CIMIS station)
  - Areas of interest (e.g., high pumping areas, groundwater level depressions, significant recharge areas, specific projects)

Image courtesy: Veronica Adrover/UC Merced

Data Gaps Plan Development – Process

1. Describe data gap areas
2. Use ranking and weighting methodology to prioritize different needs (e.g., groundwater levels, subsidence, interconnected surface water)
3. Prepare an Implementation Plan which lays out next steps for filling priority data gaps
4. Draft Plan by June 2021

Image courtesy: Veronica Adrover/UC Merced

Groundwater Level Data Gap Approach

- Monitoring wells are expensive – prioritize use of existing facilities where possible
- Monitoring well siting can be challenging – flexibility is necessary on siting
- Funding or partnering opportunities can lead to wells in good areas rather than great areas
- Each facility that joins the network “changes the map.”
- Plan will be flexible and adaptable to guide efforts moving forward
- A number of folks in the basin have reached out to the GSAs with information about potential wells that could be added to network. The GSAs and Woodard & Curran are following up.

Image courtesy: Veronica Adrover/UC Merced

Groundwater Level – Data Gaps

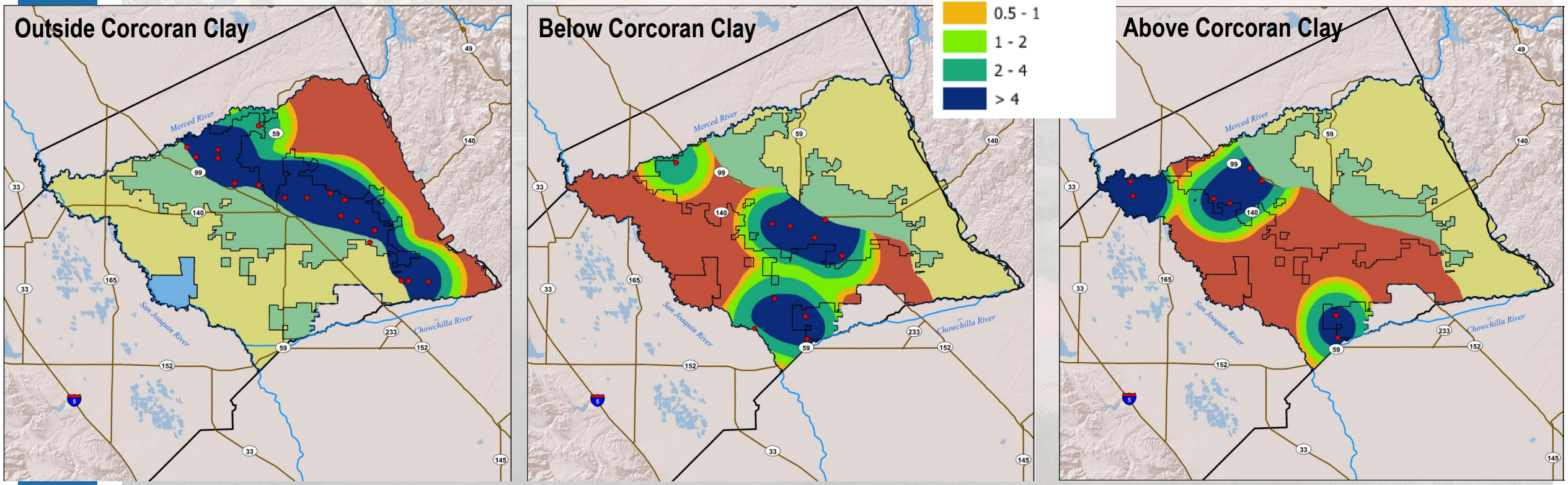
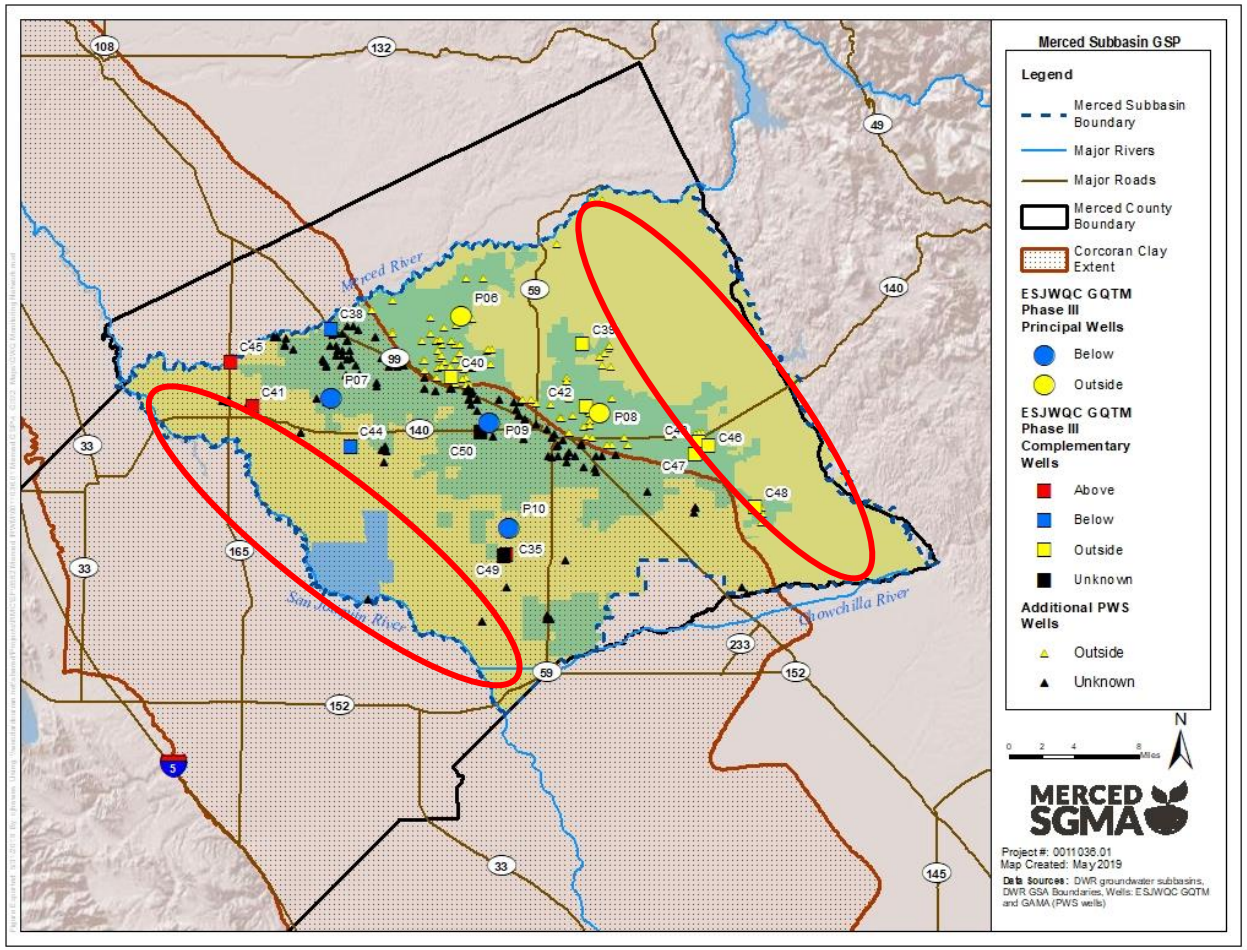


Image courtesy: Veronica Adrover/UC Merced

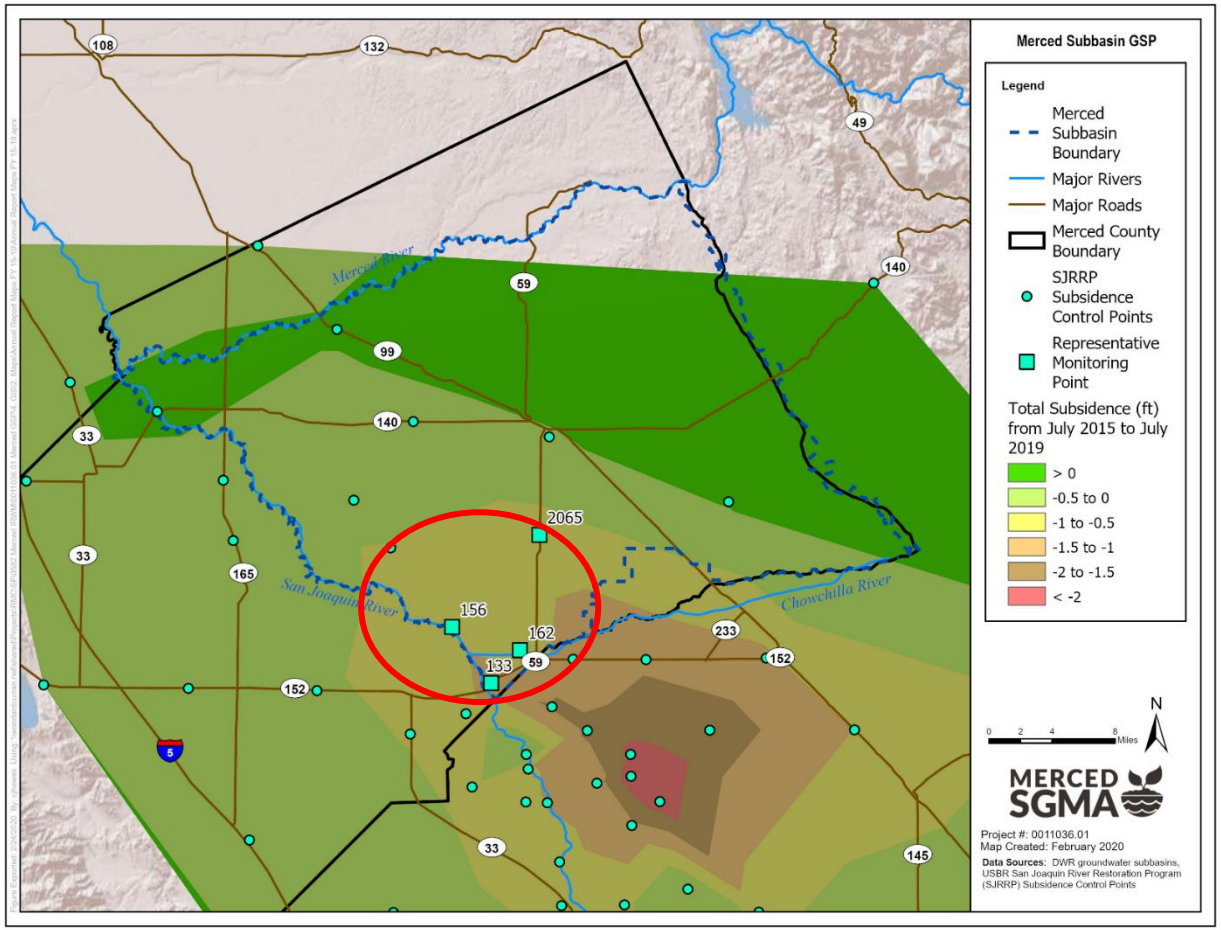
Groundwater Quality – Data Gaps



- Areas of interest:
  - Target areas with maximum contaminant level concentrations for TDS.
- Approach to filling gaps
  - Attempt to fill quality and levels gaps with the same facilities
  - Consideration of video surveys
  - Coordination with other programs

Image courtesy: Veronica Aguilera/UC Merced

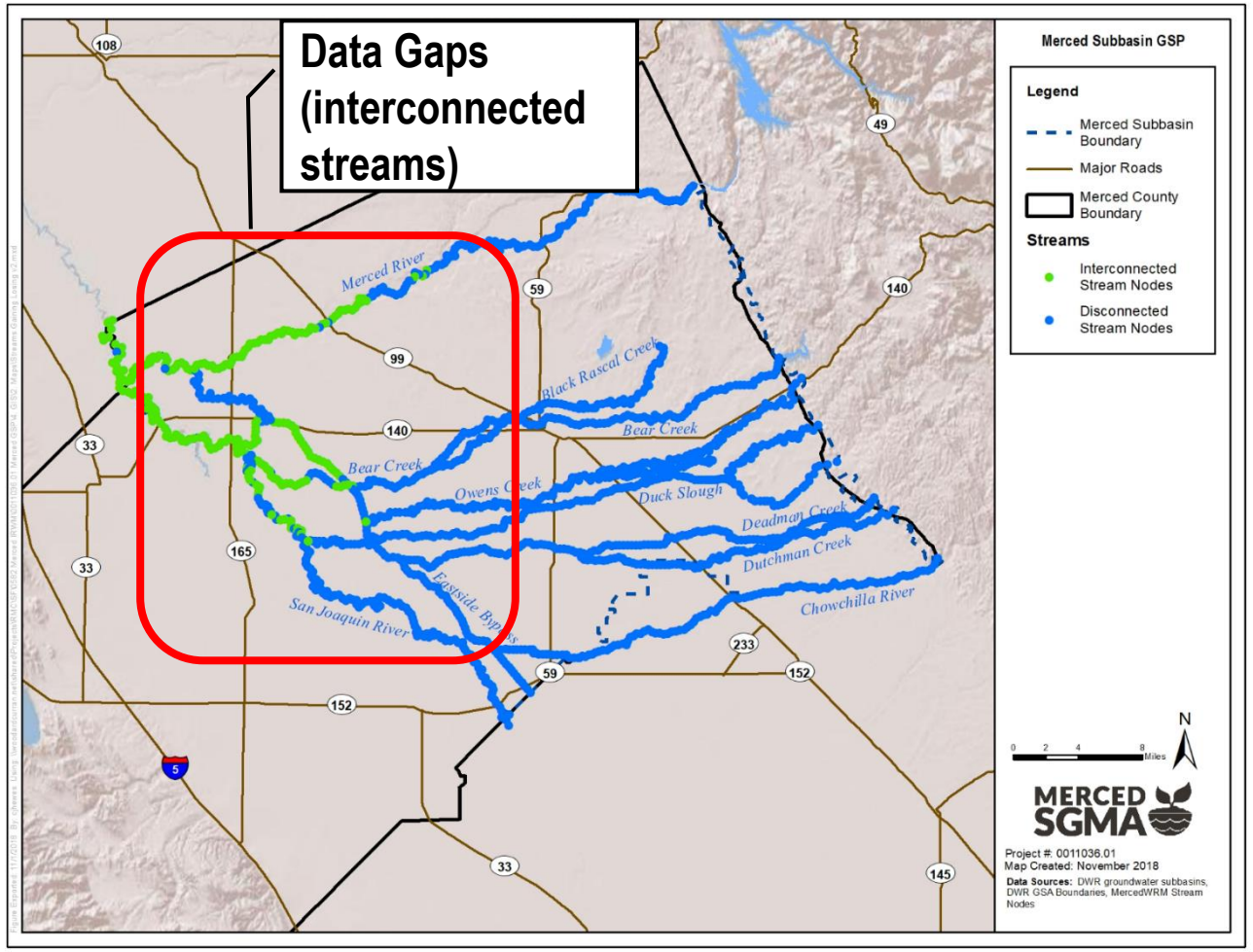
Land Subsidence – Data Gap Areas



- Need to understand depth at which subsidence is occurring.
- Construct and use borehole extensometers.

Image courtesy: Veronica Ador/UC Merced

Interconnected Surface Waters – Data Gap Areas



- Areas near the transition from connected to interconnected streams can benefit from additional shallow groundwater monitoring
- Pair with other gap efforts

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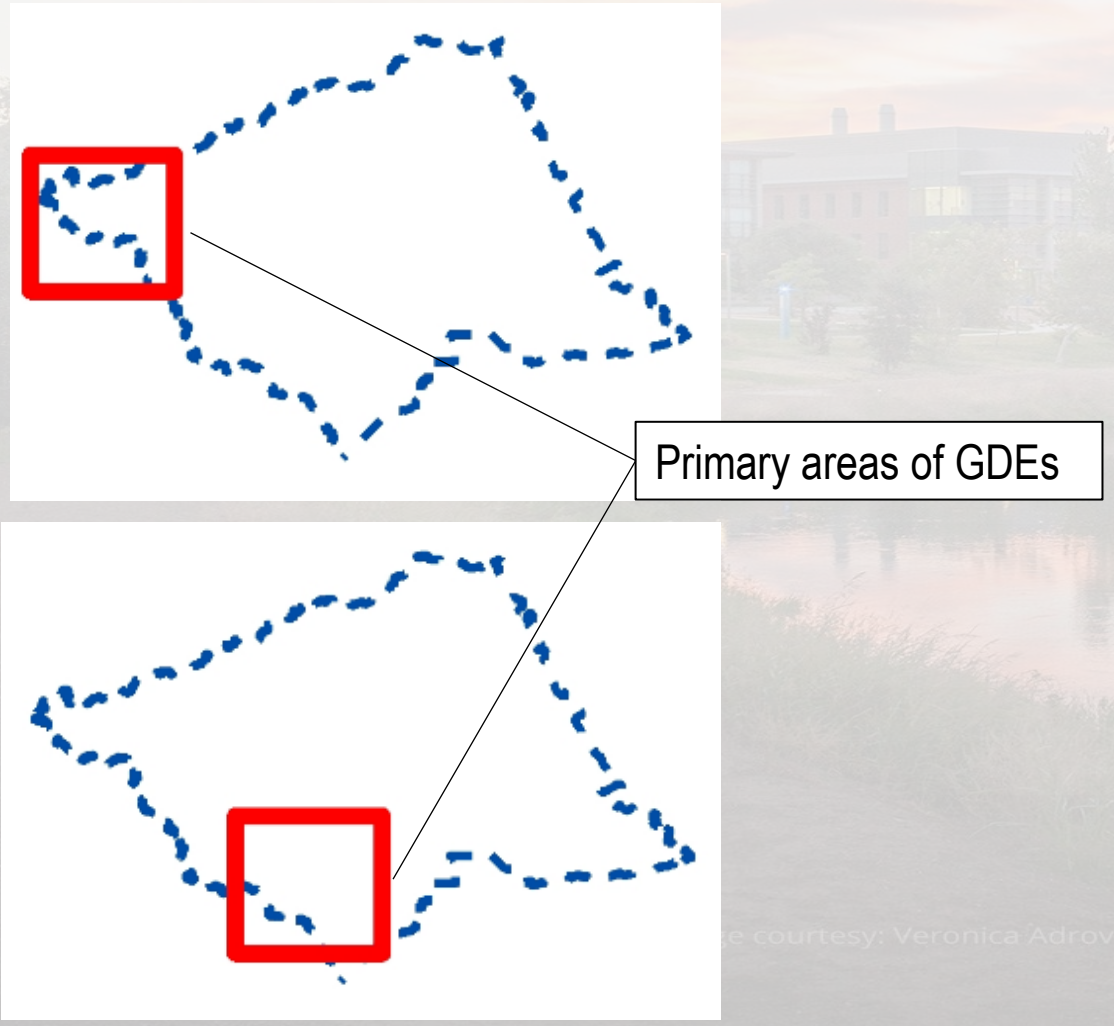
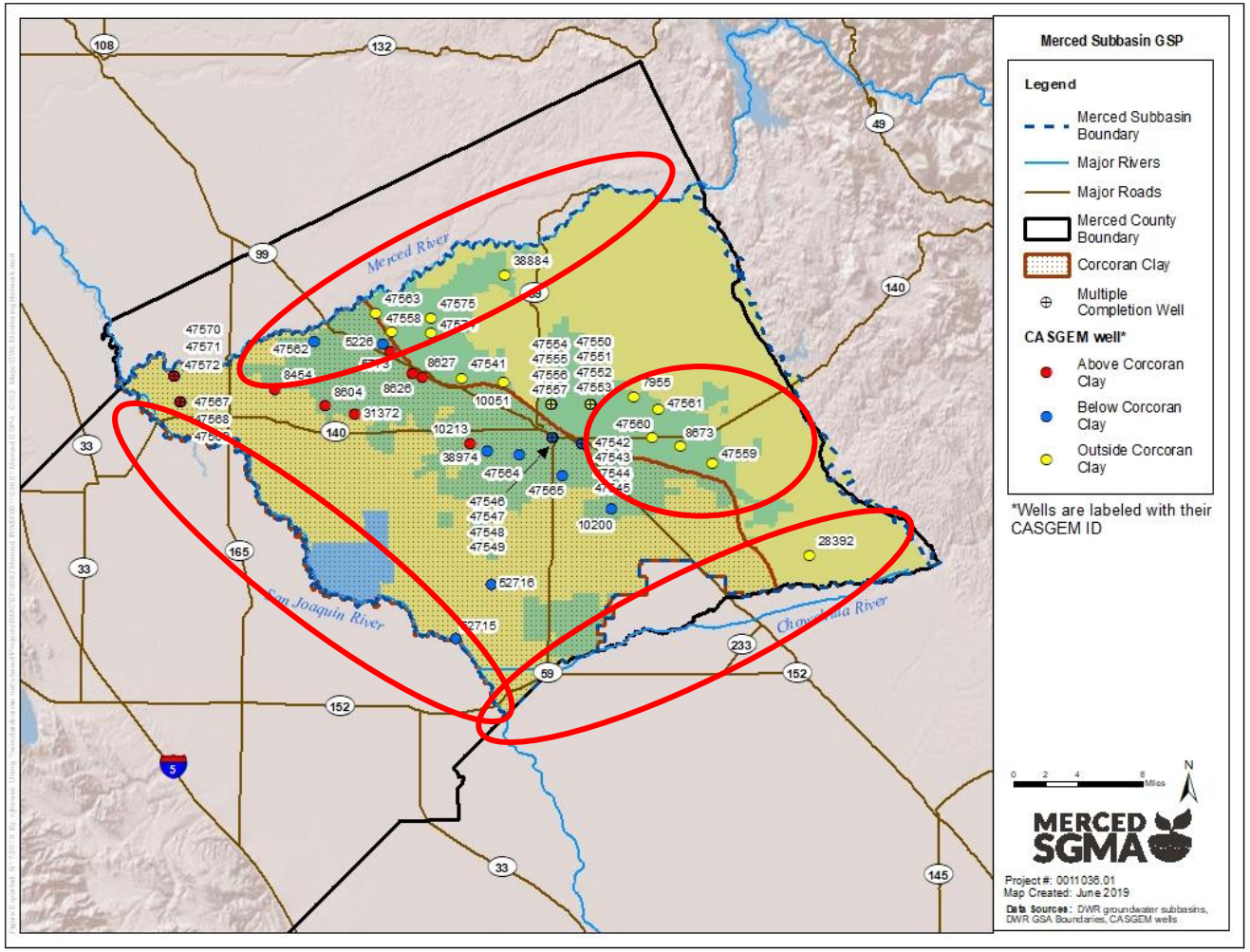
Groundwater-Dependent Ecosystems (GDEs)



- Shallow groundwater level data gaps
- Ecosystem health data gaps

e courtesy: Veronica Adrover/UC Merced

Inter-basin Flows/Model Data Gaps



- Need better flow information at the Subbasin boundary
- Lack of hydrogeologic information in area Outside Corcoran Clay

Questions for Stakeholder Advisory Committee

1) Given limited resources to spend to address Data Gaps, where would you prioritize those dollars?

2) Is there anything else you'd like us to consider as we prepare the draft Data Gaps Plan?

Future Stakeholder Advisory Committee Meetings

Image courtesy: Veronica Adrover/UC Merced

Public Comment

Image courtesy: Veronica Adrover/UC Merced

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Next Steps

Image courtesy: Veronica Adrover/UC Merced

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What's coming up next?

- Coordination Committee meets on April 26 at 1:15pm
- Adjourn to next Stakeholder Advisory Committee meeting: July – date TBD

Image courtesy: Veronica Adrover/UC Merced

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