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# GSP Stakeholder Committee

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Stakeholder Committee Meeting – June 25, 2018

Image courtesy: Veronica Adrover/UC Merced





# Agenda

- Welcome and Introductions
- GSP Development Elements and Approach
- Stakeholder Outreach and Engagement Strategy
- Merced Subbasin Overview
  - Plan Area Information
  - Historical Groundwater Conditions
- Groundwater Sustainability Goals
- Stakeholder Committee Procedures
- Public Comment on Items not on the Agenda
- Next Steps and Next Meeting
  - Historical Water Budget
  - Undesirable Results



Image courtesy: Veronica Adrover/UC Merced

# Stakeholder Committee Meeting Agreements

## Guidelines for successful meetings

- Civility is required.
  - Treat one another with courtesy and respect for the personal integrity, values, motivations, and intentions of each member.
  - 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.
  - Delay will not be employed as a tactic to avoid an undesired result.

Image courtesy: Veronica Adrover/UC Merced





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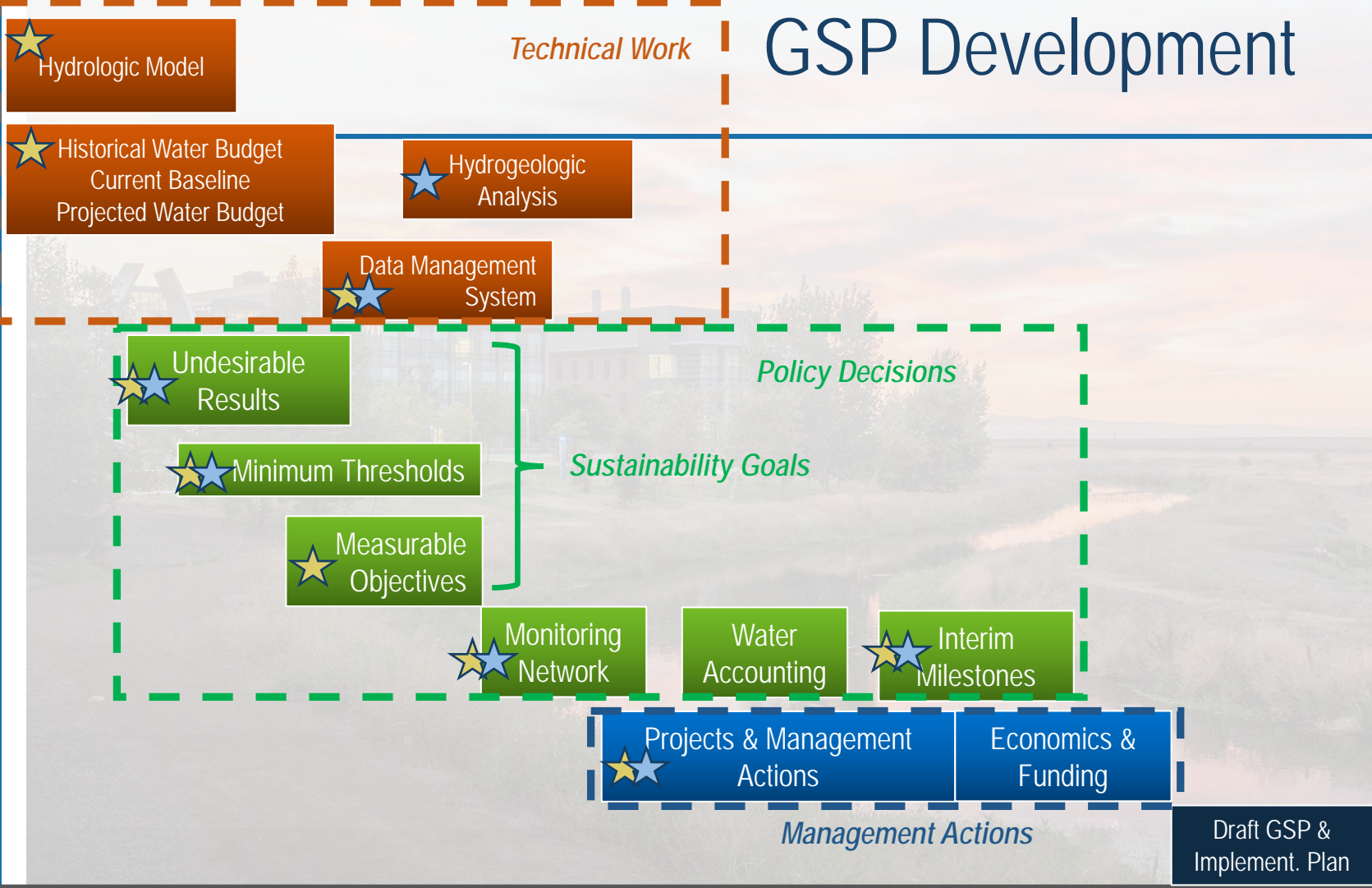
# GSP Development Approach

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Image courtesy: Veronica Adrover/UC Merced



# GSP Development



Jun 2018 Jul 2018 Aug 2018 Sep 2018 Oct 2018 Nov 2018 Dec 2018 Jan 2019 Feb 2019 Mar 2019 Apr 2019 May 2019 Jun 2019 Jul 2019

Image courtesy: Veronica Adrover/UC Merced





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# Stakeholder Outreach & Engagement Strategy

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Image courtesy: Veronica Adrover/UC Merced

# Merced GSP Outreach Structure

- GSA Leadership – overall authority for decision-making, GSP development and implementation
- Coordinating Committee – Advise on plan development and recommendations to decision-makers
- Stakeholder Committee – Represent diverse stakeholders in basin and provide input to inform plan development
- Public workshops – Building awareness and understanding; emphasis on engagement of DACs





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# Outreach and Engagement Activities

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- GSA Governing Bodies and Coordinating Committee
- Stakeholder Committee
- Public Workshops and Briefings
  - First workshop August XX
- GSP Website
- Organizational Partnerships
  - Notification and information
  - Briefings and engagement
- Media and social media

Image courtesy: Veronica Adrover/UC Merced



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# Outreach and Engagement Partnerships

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- County of Merced
- City of Merced
- City of Livingston
- City of Atwater
- Merced Irrigation District (MID)
- Greater Merced Chamber of Commerce
- Merced County Hispanic Chamber of Commerce
- Merced County Farm Bureau
- Merced/Mariposa Cattlemen's Association
- East Merced Resource Conservation District (RCD)
- Self Help Enterprises
- Leadership Counsel for Justice & Accountability

Image courtesy: Veronica Adrover/UC Merced



# Disadvantaged Community Outreach and Engagement

## Partially Represented Communities

- City of Merced
- City of Livingston
- City of Atwater
- Planada
- Stevinson
- Winton

## Other Communities

- El Nido
- LeGrand
- Franklin/Beachwood
- Bear Creek/Celeste
- The Grove
- Tuttle

Outreach, engagement, and translation to inform and involve community members

Image courtesy: Veronica Adrover/UC Merced





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# Plan Area Information

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Image courtesy: Veronica Adrover/UC Merced



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# Plan Area and Authority

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- Plan Area describes:
  - Plan Area definition and setting
  - Existing surface water and groundwater monitoring programs
  - Existing water management programs
  - General Plans in the Plan Area
  - Other water planning efforts in the Plan Area

Image courtesy: Veronica Adrover/UC Merced

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# Plan Area and Authority

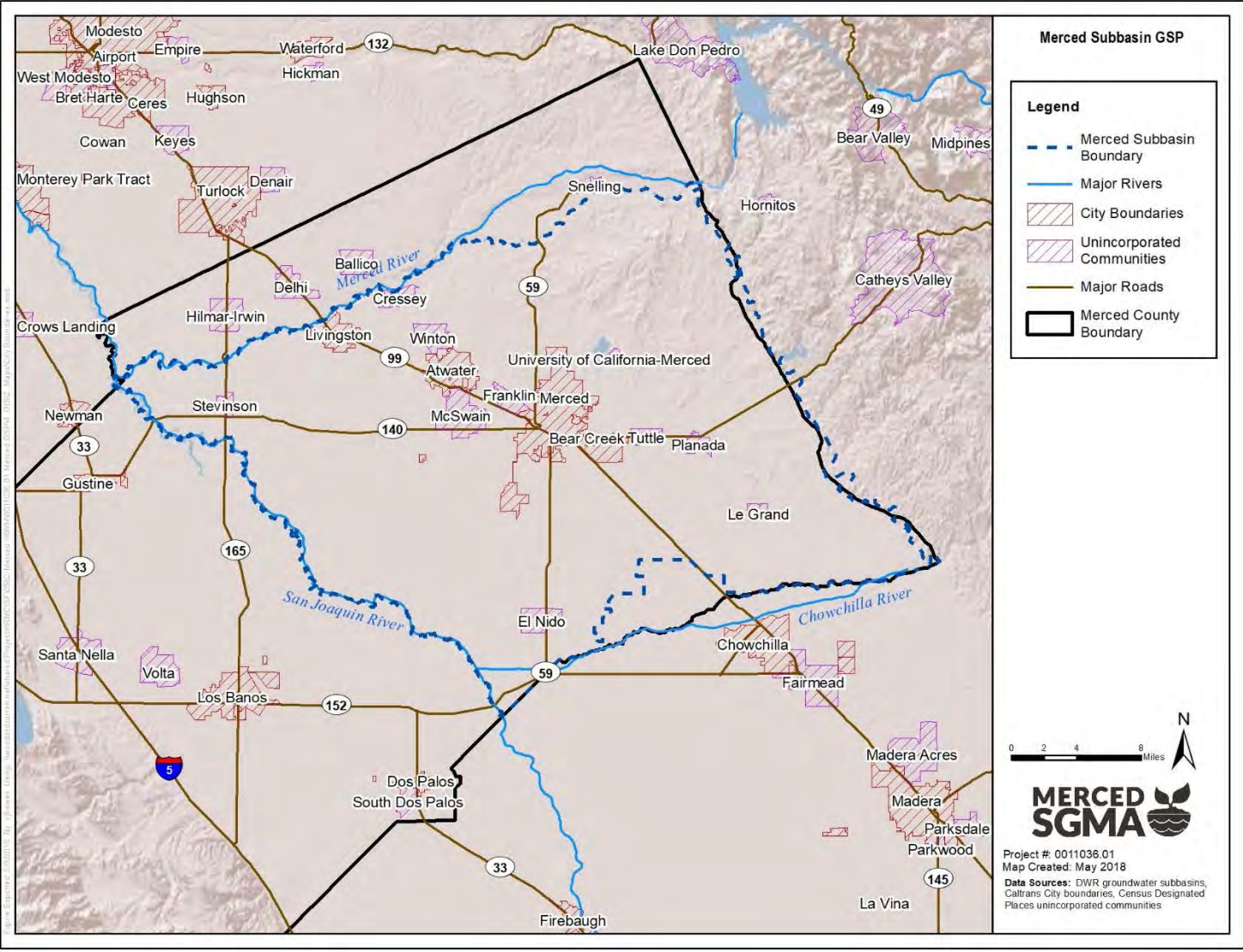
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- Authority describes:
  - GSAs and their organization
  - Governance and Management Structure
  - Legal Authority of GSAs

Image courtesy: Veronica Adrover/UC Merced



# Merced Subbasin Boundaries



# Merced Subbasin – 3 GSAs, 1 GSP

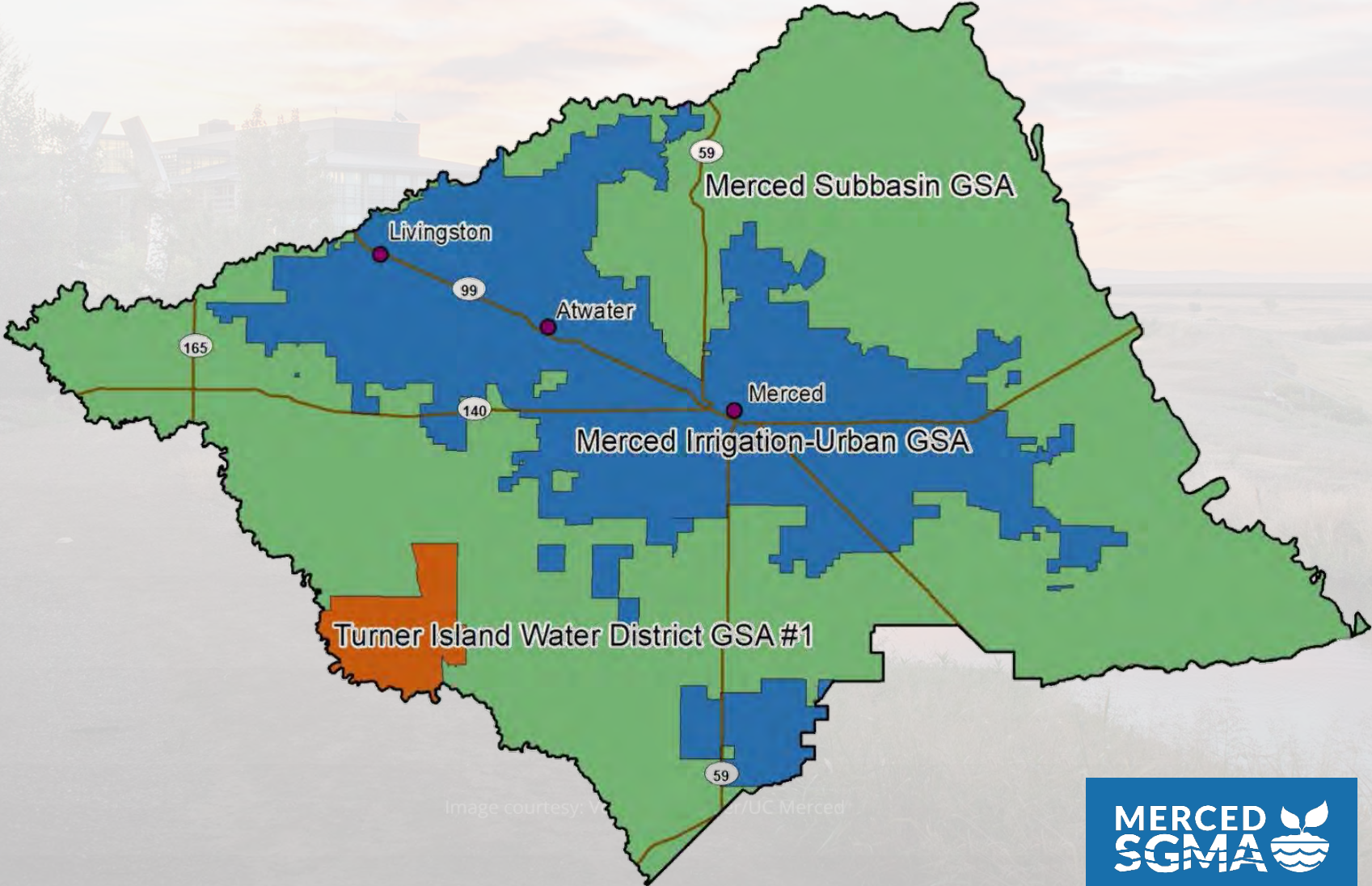
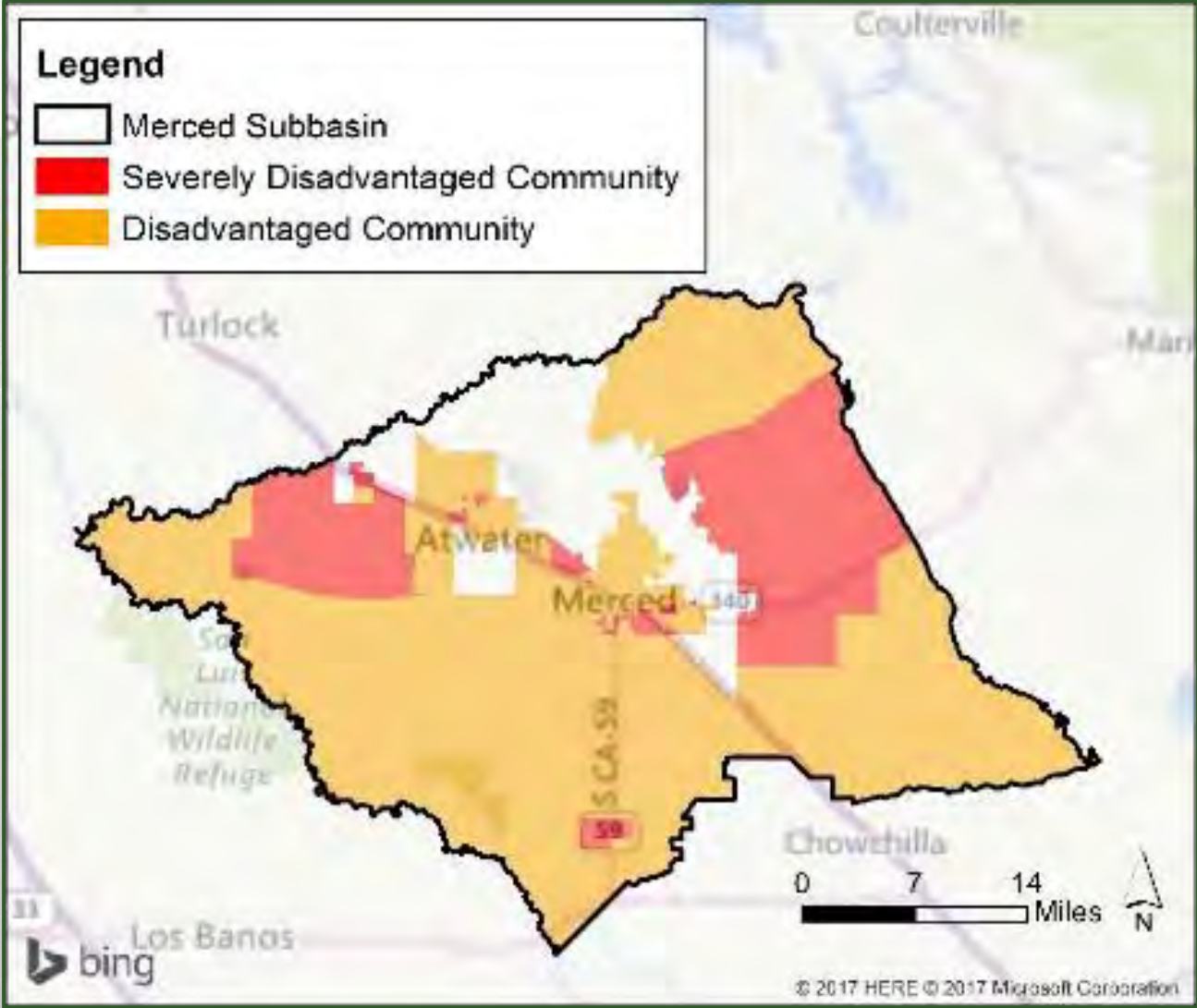


Image courtesy: UC Merced





# Subbasin Disadvantaged Communities



# Land Use

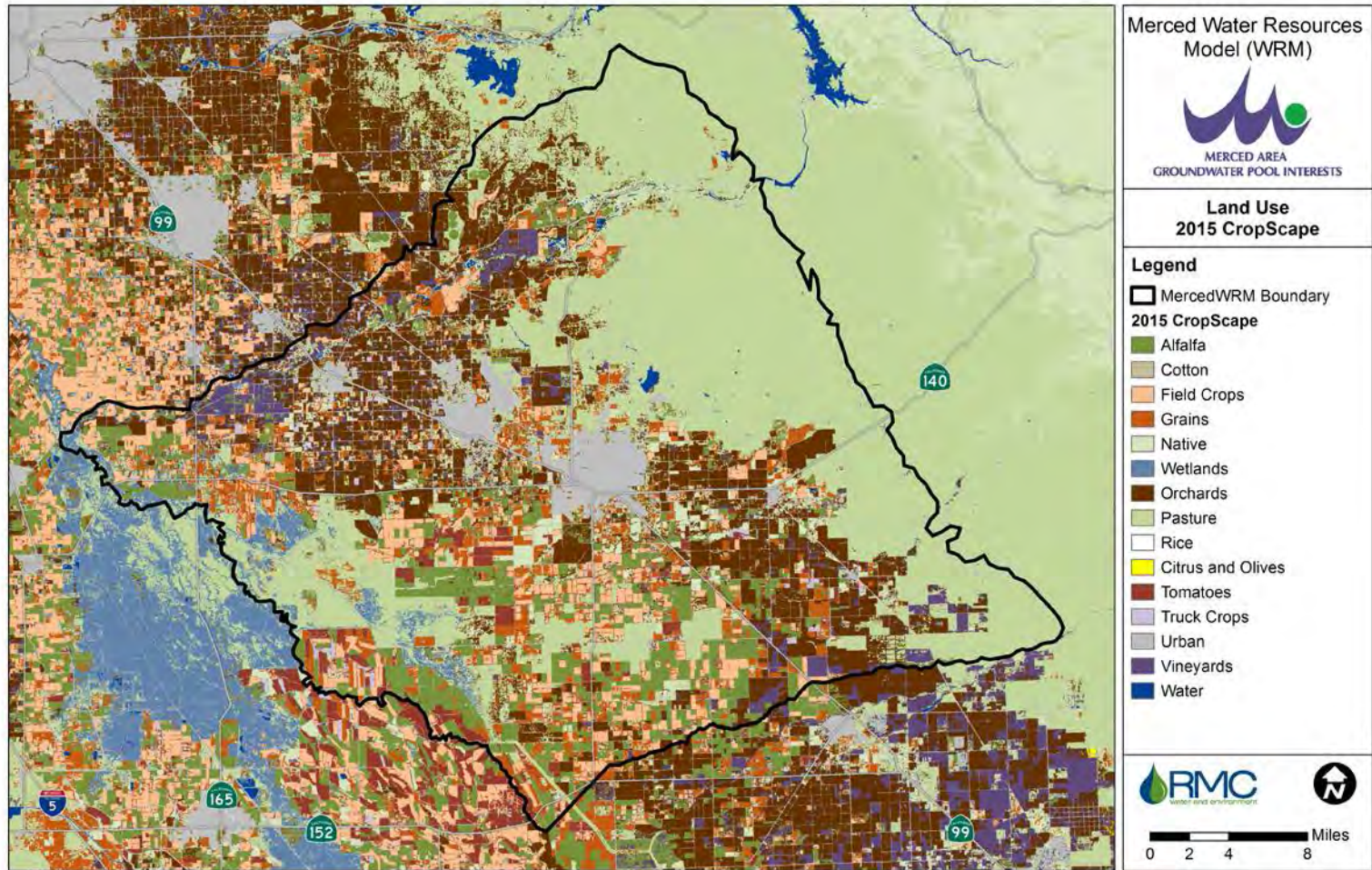


Image courtesy: Veronica Adrover/UC Merced



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# Cities of Atwater, Livingston, and Merced

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- City of Atwater
  - Municipal water system utilizes local groundwater wells
  - Groundwater injected with chlorine, but no other treatment prior to delivery
  - 11 wells, 9 active, 2 on standby due to DBCP
- City of Livingston
  - Groundwater is currently sole source of water supply
  - 8 wells total (7 active, 1 emergency standby)
  - Groundwater impacted by DBCP, one location impacted by nitrates
  - Considering combination of centralized well head and surface water treatment from MID
- City of Merced
  - Groundwater is sole source of water supply
  - 22 active wells, 4 impacted by either arsenic, a gasoline additive, or nitrates
  - Anticipated use of small amount of surface water from MID

Image courtesy: Veronica Adrover/UC Merced

# Le Grand and Planada Community Services Districts

- Le Grand Community Services District
  - Community supplied by 3 wells
- Planada Community Services District
  - Municipal water supplied by 5 wells
  - Groundwater is chlorinated before sent through pressurized system

Image courtesy: Veronica Adrover/UC Merced





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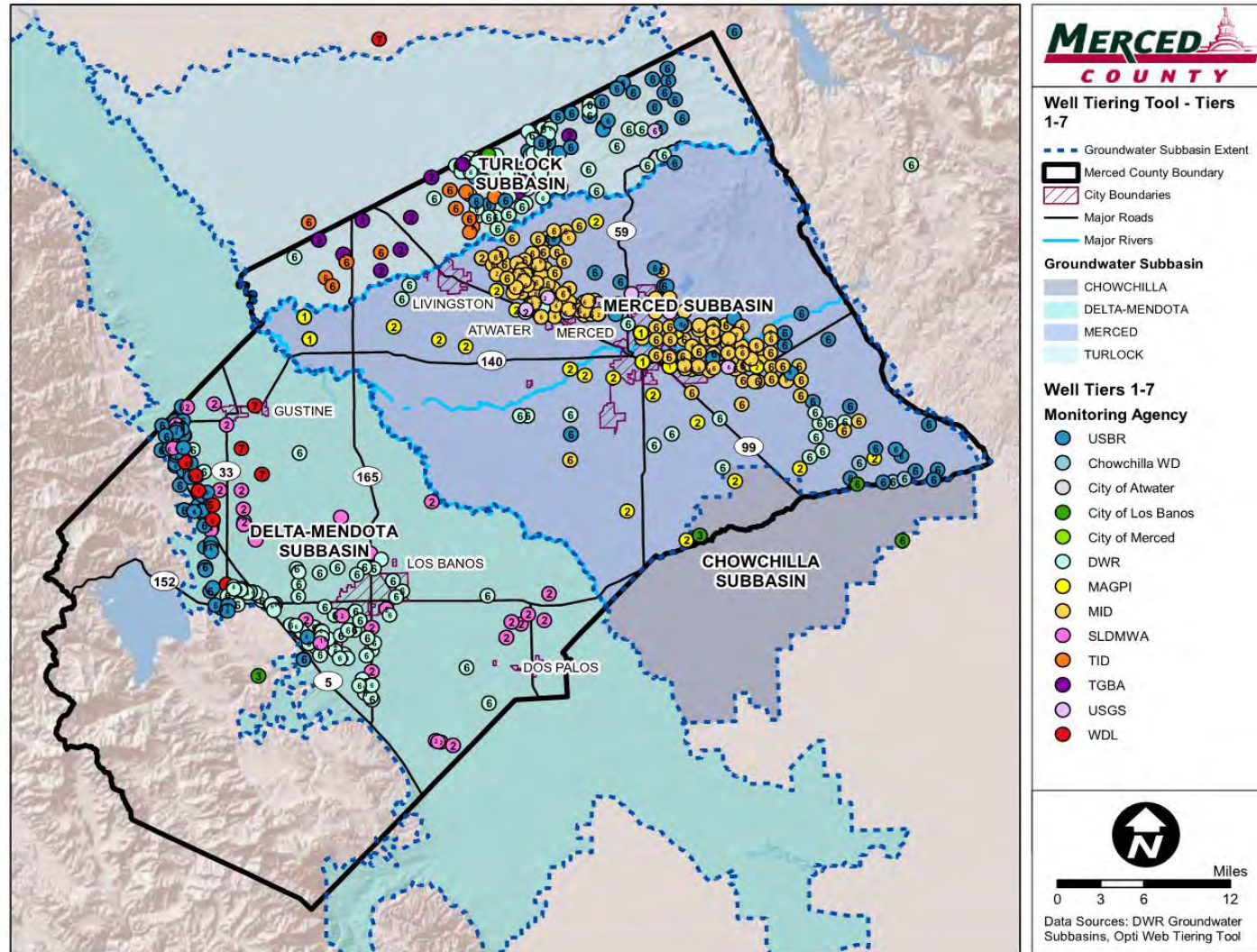
# Groundwater Conditions

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Image courtesy: Veronica Adrover/UC Merced



# Existing Groundwater Monitoring Wells





# What do we already know about groundwater in the Subbasin?



Chronic Lowering of Groundwater Levels



Reduction in Groundwater Storage



Seawater Intrusion



Degraded Water Quality



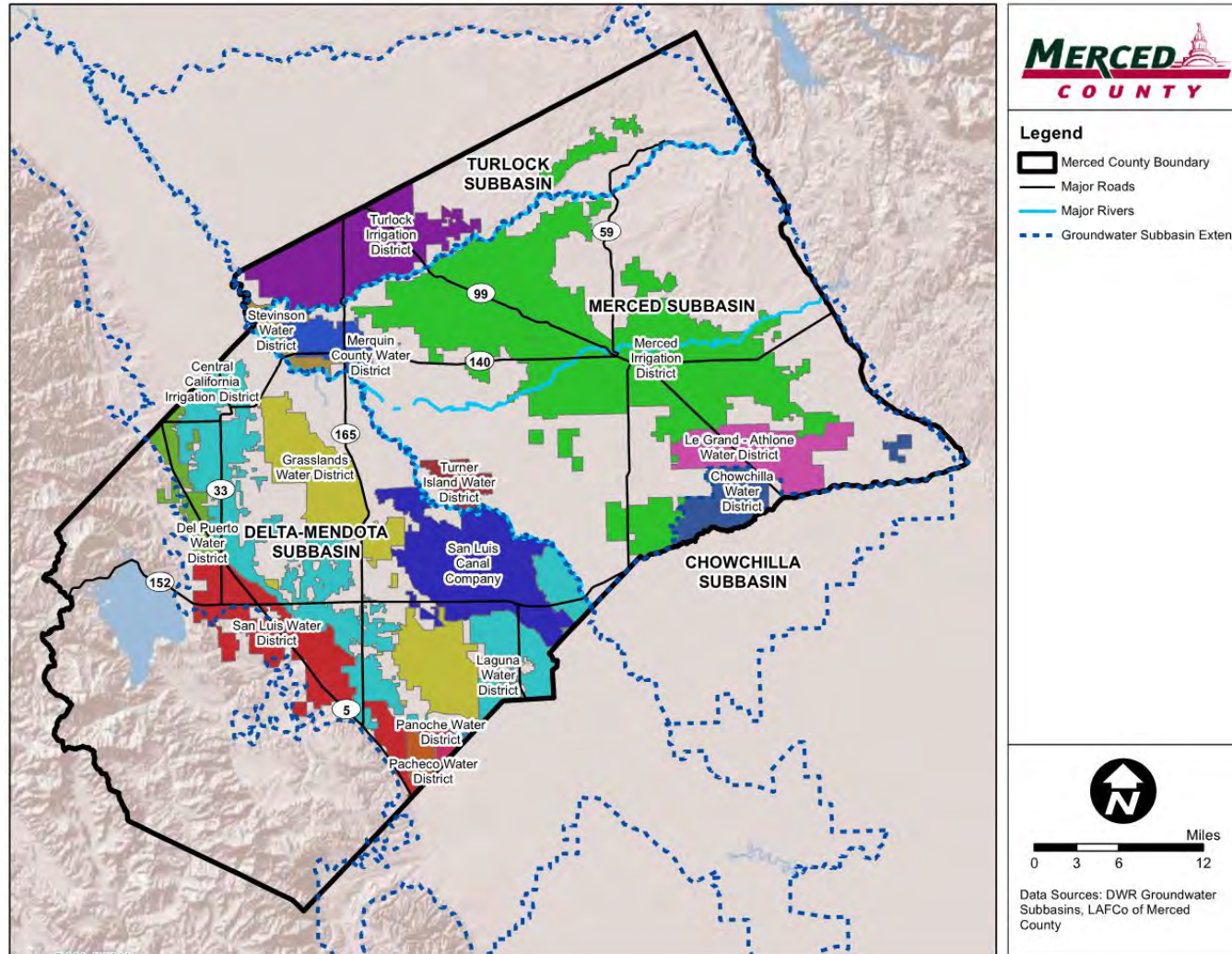
Land Subsidence



Depletion of Interconnected Surface Water

Image courtesy: Veronica Adrover/UC Merced

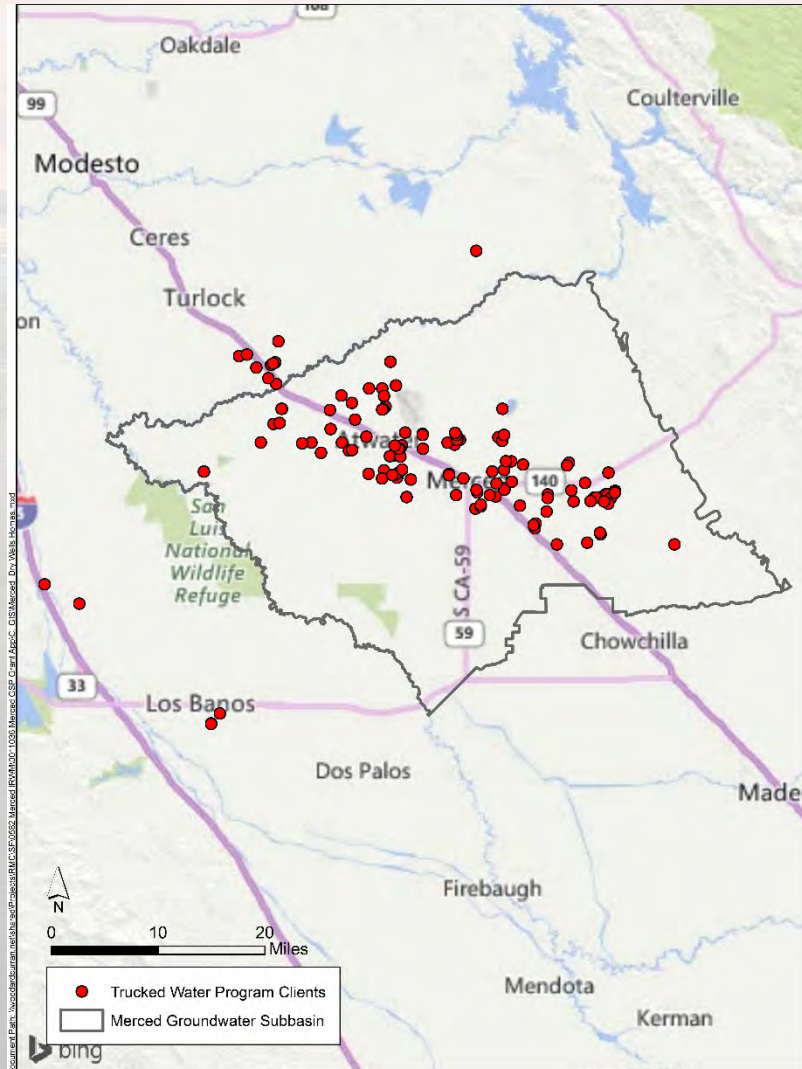
# Entities with surface water supplies



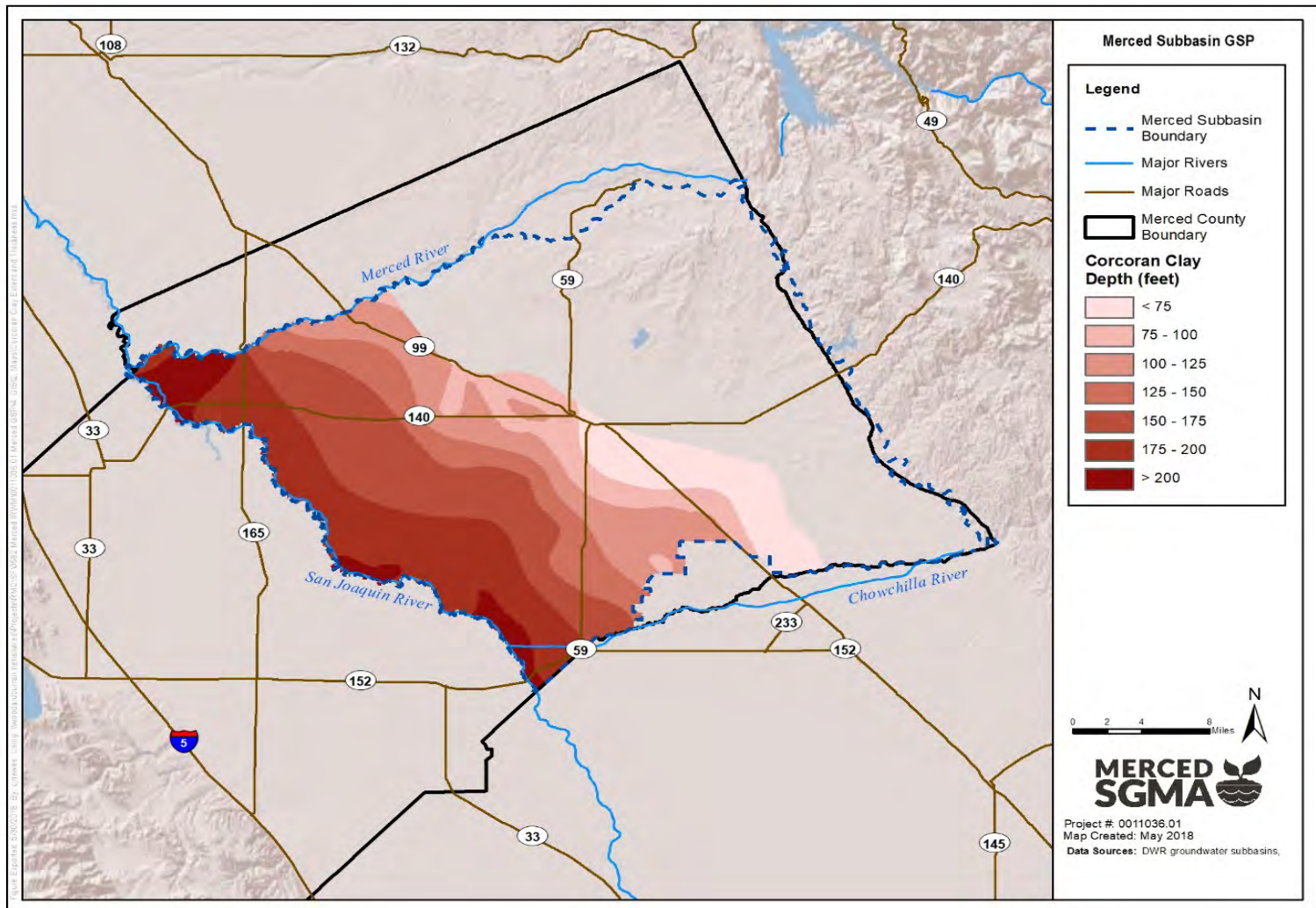


# Trucked Water Program Required due to Low Groundwater Elevations

## Trucked Water Program

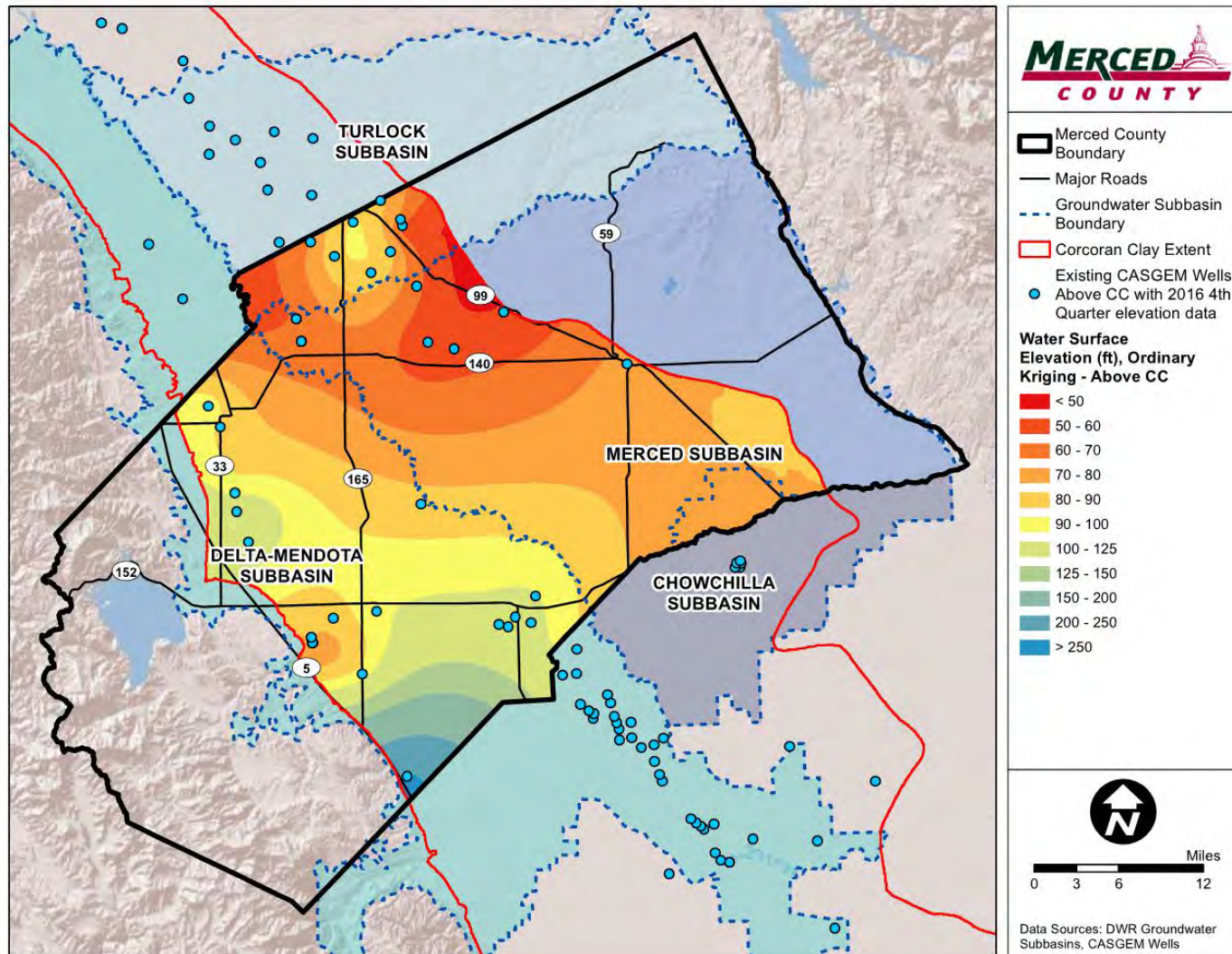


# Depth of Corcoran Clay



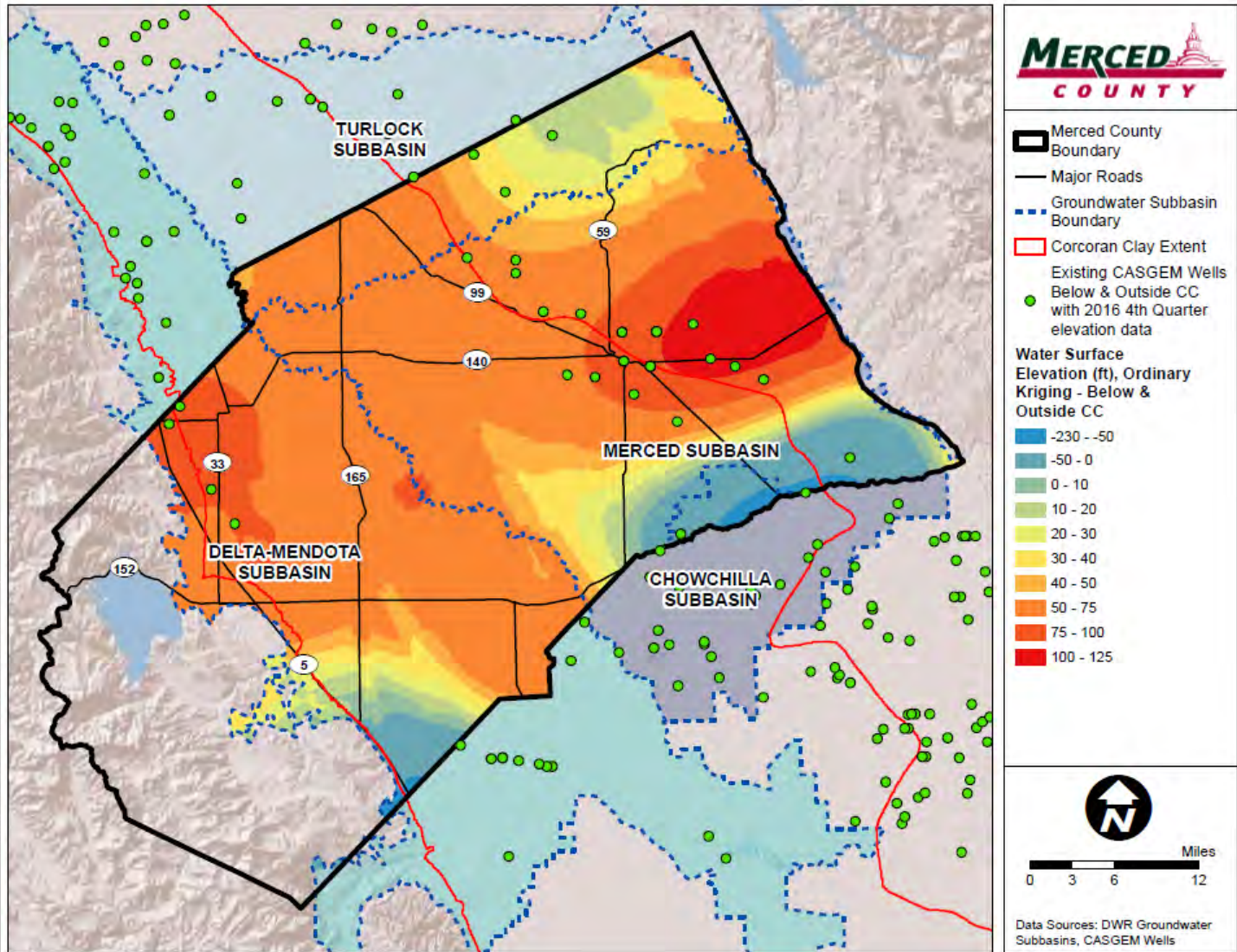


# Current Conditions: Groundwater Elevations Above Corcoran Clay





# Current Conditions: Groundwater Elevations Below Corcoran Clay





# What do we already know about groundwater in the Subbasin?





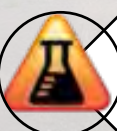


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-  Chronic Lowering of Groundwater Levels
  -  Reduction in Groundwater Storage
  -  Seawater Intrusion
  -  Degraded Water Quality
  -  Land Subsidence
  -  Depletion of Interconnected Surface Water

Image courtesy: Veronica Adrover/UC Merced

# Total Storage in the Subbasin is Significant...the Challenge is Access

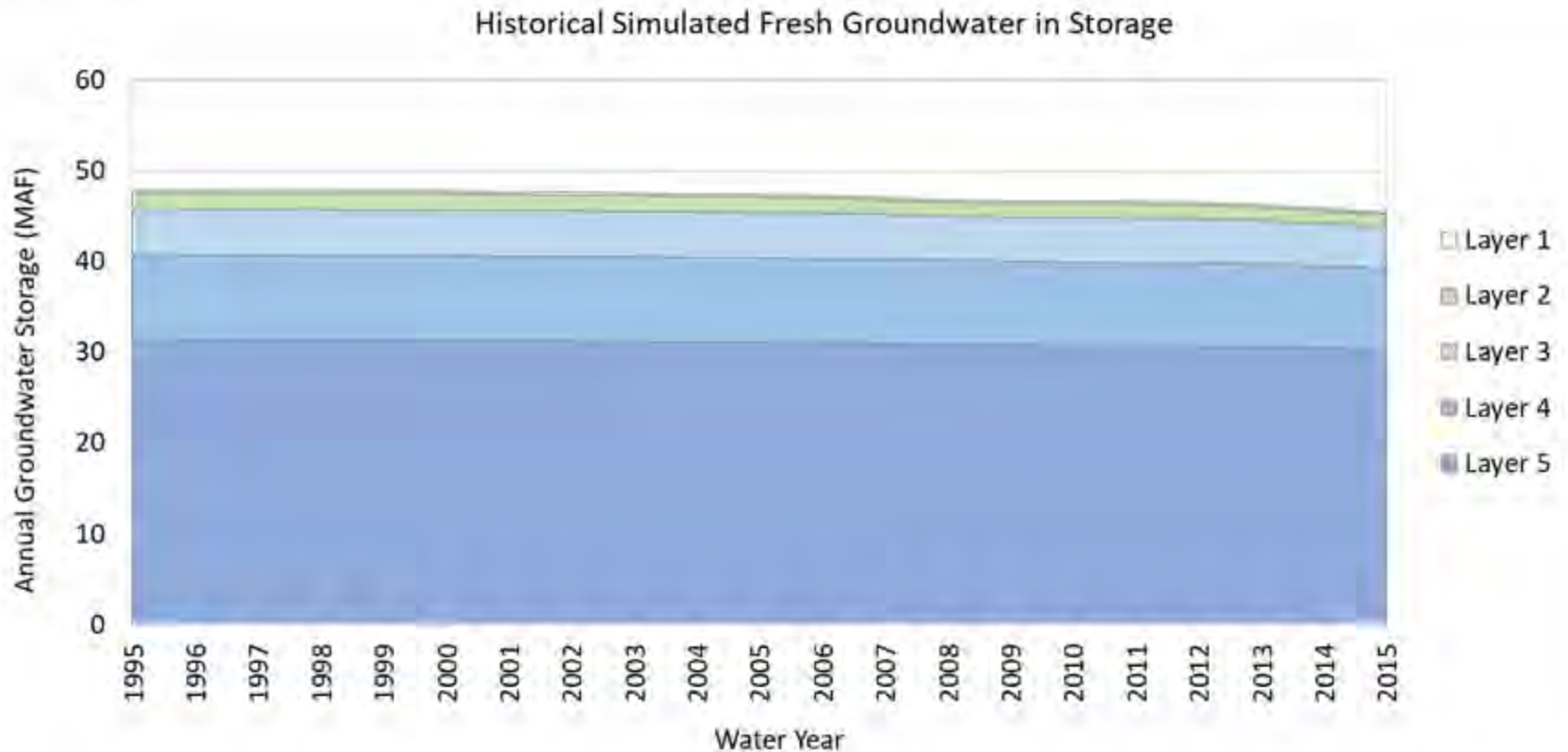


Image courtesy: Veronica Adrover/UC Merced



# What do we already know about groundwater in the Subbasin?



Chronic Lowering of Groundwater Levels



Reduction in Groundwater Storage



Seawater Intrusion

*Not Applicable*



Degraded Water Quality



Land Subsidence



Depletion of Interconnected Surface Water

Image courtesy: Veronica Adrover/UC Merced

# What do we already know about groundwater in the Subbasin?



Chronic Lowering of Groundwater Levels



Reduction in Groundwater Storage



Seawater Intrusion



Degraded Water Quality



Land Subsidence



Depletion of Interconnected Surface Water

Image courtesy: Veronica Adrover/UC Merced



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# Degraded water quality

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Adverse  
groundwater  
quality by area  
(constituents  
listing)

Image courtesy: Veronica Adrover/UC Merced

# Note: Maps on the Next Few Slides Reflect Merced IRWM Boundary

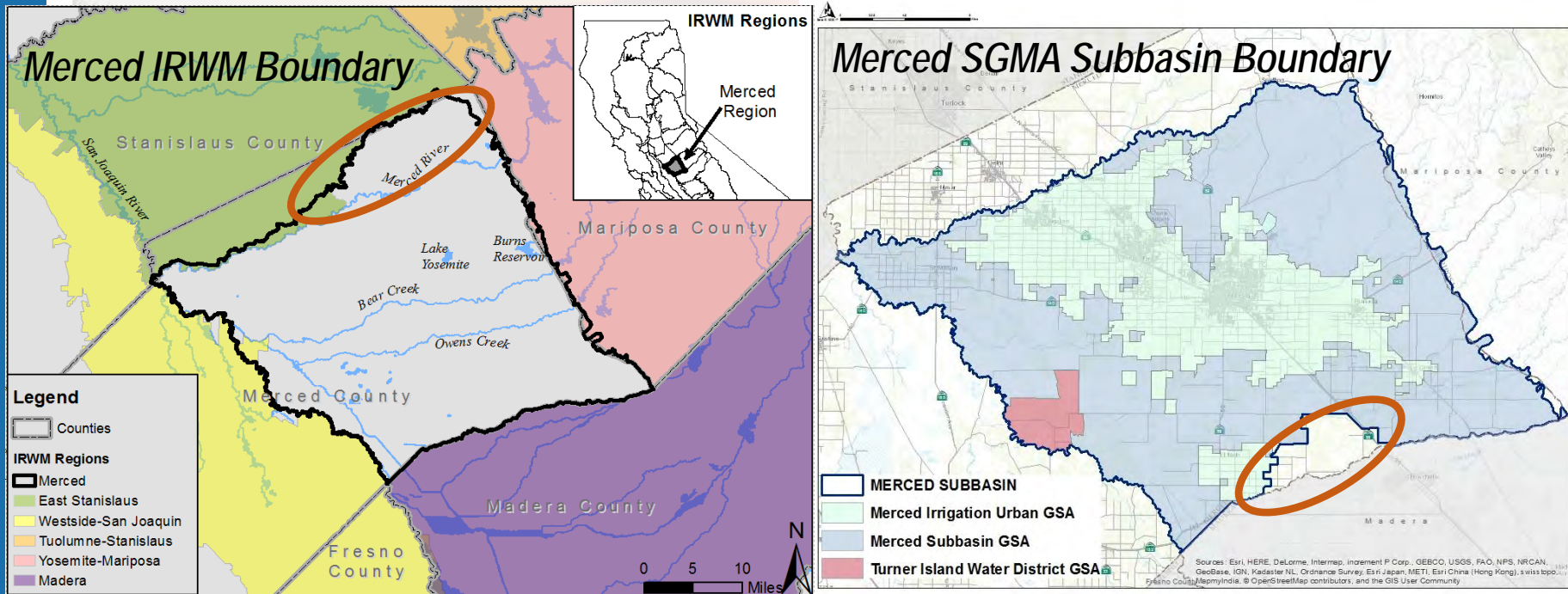
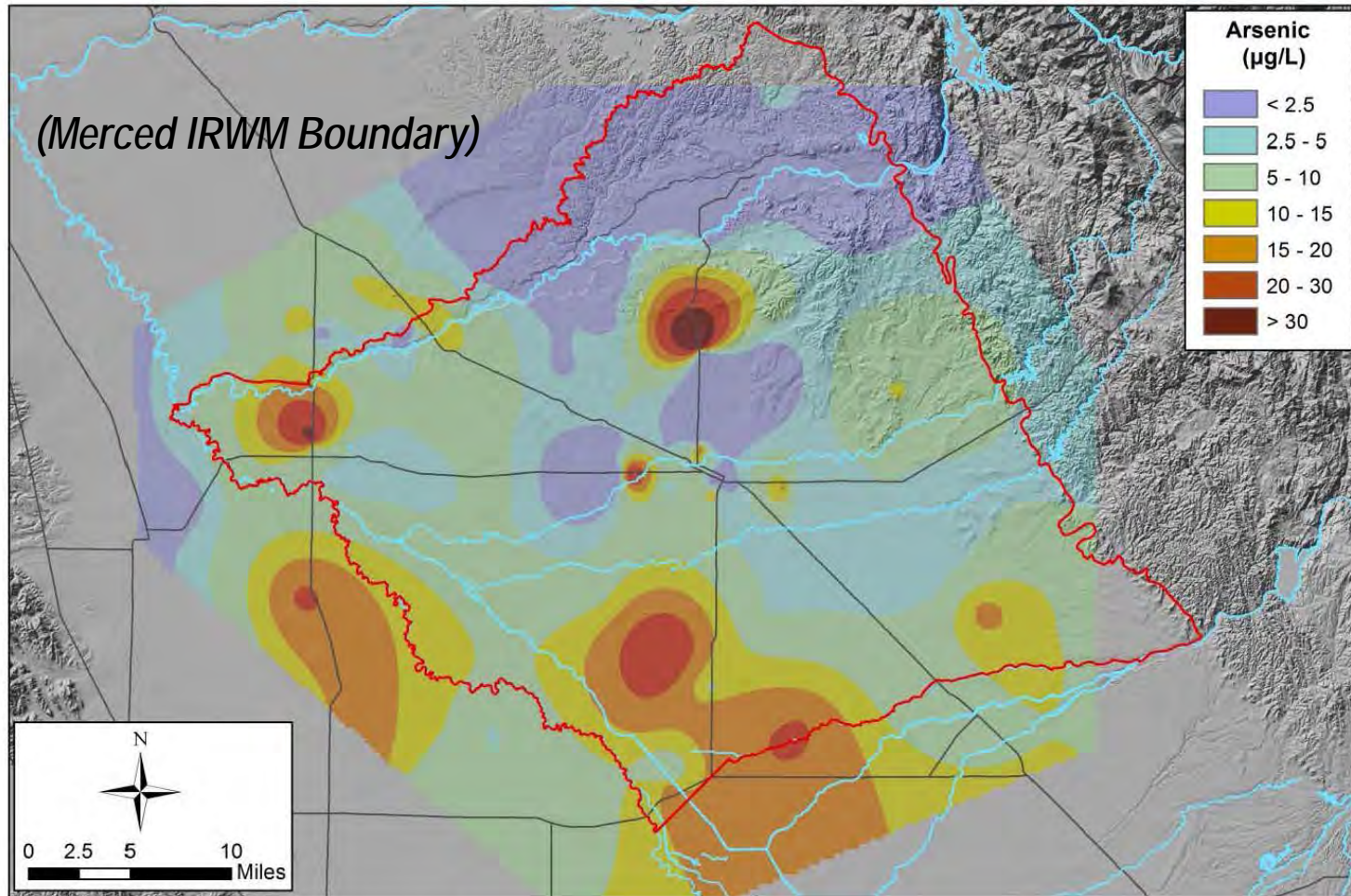


Image courtesy: Veronica Adrover/UC Merced



# Arsenic in Groundwater



Notes:

- 1) Refer to Salt and Nutrient Study for details of spatial and temporal averaging
- 2) Average of data collected between 2007 and 2012
- 3) Sources: Merced County Division of Environmental Health  
USGS GAMA Program  
State Water Board GeoTracker
- 4) MCL = 10 µg/L

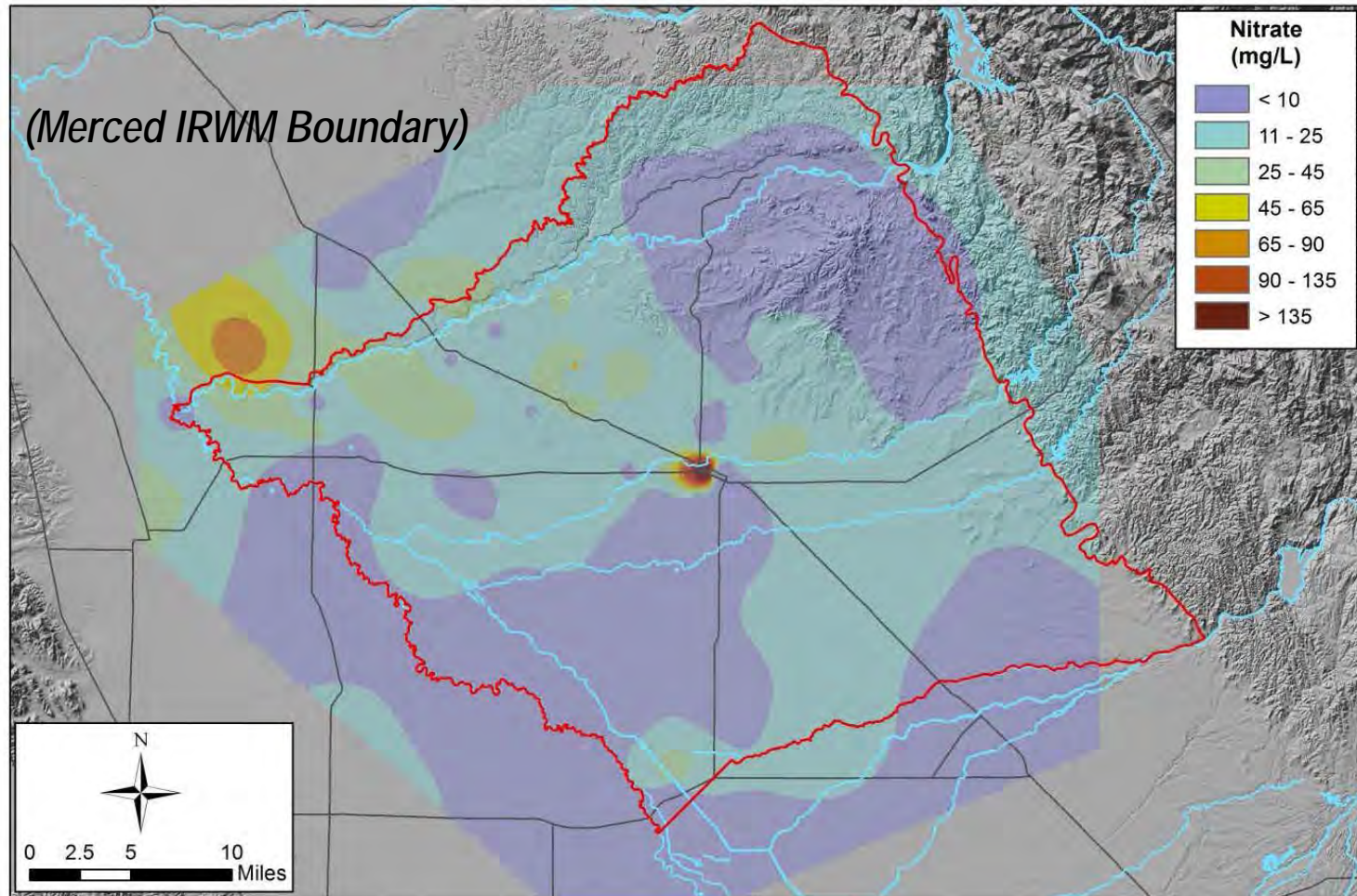
**5-Year Average Distribution of  
Arsenic in Groundwater**

2013





# Nitrates in Groundwater



Notes:  
1) Refer to Salt and Nutrient Study for details of spatial and temporal averaging  
2) Average of data collected between 2007 and 2012  
3) Sources: Merced County Division of Environmental Health  
USGS GAMA Program  
State Water Board GeoTracker  
4) MCL = 45 mg/L

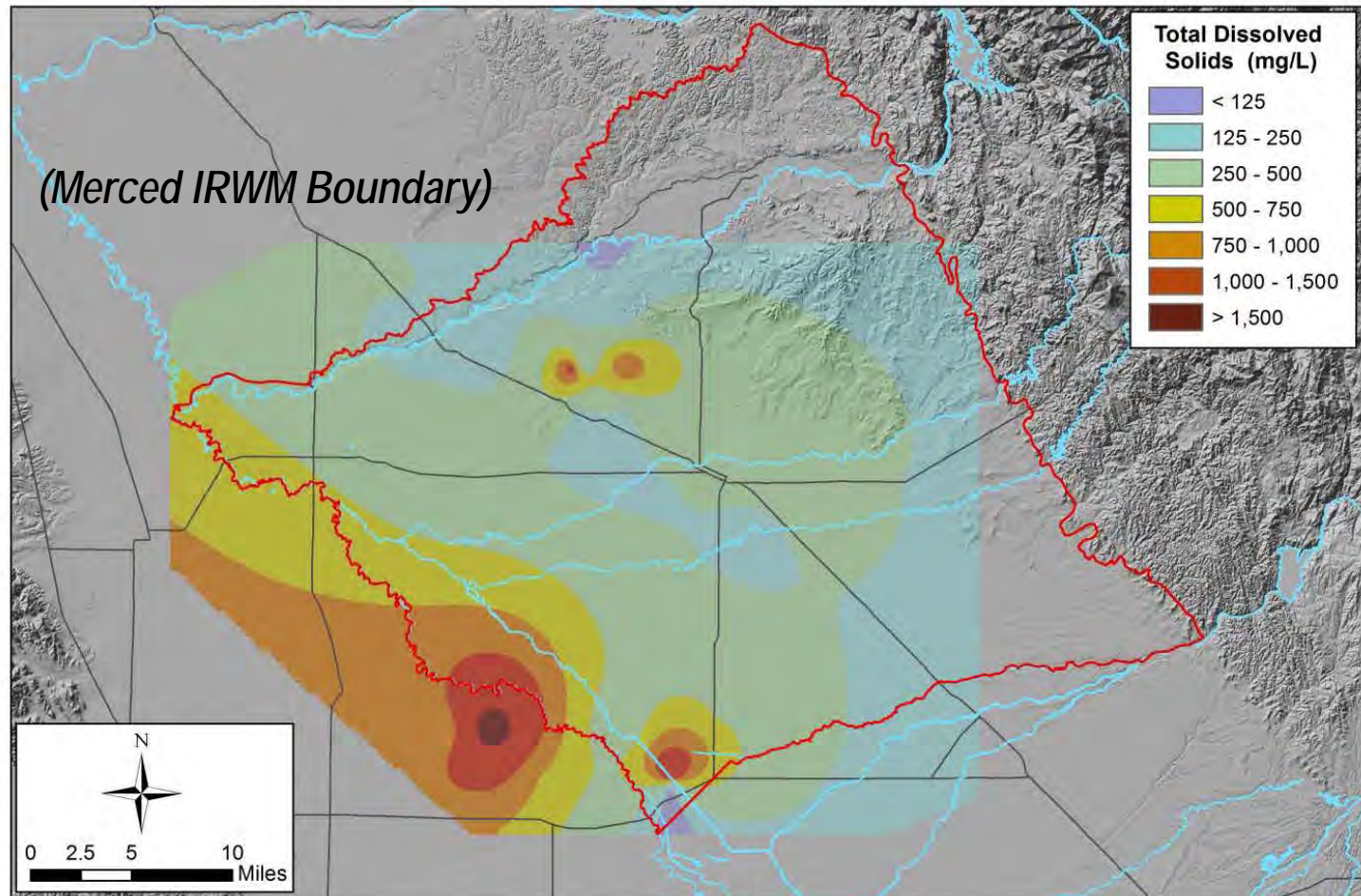
**5-Year Average Distribution of Nitrate (as NO<sub>3</sub>) in Groundwater**

2013





# Total Dissolved Solids in Groundwater



Notes:

- 1) Refer to Salt and Nutrient Study for details of spatial and temporal averaging
- 2) Average of data collected between 2007 and 2012
- 3) Sources: Merced County Division of Environmental Health  
USGS GAMA Program  
State Water Board GeoTracker
- 4) SMCL: Recommended = 500 mg/L, Upper = 1,000 mg/L, Short Term = 1,500 mg/L

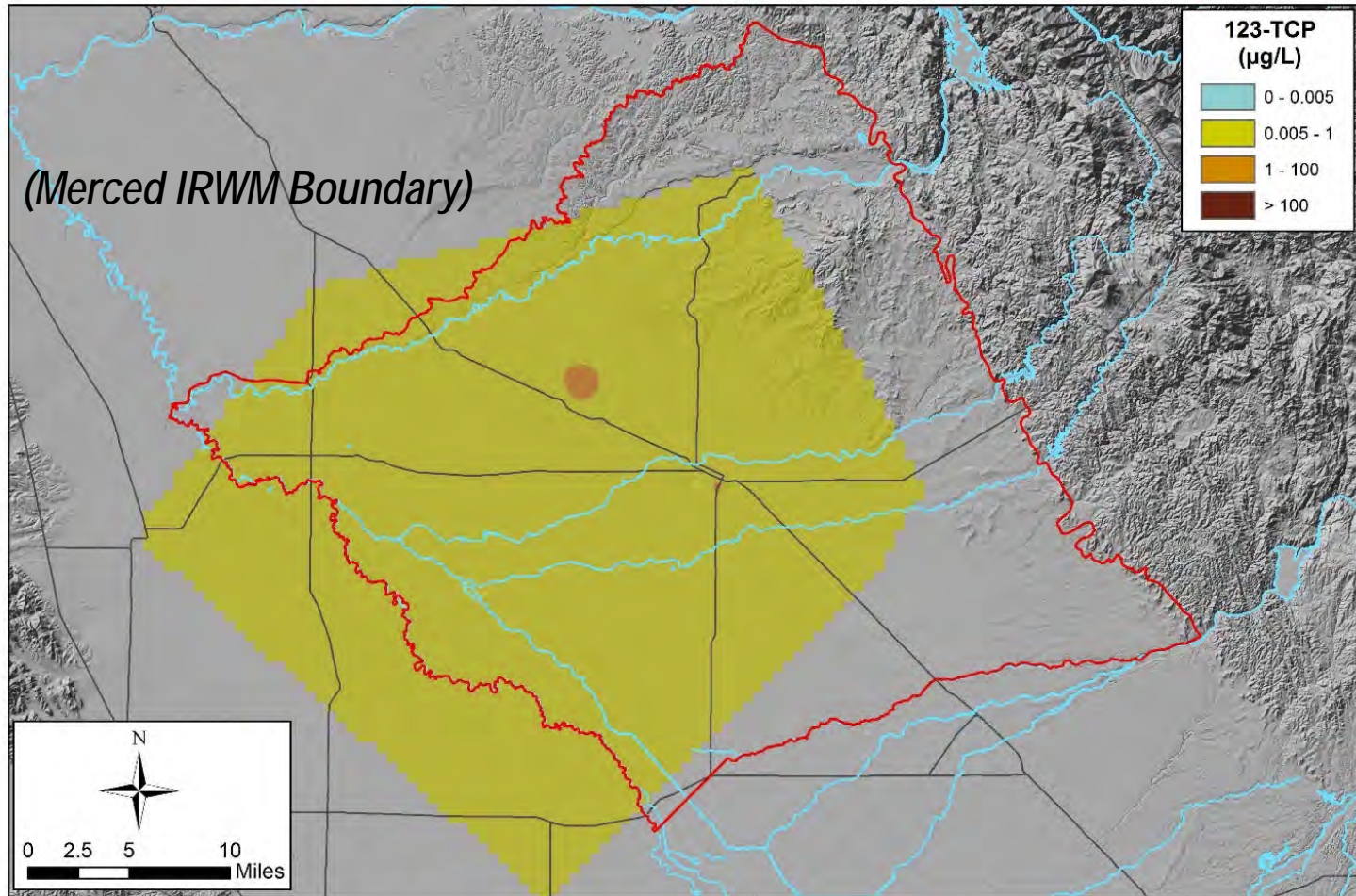
**5-Year Average Distribution of  
Total Dissolved Solids in Groundwater**

2013





# 1,2,3-TCP in Groundwater



**Notes:**

- 1) Refer to Section 2, Evaluation Methodology, for details of spatial and temporal averaging
- 2) Average of data collected between 2007 and 2012
- 3) Sources: Merced County Division of Environmental Health  
USGS GAMA Program  
State Water Board GeoTracker
- 4) Notification Level = 0.005 µg/L

**5-Year Average Distribution of  
1,2,3-TCP in Groundwater**

2013





# What do we already know about groundwater in the Subbasin?



Chronic Lowering of Groundwater Levels



Reduction in Groundwater Storage



Seawater Intrusion



Degraded Water Quality



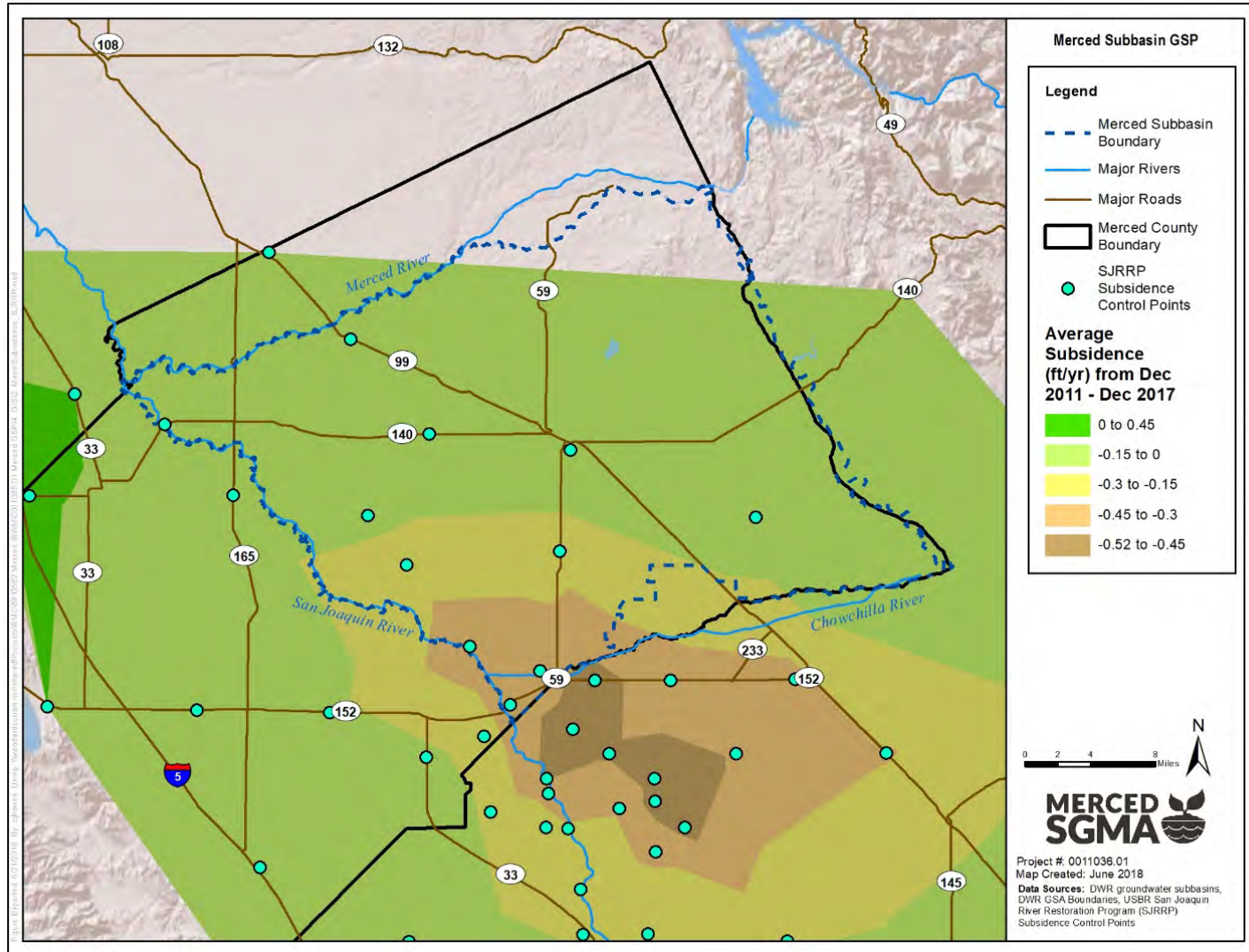
Land Subsidence



Depletion of Interconnected Surface Water

Image courtesy: Veronica Adrover/UC Merced

# Land Subsidence in the Subbasin from 2011-2017





# What do we already know about groundwater in the Subbasin?



Chronic Lowering of Groundwater Levels



Reduction in Groundwater Storage



Seawater Intrusion



Degraded Water Quality



Land Subsidence

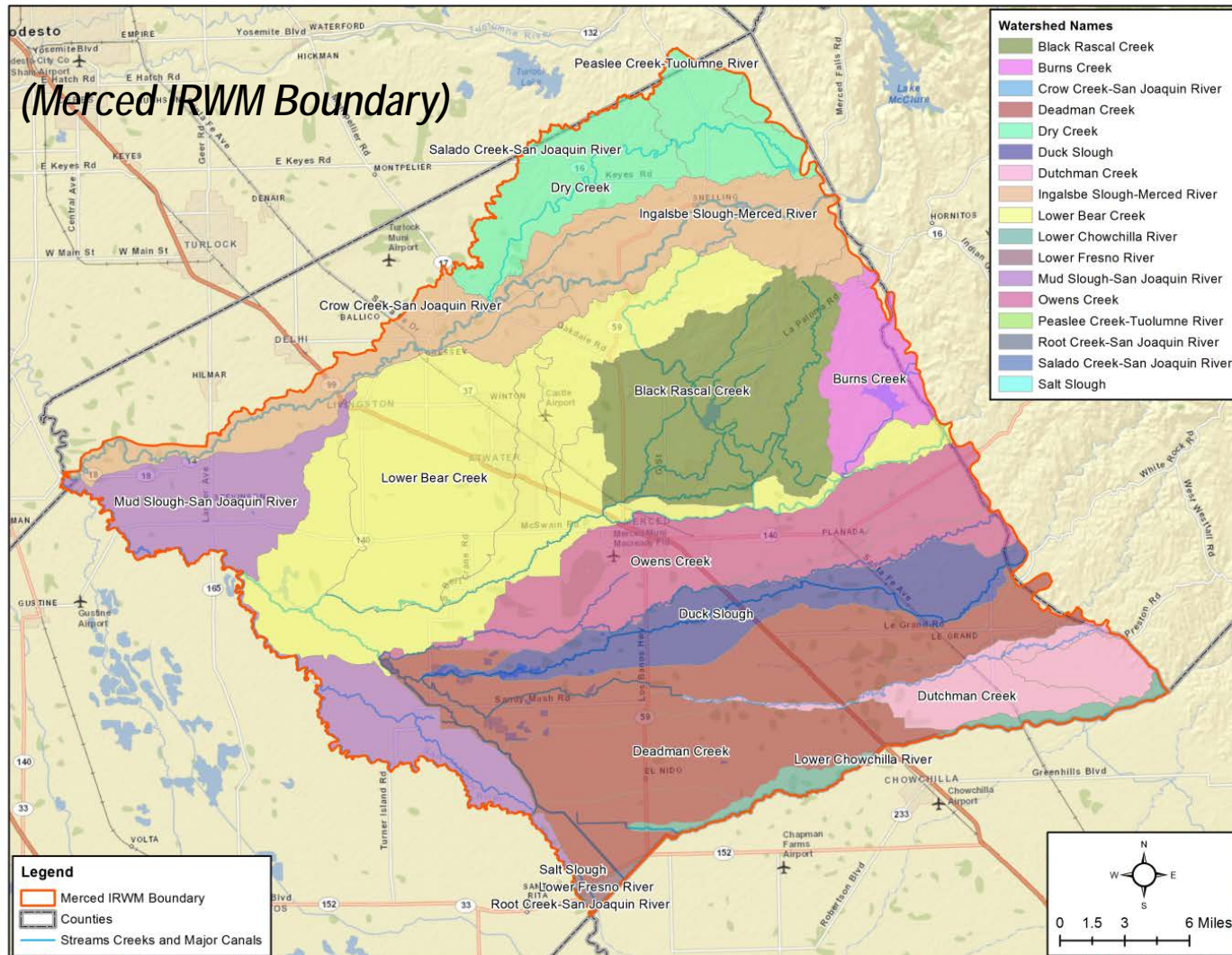


Depletion of Interconnected Surface Water



Image courtesy: Veronica Adrover/UC Merced

# Understanding How Groundwater Use and Surface Water Flows are Related







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# Groundwater Sustainability Goals

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Image courtesy: Veronica Adrover/UC Merced





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# Stakeholder Committee Procedures

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Image courtesy: Veronica Adrover/UC Merced



# Procedures and Commitments

- Purpose
  - Advise the Coordinating Committee and GSA Governing Bodies
- Membership
  - Diverse representation of interests in the Merced Subbasin
  - Coordinating Committee identifies and appoints members, with GSA approval
- Member Terms and Responsibilities
  - Through development of GSP
  - Participate, represent interests, and educate communities
- Alternate Members
  - Alternates selected by members
  - Should represent the same interest/perspective as the member
  - Member is responsible for keeping alternate current
- Decision-making
  - Consensus approach for joint recommendations
- Meetings
  - Brown Act compliance
  - Consistent participation: don't miss 3 in a row or 5 in a year

Image courtesy: Veronica Adrover/UC Merced

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# Consensus Recommendations

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## Polling the committee to assess and confirm consensus

1. I can say an unqualified 'yes' to the decision. I am satisfied that the decision is an expression of the wisdom of the group.
2. I find the decision perfectly acceptable. It is the best of the real options we have available to us.
3. I can live with the decision. However, I'm not especially enthusiastic about it.
4. I do not fully agree with the decision and need to register my view about it. However, I do not choose to block the decision and will stand aside. I am willing to support the decision because I trust the wisdom of the group.
5. I do not agree with the decision and feel the need to block the decision being accepted as consensus.
6. I feel that we have no clear sense of unity in the group. We need to do more work before consensus can be achieved.

Image courtesy: Veronica Adrover/UC Merced





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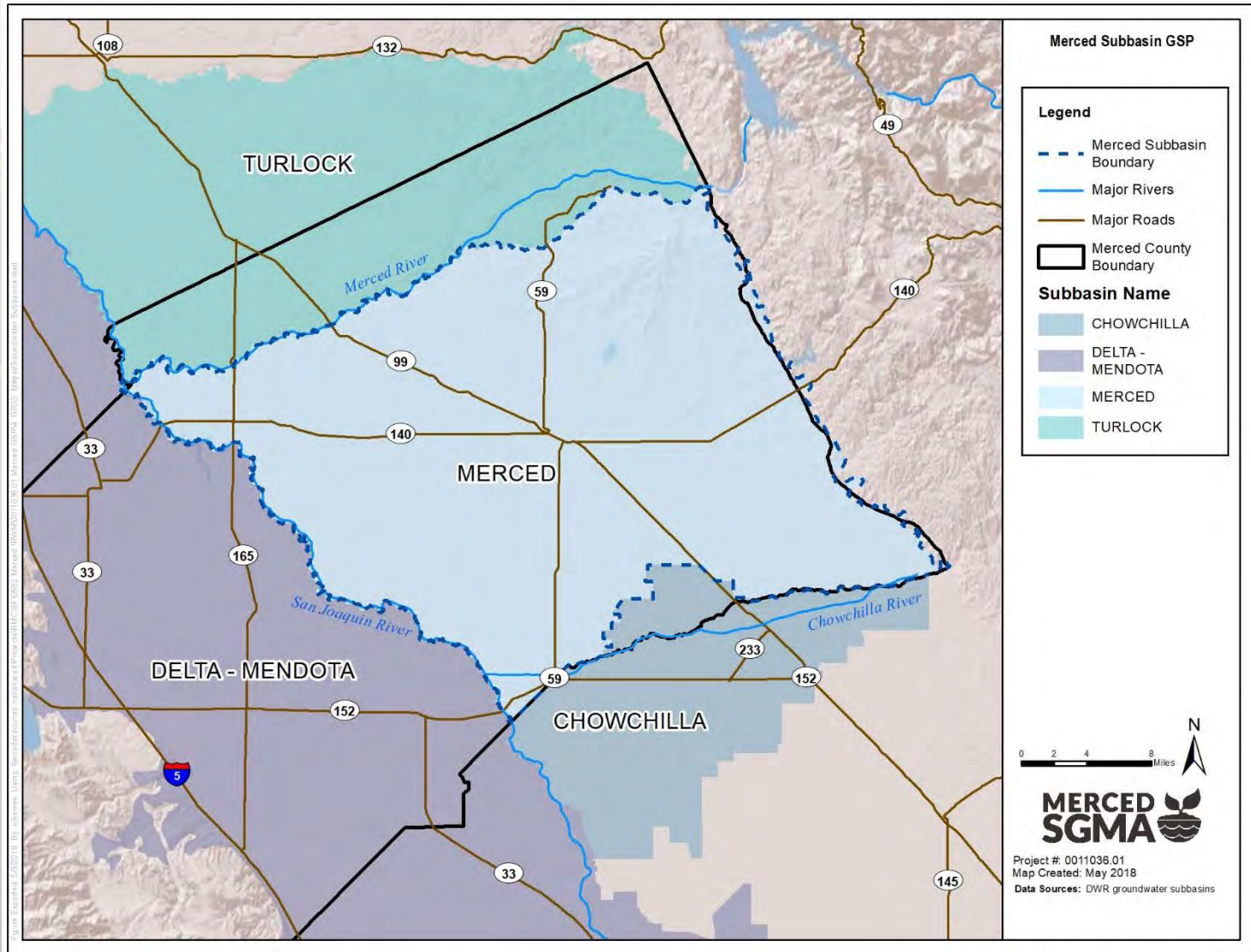
# Interbasin Coordination Update

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Image courtesy: Veronica Adrover/UC Merced



# Coordination with Neighboring Basins







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# Questions/Comments from Public

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Image courtesy: Veronica Adrover/UC Merced





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# Next Steps

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Image courtesy: Veronica Adrover/UC Merced



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# What's coming up next?

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- Next Stakeholder Committee meeting – June 25<sup>th</sup>
  - Plan Area and Authority
  - Current Basin Conditions
  - Overview of existing Groundwater Model
  - Procedures for consensus
- July 23 Stakeholder Committee meeting @ 9:30 AM
- July 23 Joint Meeting with Coordinating Committee / UC Merced study session @ 11:45 AM
- Planning activities underway
  - Initial sections of GSP under development
  - Using model to develop historical, current, and future water budget estimates
  - Meeting with DWR about Technical Support Services

Image courtesy: Veronica Adrover/UC Merced



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# GSP Stakeholder Committee

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Coordinating Committee Meeting – June 25, 2018

Image courtesy: Veronica Adrover/UC Merced

