
GSP Coordinating Committee

Coordinating Committee Meeting – May 29, 2019

**Merced Irrigation-Urban GSA
Merced Subbasin GSA
Turner Island Water District GSA-1**

Image courtesy: Veronica Adrover/UC Merced



Agenda

1. Call to order
2. Approval of minutes for April 22, 2019 meeting
3. Stakeholder Committee update
 1. Update from May 29 morning meeting
4. Presentation by Woodard & Curran on GSP development
 1. Management Areas
 2. Sustainable Management Criteria
 3. Implementation Plan
 4. Water Allocation Framework
 5. Next Steps in GSP Development
 6. Other Updates

Image courtesy: Veronica Adrover/UC Merced

Agenda

5. Public Outreach Update
6. Coordination with Neighboring Basins
7. Public Comment
8. Next Steps and Adjourn

Image courtesy: Veronica Adrover/UC Merced



Approval of Minutes

Image courtesy: Veronica Adrover/UC Merced





Stakeholder Committee Update

Image courtesy: Veronica Adrover/UC Merced





Management Areas

Image courtesy: Veronica Adrover/UC Merced



Management Areas

SGMA definition: as an area within a basin for which the GSP may identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors.

Image courtesy: Veronica Adrover/UC Merced

Management Areas

Management Area Options

Can have different:

- Minimum thresholds (MTs)
- Measurable Objectives (MOs)
- Monitoring
- Project & Management Actions

Can be based on:

- Water Use Sector
- Water Source Type
- Geology
- Aquifer Characteristics
- Jurisdictional boundaries

Additional Requirements

- Must provide reason for creation of management area(s)
- Must provide rationale for selecting different MT and MO values
- **Must explain how the management area(s) can operate under different MTs and MOs without causing undesirable results outside the management area(s)**
- Other portions of GSP (HCM, water budget, outreach, etc) must be consistent for the entire basin

Discussion – Management Areas

We understand there are questions about management areas and whether they might be applicable to the basin.

- What are the challenges we are trying to address?
- What are the different mechanisms available under SGMA to address them?

Image courtesy: Veronica Adrover/UC Merced



Sustainable Management Criteria

Image courtesy: Veronica Adrover/UC Merced



Merced GSP SMC Summary

Sustainability Indicator	Minimum Threshold	Measurable Objective	Undesirable Result
Groundwater Levels	Depth of shallowest well in 2-mi radius of representative well or Jan 1 2015	Projected average future gw level under sustainable yield modeling simulation	Greater than 25% of representative wells fall below MT in 2 consecutive non dry/critical years
Groundwater Storage	N/A - Undesirable results related to significant and unreasonable depletions of groundwater storage are not present and not expected to occur in the Subbasin		
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		

Image courtesy: Veronica Adrover/UC Merced

Sustainable Management Criteria Definitions

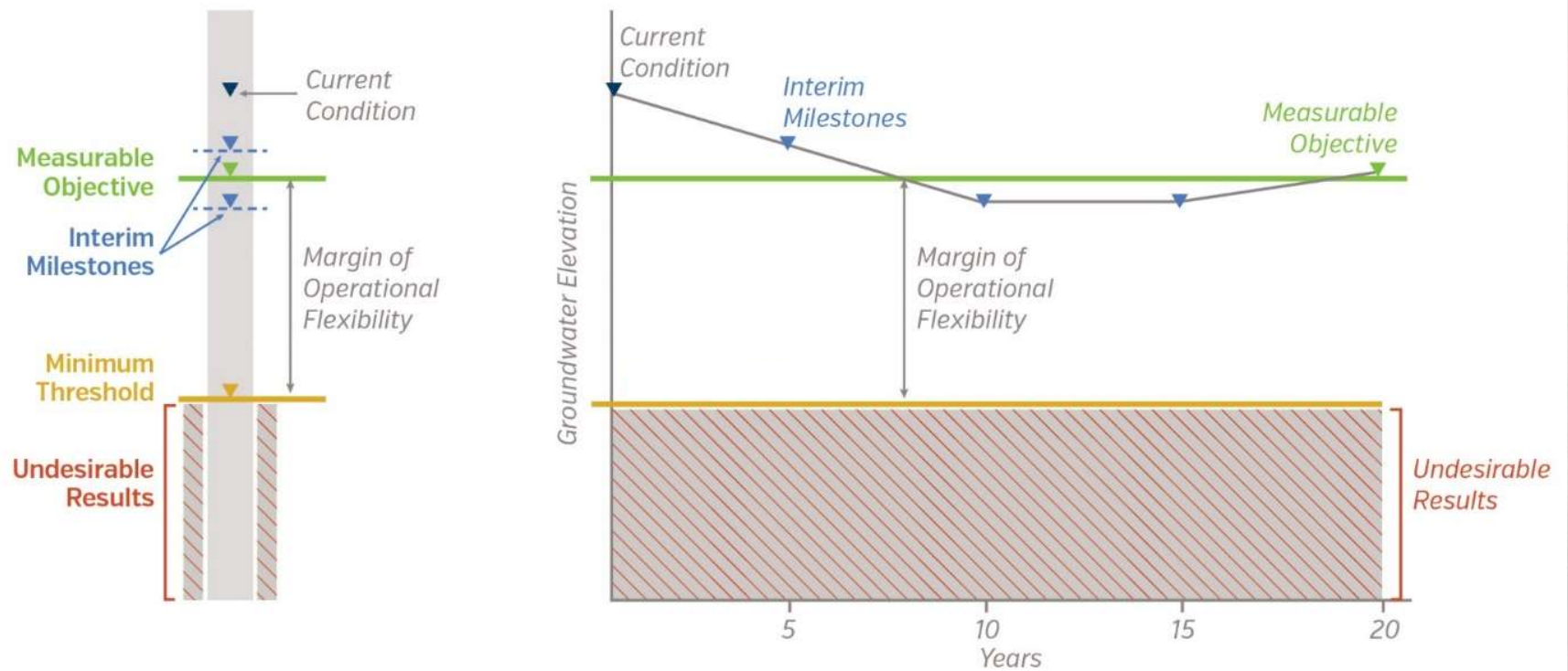


Image courtesy: Veronica Adrover/UC Merced

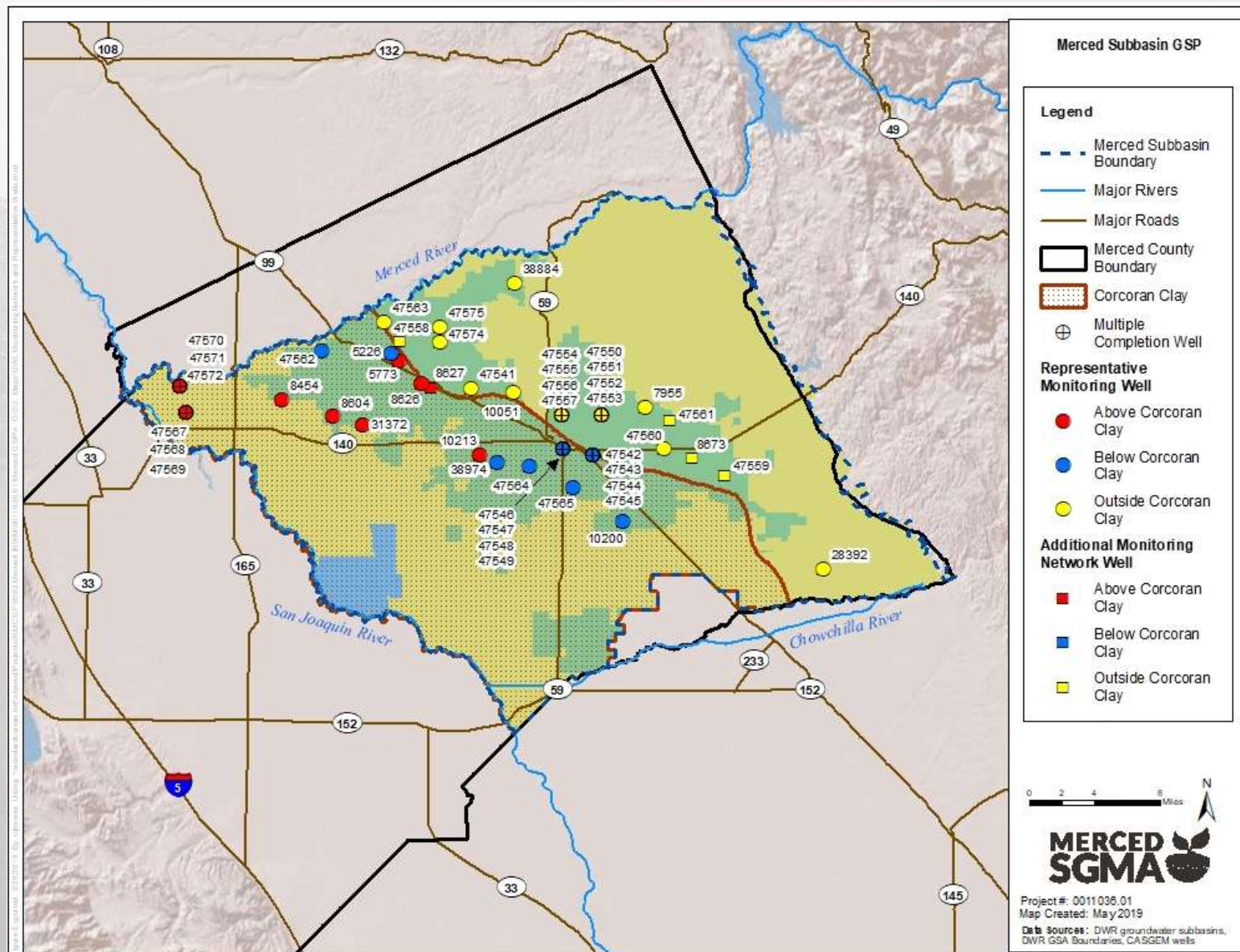
Chronic Lowering of Groundwater Levels: Minimum Thresholds

Methods used:

- Representative monitoring wells: 27 CASGEM wells (above, below, & outside the Corcoran Clay)
- Minimum threshold is placed at depth of shallowest domestic well:
 - Merced County electronic database with wells permitted 1990s or later
 - Wells less than 50 feet deep not considered (50 ft annular seal requirement)
 - Outliers were removed via interquartile range analysis
 - Used shallowest well within a 2-mile buffer of each CASGEM representative monitoring well
- Then: Compare proposed minimum threshold against modeled groundwater elevations during implementation and sustainable yield periods (2015-2090)

Image courtesy: Veronica Adrover/UC Merced

GSP Groundwater Level Monitoring Network Monitoring and Representative Wells



Degraded Water Quality: Undesirable Results

- Undesirable result
 - Significant and unreasonable reduction in the long-term viability of domestic, agricultural, municipal, or environmental uses
 - Set minimum thresholds for constituents where groundwater extractions effect groundwater quality (causal nexus)
 - For contaminants regulated under existing programs, establish communication and coordination to prevent migration of existing plumes through recharge and other activities
 - Basin Contaminants
 - Nitrates – CV-SALTS/ILRP
 - Arsenic – Cal/Federal EPA (naturally occurring)
 - Point Source Contamination – Regional Board
 - Toxics – DTSC
 - **Salinity**

Image courtesy: Veronica Adrover/UC Merced

Degraded Water Quality: Minimum Thresholds

- **Proposed Minimum Threshold: 1,000 mg/L Total Dissolved Solids (TDS, measurement of salinity)**
- Based on:
 - 1,000 mg/L TDS upper limit Secondary Maximum Contaminant Level (SMCL) from SWRCB
 - Salt tolerances range from 640 - 1,100 mg/L TDS

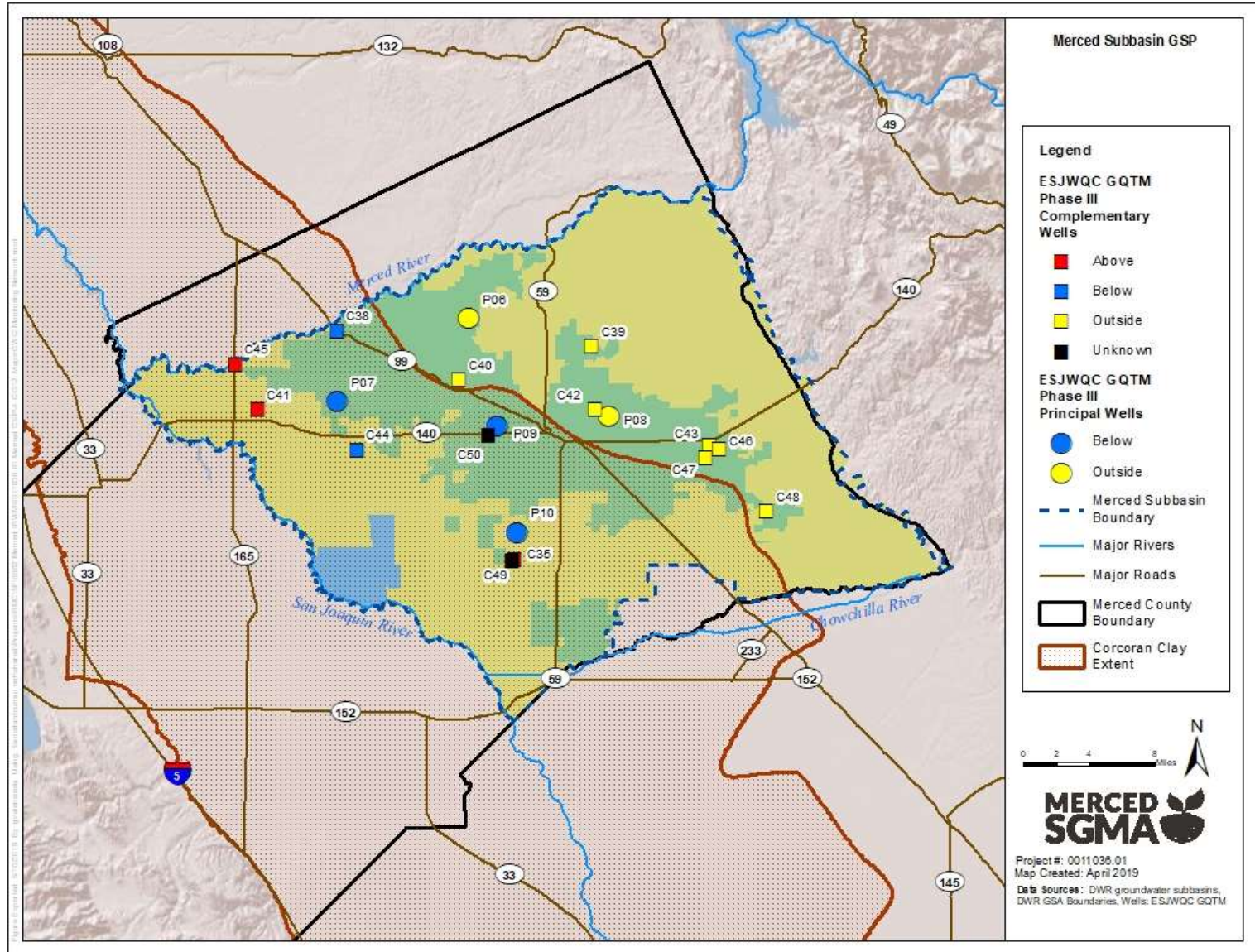
Image courtesy: Veronica Adrover/UC Merced

Degraded Water Quality: Minimum Thresholds (Monitoring)

- Eastern San Joaquin Water Quality Coalition (ESJWQC) Groundwater Quality Trend Monitoring Workplan, Phase III document targeted domestic wells for GWQ monitoring network
 - Includes 5 wells in Merced Subbasin that meet requirements of Waste Discharge Orders
- 15 additional complementary wells with historical data but don't meet criteria for Principal Wells (similar to CASGEM Voluntary)
 - Public Water Systems (PWS) which monitored separately on a regular basis in accordance with SWRCB DDW protocols

Image courtesy: Veronica Adrover/UC Merced

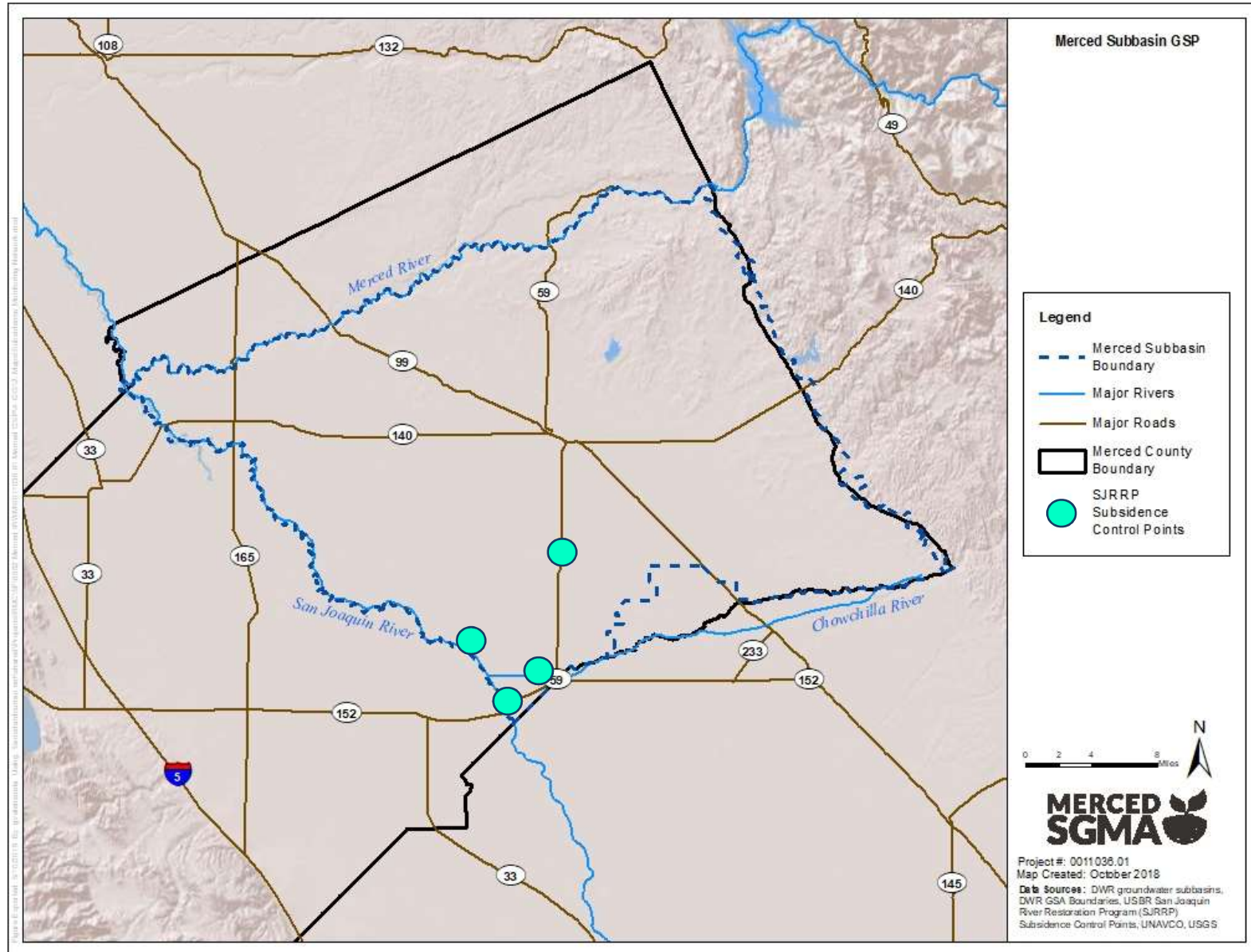
GSP Groundwater Quality Monitoring Network Wells



Land Subsidence: Undesirable Results

- Subsidence has been observed in the southwestern portion of the Subbasin
- Caused by groundwater extraction and compaction of clays below the Corcoran Clay
- Recent level of subsidence in Merced Subbasin not considered significant and unreasonable, as it did not cause a significant and unreasonable reduction in the viability of the use of infrastructure
- MTs set at 4 locations within the area of subsidence risk monitored for land subsidence by the USBR 2x per year
- Given the lack of historical undesirable results and given the degree to which subsidence may already be locked-in due to historical groundwater production, land subsidence MTs are set at a rate of -0.75 ft/year

GSP Subsidence Monitoring Network Sites



Depletion of Interconnected Surface Water: Undesirable Results

- Undesirable Results
 - Reductions in flow or levels of major rivers and streams that are hydrologically connected to the basin such that the reduced surface water flow or levels have a significant and unreasonable adverse impact on beneficial uses of the surface water within the Subbasin over the planning and implementation horizon of this GSP
- Minimum Threshold
 - Use GW level as a proxy because of challenges of direct measurement and because of correlation between GW level and depletions.
 - Historical depletions of interconnected surface water in the subbasin have not been considered significant and unreasonable
 - Groundwater modeling results were analyzed to estimate the volume of depletions associated with groundwater levels that would be classified as undesirable results and confirm that groundwater level proxy would be protective.
- Monitoring Network:
 - GW representative monitoring wells used as proxy

Image courtesy: Veronica Adrover/UC Merced



Implementation Plan

Image courtesy: Veronica Adrover/UC Merced



Implementation Plan: Requirements & Guidelines

SGMA requires certain content for plan implementation:

- Estimate of GSP Implementation Costs

“(e) An estimate of the cost of implementing the Plan and a general description of how the Agency plans to meet those costs”

(*Section 10733.2, Water Code, Reg. 354.6*)

DWR GSP Annotated Outline Guideline Document:

- Estimate of GSP Implementation Costs (*Reg. 354.6*)
- Schedule for Implementation
- Annual Reporting
- Periodic Evaluations

Image courtesy: Veronica Adrover/UC Merced

Implementation Plan:

Estimate of GSP Implementation Costs

Estimate of GSP Implementation Costs (*Reg. 354.6*)

- Costs are estimated for:
 - GSA Administration
 - Stakeholder/GSA Board engagement
 - Outreach
 - GSP Implementation Program Management
 - Developing Annual Reports
 - Developing Five-Year Evaluation Reports
 - Monitoring Programs
 - Implementing GSP-Related Projects and Management Actions

Image courtesy: Veronica Adrover/UC Merced

Implementation Plan: Schedule for Implementation

Further detail of schedule to be revised pending updated projects and management actions information. Implementation will be phased over 20 years, with 5-yr updates.

2020	2025*	2030	2035	2040
Monitoring and Reporting	Preparation for Allocations and Low Capital Outlay Projects	Prepare for Sustainability	Implement Sustainable Operations	
<ul style="list-style-type: none"> • Establish Monitoring Network • Install New Wells • Develop Metering Program • Extensive public outreach • Funded and smaller projects implemented 	<ul style="list-style-type: none"> • GSAs conduct 5-year evaluation/update • Planning/ Design/ Construction for small to medium sized projects • Monitoring and reporting continues • Metering program continues • Outreach continues • Allocation program may begin phase-in 	<ul style="list-style-type: none"> • GSAs conduct 5-year evaluation/update • Planning/ Design/ Construction for larger projects begins • Monitoring and reporting continues • Outreach continues • Allocation program phase-in 	<ul style="list-style-type: none"> • GSAs conduct 5-year evaluation/update • Project implementation completed • Allocations fully implemented/enforced 	

*Need for mechanisms to prevent overpumping prior to implementation period

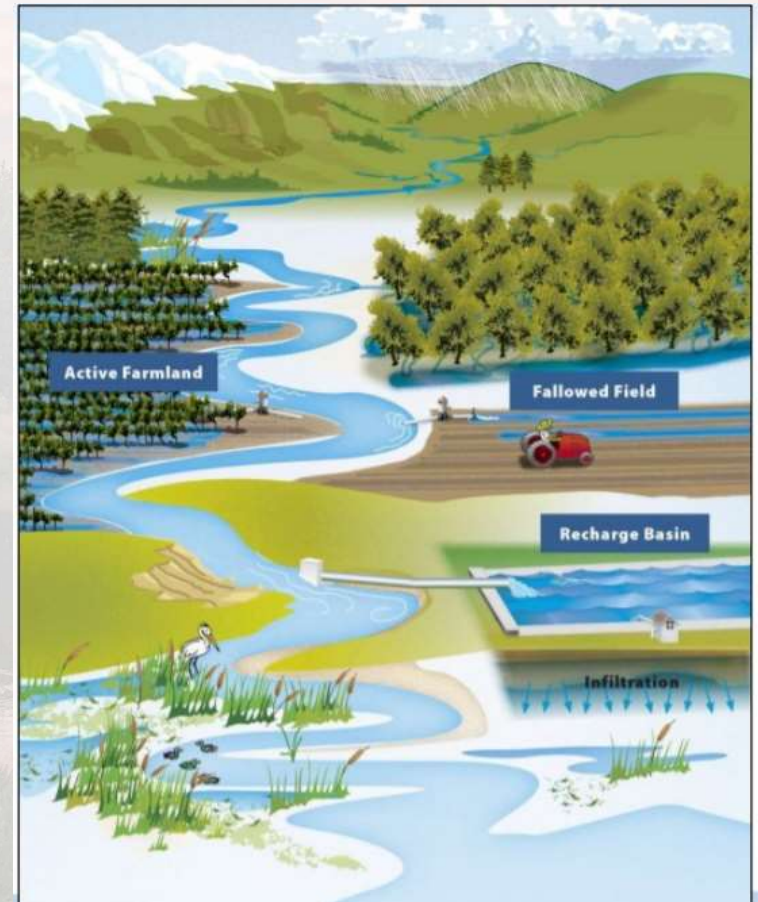
Implementation Plan: Reporting & Evaluations

- Annual Reporting: GSA's plan for required annual reporting
 - Reports must be submitted by April 1 of each year following GSP adoption
 - Must include three key sections: 1) General Information, 2) Basin Conditions, and 3) Plan Implementation Progress
- Periodic Evaluations (5-Year Evaluation Report): GSA's process for required periodic evaluations
 - SGMA requires that GSPs be evaluated regarding their progress towards meeting the approved sustainability goal at least every five years
 - Need to provide written assessment to DWR
 - Must include: Sustainability Evaluation, Plan Implementation Progress, Reconsideration of GSP Elements, Monitoring Network Description, New Information, Regulations or Ordinances, Legal or Enforcement Actions, Plan Amendments, and Coordination

Image courtesy: Veronica Adrover/UC Merced

Implementation Plan: informational inputs

- Projects & Management Actions:
 - Timeframes and general costs
- Monitoring Networks:
 - Costs for maintaining and operating networks
 - Costs associated with five-year reporting years
- Potential Funding Mechanisms:
 - Relevant State Funding Mechanisms (e.g. Prop 1 IRWMP Implementation Grant Program and Storm Water Grant Program); Prop 68 – NOW!
 - GSA Fees and Assessments



Picture: Projects & Management Actions slide from DWR SGMA Sustainable Management Criteria presentation, Craig Altare 4 May, 2019

Image courtesy: Veronica Adrover/UCM



Water Allocation Framework

Image courtesy: Veronica Adrover/UC Merced



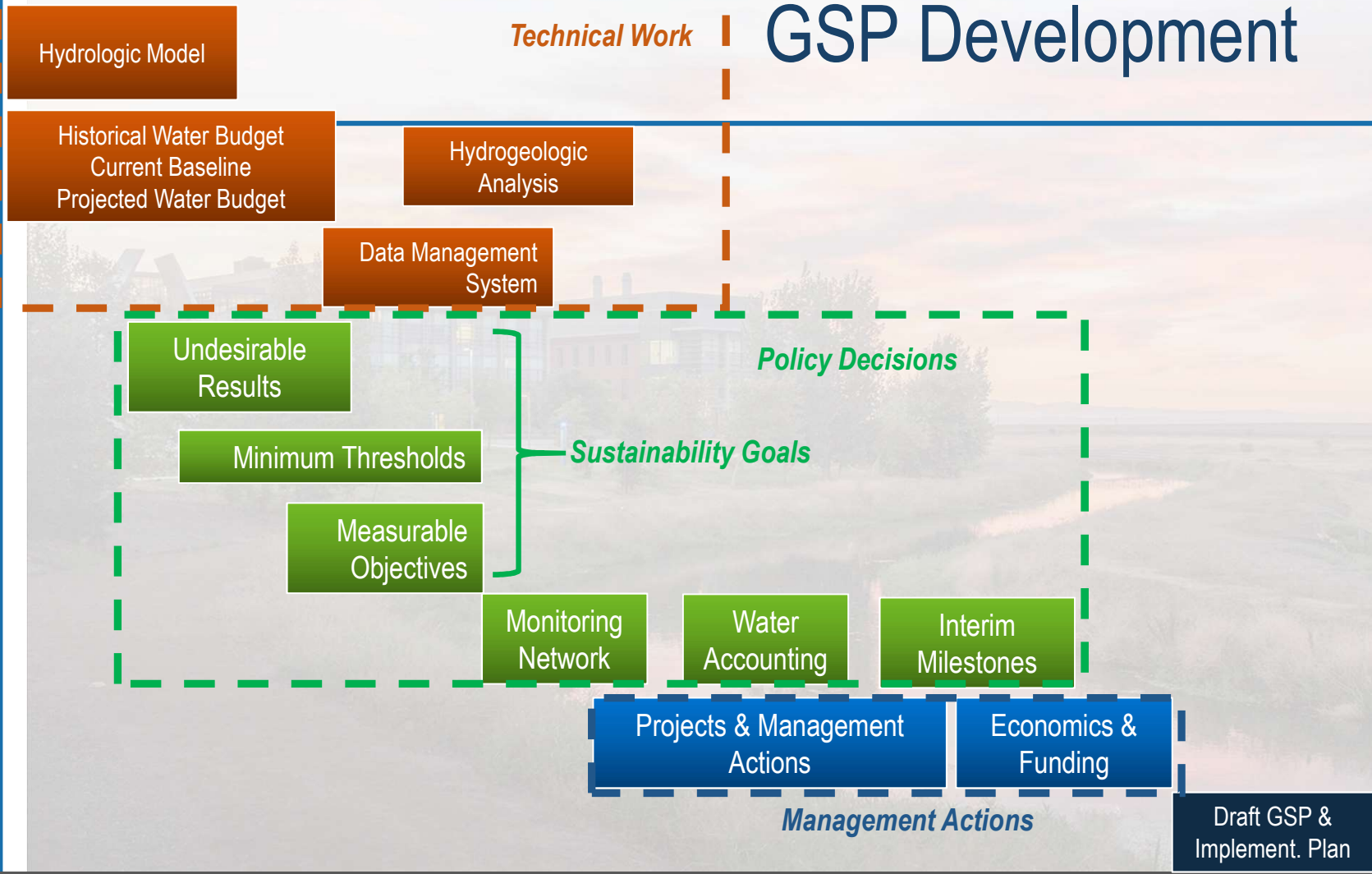


Next Steps in GSP Development

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



GSP Development: Sections Review Schedule

Section	Admin Review Draft Sent Out	Deadline for Consolidated Comments (2 wks)	SC and CC Review Period	Final Public Draft Deadline (June mtg on 6/24)
Executive Summary	N/A	N/A	N/A	24-Jun-2019
Plan Area and Authority	29-Jun-18	20-Jul-18	N/A	24-Jun-2019
Basin Setting	(in sections, see below)			24-Jun-2019
<i>Hydrogeologic Conceptual Model</i>	6-Nov-18	30-Nov-18	N/A	
<i>Current and Historical Groundwater Conditions</i>	15-Mar-19	29-Mar-19	15-Apr - 29-Apr-19	
<i>Water Budget Information</i>	5-Mar-19	19-Mar-19	24-May-19 - 7-Jun-19	
<i>Climate Change Analysis</i>	19-Apr-19	3-May-19	10-May - 24-May-19	
Sustainable Management Criteria	13-May-19	31-May-19	7-Jun - 21-Jun-19	24-Jun-2019
Monitoring Networks	31-May-19	7-Jun-19	14-Jun - 21 Jun-19	24-Jun-2019
DMS	15-Mar-19	29-Mar-19	15-Apr - 29-Apr-19	24-Jun-2019
Projects and Management Actions to Achieve Sustainability Goal	8-May-19	31-May-19	7-Jun - 21-Jun-19	24-Jun-2019
Plan Implementation	31-May-19	7-Jun-19	14-Jun - 21 Jun-19	24-Jun-2019

Grey – completed, ready to revise for final draft
 Green – in review currently
 Yellow – not yet released

Janica Adrover/UC Merced



Proposed Merced GSP Review & Submission Timeline

90 Days Post-Notice of Intent to Adopt
(Can adopt or amend from 13-Oct if
notice issued by 29-Jul)

Full GSP Available for Public Review

MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOV/DEC
Continue writing sections, providing for review	Deliver full GSP draft June 24	Review and Comments on Draft GSP	Review and Comments on Draft GSP	Consulting team revisions to incorporate comments	Recirculate to GSA Boards	Submit to DWR
SC & CC meetings May 29	SC & CC meetings June 24	SC & CC meetings July 22	Public workshop at CC meeting August 26			
Public Workshop May 29		Issue Notice of intent to adopt by July 29	Evening Public workshop August 26		Joint GSA Board meeting (Potential Adoption)	

Image courtesy: Veronica Adrover/UC Merced





Other Updates

Image courtesy: Veronica Adrover/UC Merced



Continuing Comments for GSP Sections

Administrative Drafts (GSA Staff)

- Current:
 - Sustainable Management Criteria (comments due 5/31)
 - Projects and Management Actions (comments due 5/31)
- Coming up:
 - Monitoring Networks (comments due 6/7)
 - Plan Implementation (comments due 6/7)

SC & CC Groups:

- Current:
 - Water Budget Technical Memo (sent 5/24, comments due 6/7)
- Coming up:
 - Sustainable Management Criteria (est. 6/7, comments due 6/21)
 - Projects and Management Actions (est. 6/7, comments due 6/21)
 - Monitoring Networks (est. 6/14, comments due 6/21)
 - Plan Implementation (est. 6/14, comments due 6/21)



Public Outreach Update

Image courtesy: Veronica Adrover/UC Merced



Public Workshop

Reminder: Public Workshop this evening!

- Time: 6:00-8:00pm
- Location: Atwater Community Center, Jessie Frago Meeting Room, 760 E. Bellevue Road, Atwater
- Topics: Sustainable Management Criteria and Next Steps for GSP Adoption
- Notices posted on Merced SGMA website and at venue
- Spanish translation services available

Image courtesy: Veronica Adrover/UC Merced



Merced Subbasin Groundwater Sustainability Agencies to Host Community Workshop Wednesday, May 29, 2019

Merced Subbasin Groundwater Sustainability Plan Development Continues, Get Involved Now to Learn and Provide Input about the Future of Groundwater

The three groundwater sustainability agencies (GSAs) in the Merced Subbasin (Merced Subbasin Groundwater Sustainability Agency, Merced Irrigation-Urban Groundwater Sustainability Agency, and Turner Island Groundwater Sustainability Agency) will host a community workshop to discuss the Groundwater Sustainability Plan (GSP) being developed now for the Merced Subbasin.

When: Wednesday, May 29, 2019 from 6 p.m. to 8 p.m.

Where: Atwater Community Center, Jessie Frago Meeting Room, 760 E. Bellevue Road Atwater, CA. Spanish language translation services will be available.

Who Should Attend: All interested community members, ranchers, farmers, landowners, business owners, and residents with private wells are encouraged to attend.

What will be presented for discussion: The workshop is an opportunity to learn more about groundwater management for the Merced Subbasin (see map on page 2) and discuss, ask questions, and provide input on the topics:

- Sustainable Management Criteria
- Next Steps for Groundwater Sustainability Plan (GSP) Adoption

For more information about the Merced Subbasin GSP, to sign-up for email updates, to find meeting times and locations, and to make a comment or ask a question, visit <http://www.mercedsgma.org>.

In compliance with the Americans with Disabilities Act, if you need disability-related modifications or accommodations, including auxiliary aids or services, to participate in this meeting, please contact Ana Muniz-Laguna, Merced CI

Roles and Responsibilities

Governing Board

Consistent with the requirements of the Groundwater Sustainability Act, the Merced Subbasin Groundwater Sustainability Agency. The three GSAs are each responsible for the long-term

Coordinating Committee

The three GSAs for the Merced Subbasin will be responsible for the



Las Agencias de Sostenibilidad del Agua Subterránea de la Subcuenca Merced presentarán un Taller Comunitario

miércoles, 29 de Mayo del 2019

Continúa el desarrollo del plan de sostenibilidad del Agua Subterránea de la Subcuenca de Merced, Participe ahora para conocer sobre el futuro del Agua Subterránea y aportar sus opiniones

La Agencia de Manejo Sostenible de Agua Subterránea de la Subcuenca de Merced, la Agencia del Manejo Sostenible de Agua Subterránea de Irrigación de Merced y la Agencia del Manejo Sostenible de Agua Subterránea de Turner Island presentarán un taller público para analizar el Plan de Sostenibilidad de Agua Subterránea (GSP, por sus siglas en inglés) que están desarrollando estas tres agencias.

Cuándo: miércoles, 29 de Mayo del 2019 de 6 p.m. a 8 p.m.

Dónde: Centro Comunitario de Atwater, Jessie Frago Meeting Room, 760 E. Bellevue Road Atwater, CA. Habrá traducción en idioma español.

Quién debería asistir: Se anima a que asistan los miembros de la comunidad interesados, rancheros, agricultores, propietarios de terrenos, dueños de empresas y residentes con pozos privados.

Qué se presentará para la discusión: El taller es una oportunidad para conocer más sobre el manejo del Agua Subterránea para la subcuenca de Merced (vea el mapa en la página 2) y discutir, hacer preguntas, y aportar opiniones sobre los temas de:

- Criterios y reglamentos para lograr un manejo sostenible
- Los próximos pasos para la adopción del GSP

Para obtener más información sobre el GSP de la subcuenca de Merced, registrarse para recibir actualizaciones por correo electrónico, encontrar horarios y lugares de reunión y hacer un comentario o hacer una pregunta, por favor visite <http://www.mercedsgma.org>.

En cumplimiento de la Ley de Estadounidenses con Discapacidades, si necesita modificaciones o adaptaciones relacionadas con la discapacidad, incluidos viajes o servicios auxiliares, para participar en esta reunión, por favor comuníquese con Ana Muniz-Laguna, Condado de Merced, 209-385-7654.

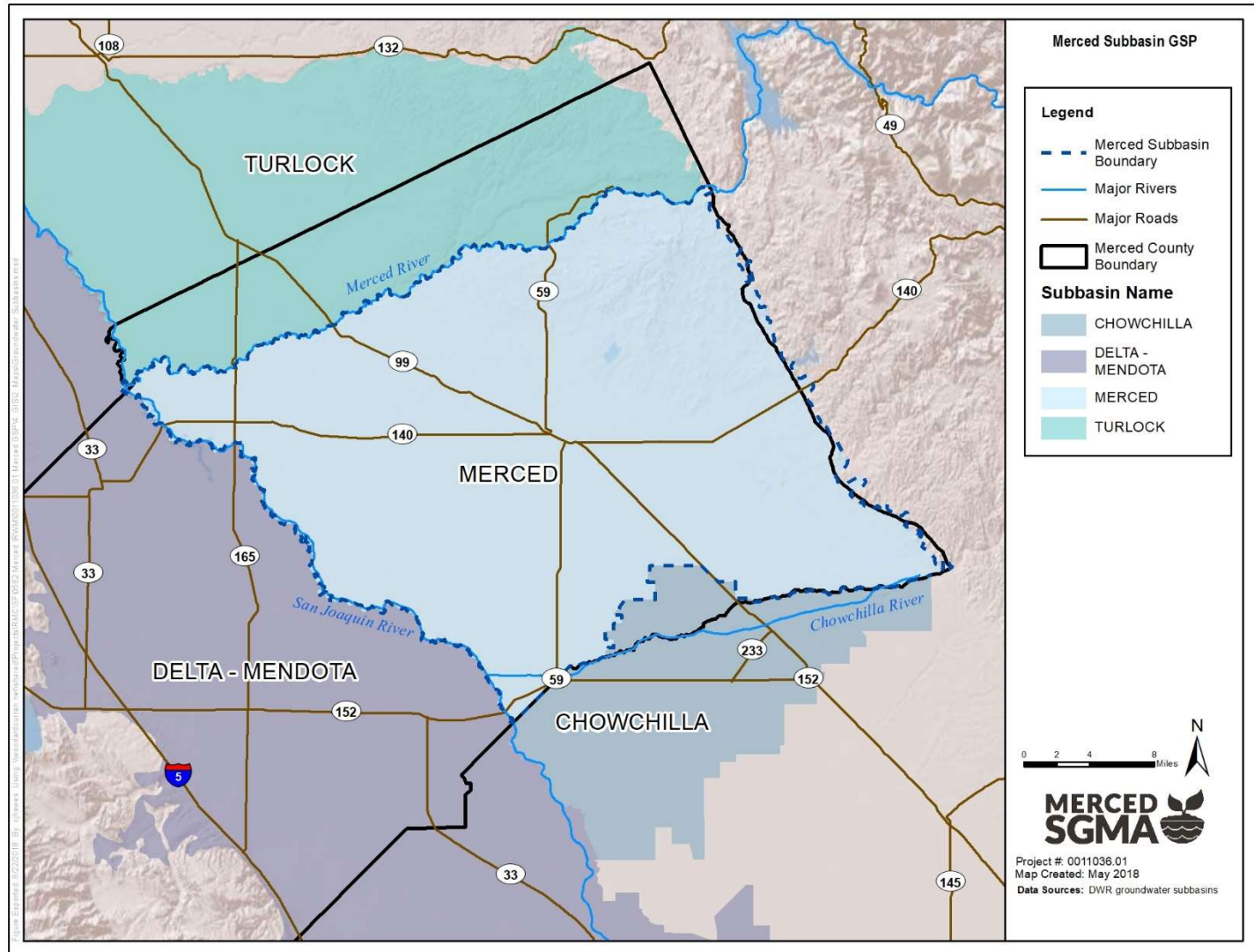


Coordination With Neighboring Basins Update

Image courtesy: Veronica Adrover/UC Merced



Coordination with Neighboring Basins





Questions/Comments from Public

Image courtesy: Veronica Adrover/UC Merced





Next Steps

Image courtesy: Veronica Adrover/UC Merced



What's coming up next?

- GSP Development Items:
 - Monitoring Networks
 - Plan Implementation
- Focus for June meeting
 - Discussion and comments for draft sections
 - Process for GSP Adoption and next steps
- Adjourn to next meeting: June 24th, 1:30 PM at Castle Conference Center

Image courtesy: Veronica Adrover/UC Merced

GSP Coordinating Committee

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Merced Subbasin GSA
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Image courtesy: Veronica Adrover/UC Merced

