

Agenda

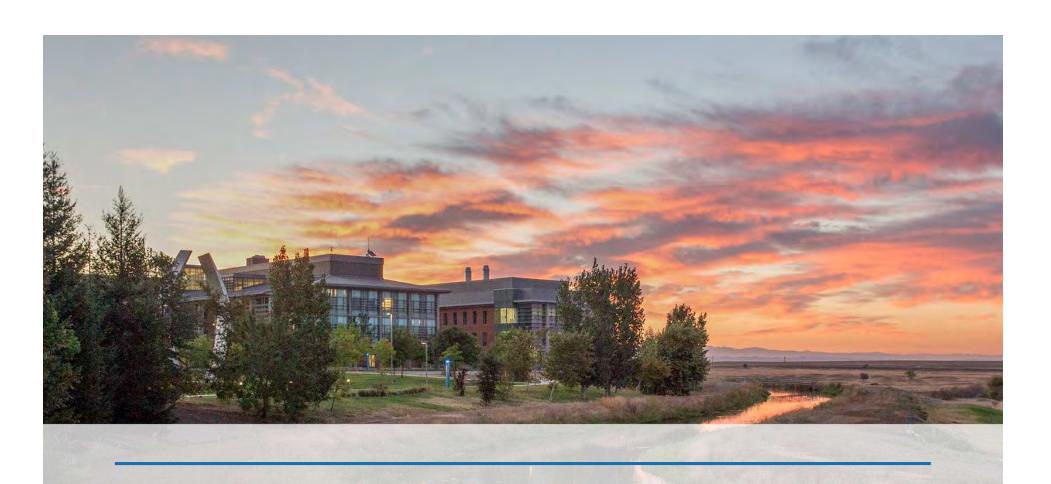
- 1. Call to order
- 2. Approval of minutes for June 24, 2019 meeting
- 3. Stakeholder Committee update
 - 1. Update from July 22 morning meeting
- 4. Presentation by Woodard & Curran on GSP development
 - 1. Public Draft GSP (released 7.19.19)
 - 2. Highlights of key sections for review
- 5. Water Allocation Framework
 - 1. What is in GSP
 - 2. Roadmap for continuing discussions



Agenda

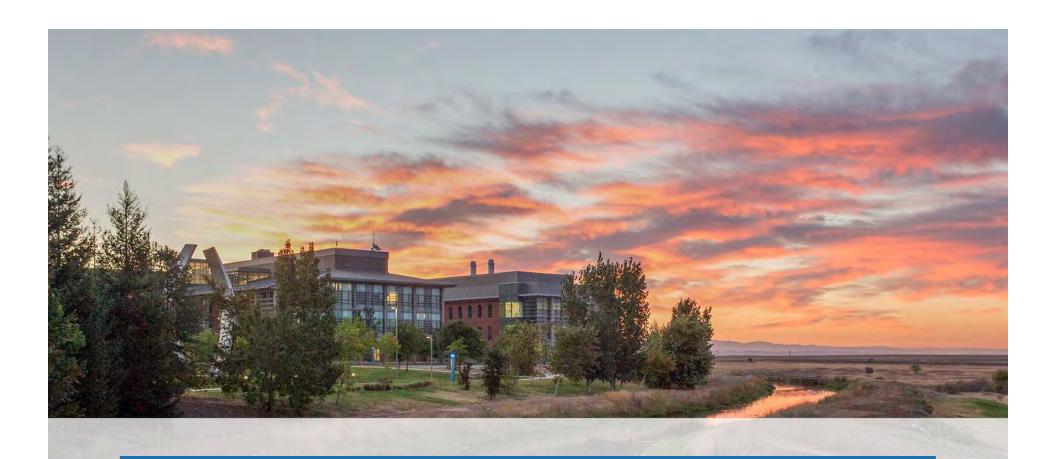
- 6. Public Outreach Update
- 7. Coordination with Neighboring Basins
- 8. Public Comment
- 9. Next Steps and Adjourn





Approval of Minutes





Stakeholder Committee Update





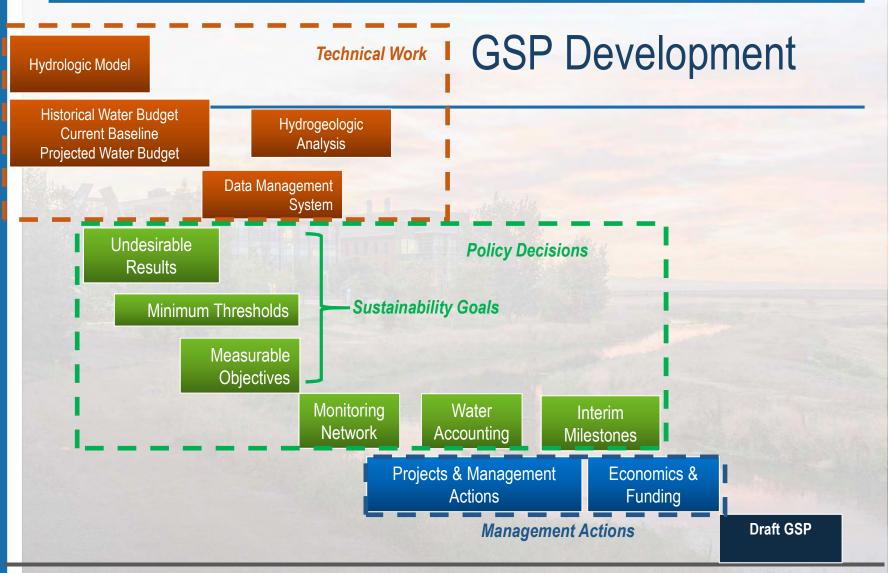
Next Steps in GSP Development





Public Draft GSP





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



Revised Merced GSP Review & Submission Timeline

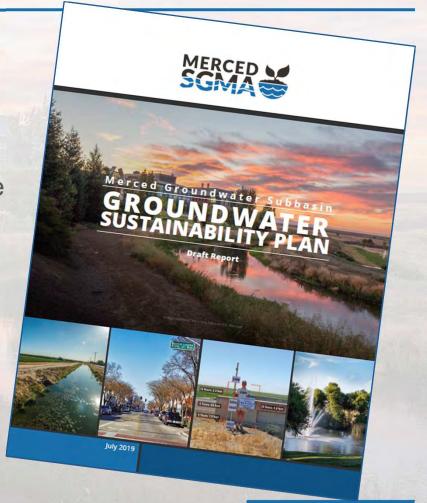
30-day Public Review Period

Consideration of Comments, Prep of Final GSP, and Public Hearings

JULY	AUG/SEPT	OCTOBER	NOV/DEC	DEC/JAN
Release Public Draft GSP - July 19 Send Notice of Intent to Adopt to Cities and Counties – July 22	Review and Comments on Draft GSP	Consulting team revisions to incorporate comments	Recirculate to GSA Boards. Must be adopted by MSGSA, TIWD GSA-1, MIUGSA + its member agencies	Submit to DWR
SC & CC meetings July 22	SC meeting Joint Board meeting of the three GSA Boards		Adoption hearings begin no sooner than October 21 (90 days after NOI)	Must be submitted by January 31, 2020

Release of Public Draft GSP

- Published on Website July 19
- Executive Summary, GSP (375pp), Appendices
- Have hard copies of Executive Summary for SC and CC today
- Will make hard copy of GSP available at each GSA main offices and public libraries in basin
- Email blasts and press releases announcing availability







Public Draft GSP Highlights



Highlights of key sections/topics for review

- Sustainable Yield and Climate Change
- Sustainable Management Criteria
 - Water Level Minimum Threshold
 - Water Quality Minimum Threshold
- Projects and Management Actions
- Plan Implementation



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.



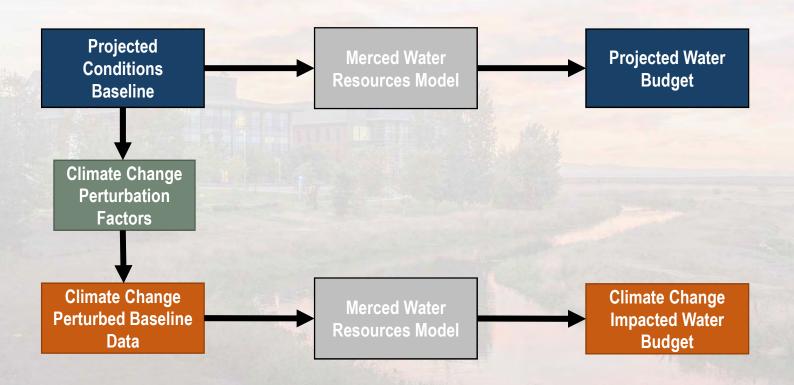
Sustainable Yield

- 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



Climate Change Uncertainty Analysis:

Approach for Merced GSP Consistent with DWR Approach



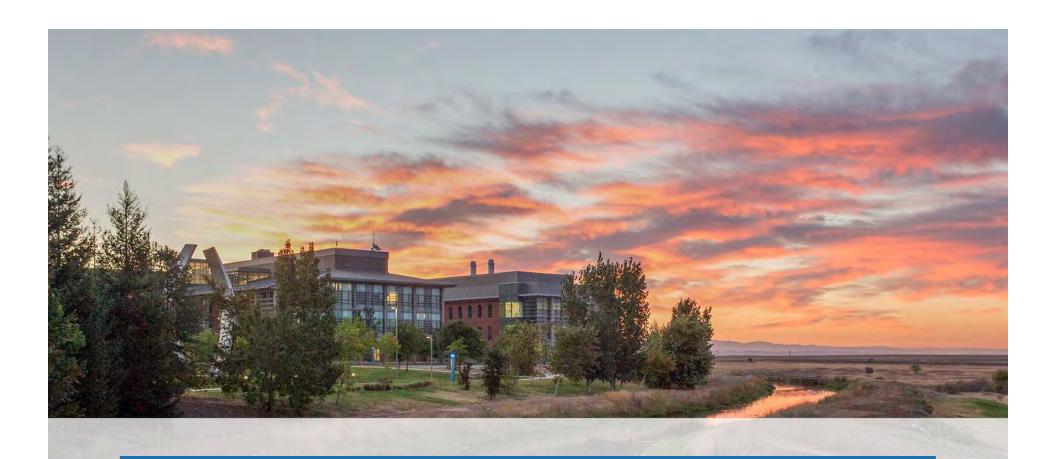
A change factor from DWR is applied to the Projected Data Baseline to simulate the impact of climate change. This creates the Climate Change Baseline, which is put into the Merced model. The output is the Climate Change Water Budget.

Climate Change Uncertainty Analysis:

Summary of Findings

- Analysis was based on the projected conditions baseline with 2070 climate change perturbed inputs for streamflow, precipitation, and ET
 - Evapotranspiration forecasted to increase 7%
 - Surface water availability increases 4%
 - Groundwater pumping simulated to increase 7% from 536,000 AFY to 565,000 AFY
- Depletion in aquifer storage projected to increase from 82,000 AFY to 130,000 AFY
- Analysis based on regional model recommended future refinement to use MIDH2O to better simulate local operations response to changes in water demands





Sustainable Management Criteria



Sustainable Management Criteria

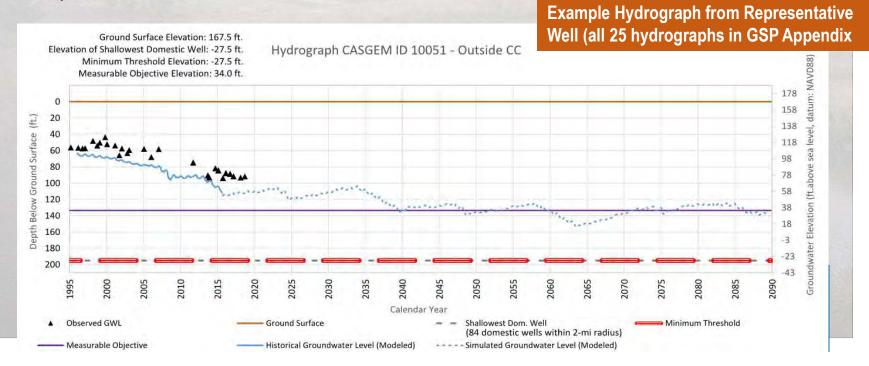
Sustainability Indicator	Minimum Threshold (MT)	Measurable Objective	Undesirable Result		
Groundwater Levels	Depth of shallowest well in a 2-mile radius of each representative well or minimum pre-January 1, 2015, elevation	Projected average future groundwater level under sustainable yield modeling simulation	Greater than 25% of representative wells fall below MT in 2 consecutive wet, above normal, or below normal years		
Groundwater Storage	N/A - not present and not expected to occur in the Subbasin due to the significant volumes of freshwater in storage				
Sea Water Intrusion		spected to occur due to the dist sacramento-San Joaquin Delta)	rance between the Subbasin		
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 in	dicator		

Sustainable Management Criteria: Water Level and Protection of Domestic Wells

- Objective: protective of all beneficial uses
 - MT based on domestic wells because they tend to be shallower than ag wells.
- GW level MT for 25 representative wells:
 - Depth of shallowest well in 2-mi radius of representative well (24 wells)
 - Or minimum level pre-Jan 1, 2015 (1 well)
- A single domestic well going dry is not considered an undesirable result that would trigger state intervention
- GSP describes ongoing monitoring of water levels, annual reporting of GW levels, and 5-year GSP updates
- What more should be in GSP about steps GSAs will take:
 - If a well is dewatered?
 - If an individual representative well reaches MT but doesn't trigger an undesirable result?

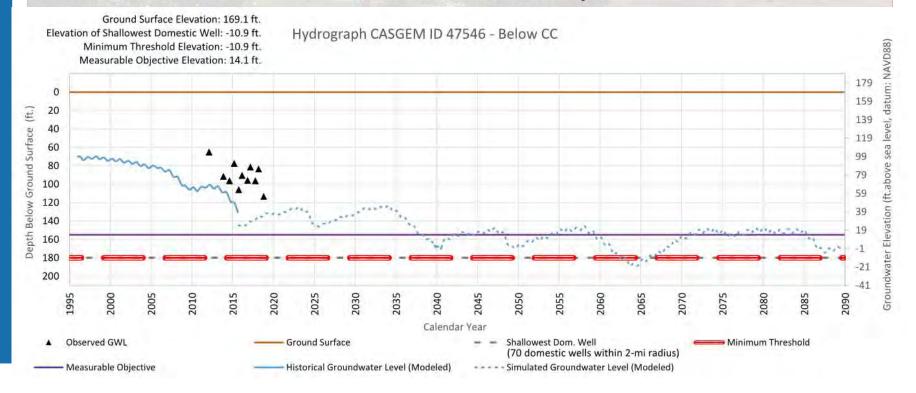
GW Levels under Sustainable Yield Scenario

- Generated hydrographs of sustainable yield scenario for representative well monitoring locations
- Compared water level under sustainable yield to minimum threshold
- No Undesirable Results projected under Sustainable Yield Scenario
- Two out of 25 representative wells reach MT in simulated critically dry period – does not meet criterion for an UR.



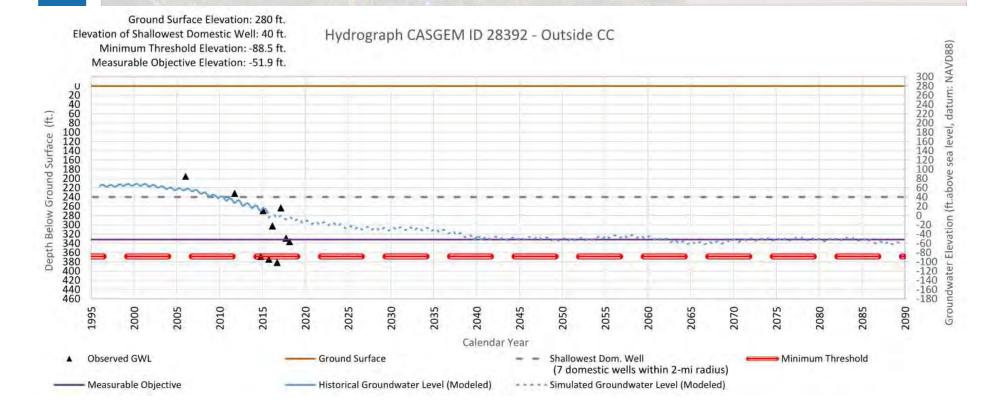
GW Levels under Sustainable Yield Scenario

- 2 representative monitoring wells show simulated GWLs below MT:
 - Occurs during part of critical dry period from 2059-2064 (6-year drought based on 1987-1992 hydrology).
 - CASGEM ID# 47546. Maximum drop in GWLs is 9 feet below the MT. 70 domestic wells within a 2-mile radius. Only 1 would be dewatered.
 - CASGEM ID# 47565. Maximum drop in GWLs is 5 feet below the MT. There are 65 domestic wells within a 2-mile radius. Only 1 would be dewatered.



GW Levels under Sustainable Yield Scenario

- CASGEM well 28392 is the one well where the MT is set at pre-2015 GWLs (e.g. set below shallowest domestic well).
 - There are 7 domestic wells within a 2-mile radius of this CASGEM well. While the simulated GWLs never drop below the MT, it is estimated that 6 out of 7 domestic wells are shallower than the MT.



Sustainable Management Criteria: Water Quality

- Set minimum thresholds for constituents where groundwater extractions affect groundwater quality (causal nexus) and GSAs have authority to control
- 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 – aesthetic standard
 - Agricultural salt tolerances range from 640 1,100 mg/L TDS



Sustainable Management Criteria: Water Quality

- Concern about protecting drinking WQ for domestic users and small communities
 - Numerous other programs and authorities govern and monitor drinking WQ and contaminants:
 - US Environmental Protection Agency
 - State Division of Drinking Water (DDW) and Department of Pesticide Regulation (DPR)
 - Regional Water Board Irrigated Lands Regulatory Program (ILRP)
 - Merced County Division of Environmental Health provided guidance
 - Leadership Counsel provided follow up letter to the Coordinating Committee



Sustainable Management Criteria: Water Quality

- The GSAs will conduct the following ongoing water quality coordination activities:
 - Monthly review of data submitted to the DPR, DDW, EnviroStor, and GeoTracker
 - Quarterly check-ins with existing monitoring programs (such as CV-SALTS and ESJWQC GQTM)
 - Annual review of annual monitoring reports prepared by other programs
 - Invite RWQCB, Merced County Division of Environmental Health, and ESJWQC to meet annually to discuss WQ trends
- Projects reviewed for WQ impacts and benefits
 - Avoid contaminant plumes, or
 - Identify sites where recharge projects could benefit nitrate problems



Discussion

- What more should be in GSP about steps GSAs will take:
 - If a well is dewatered?
 - If an individual representative well reaches MT but doesn't trigger an undesirable result?
 - Further documentation of small communities with contamination issues?
 - Incorporate information from ongoing DAC water needs assessment underway as part of the San Joaquin River Funding Area Disadvantaged Community Involvement Program





Projects and Management Actions



Projects

- For each project, SGMA requires the following information (per §354.44 Projects and Management Actions):
 - Description
 - Measurable objective
 - Public noticing
 - Permitting and regulatory process
 - Time-table for initiation and completion
 - Expected benefits and evaluation
 - How project will be accomplished
 - Legal authority
 - Estimated costs and plans to meet those costs

Projects

12 Shortlisted projects developed based on prioritization criteria developed with SC/CC input (criteria in no particular order):

- Project addresses Disadvantaged Communities (DACs) and or Severely Disadvantaged Communities (SDACs)
- Project addresses areas with known data gaps (sometimes referred to by Basin stakeholders as the "white areas" as they appear "white" or blank on maps of data)
- Project provides basinwide benefit (i.e., benefits all GSAs)
- Project addresses a subsidence area
- Project focuses on recharge
- Project focuses on conveyance
- Project addresses and or prioritizes drinking water
- Project addresses and or prioritizes water for habitat
- Project focuses on monitoring, reporting, and data modeling activities for data collection to be gathered in first 5 years
- Project provides incentives to reduce pumping and to capture surface water (e.g., including flood flows)
- Project is beyond planning phase
- Project already has a dedicated funding mechanism
- Project identified as priority project by at least one GSA



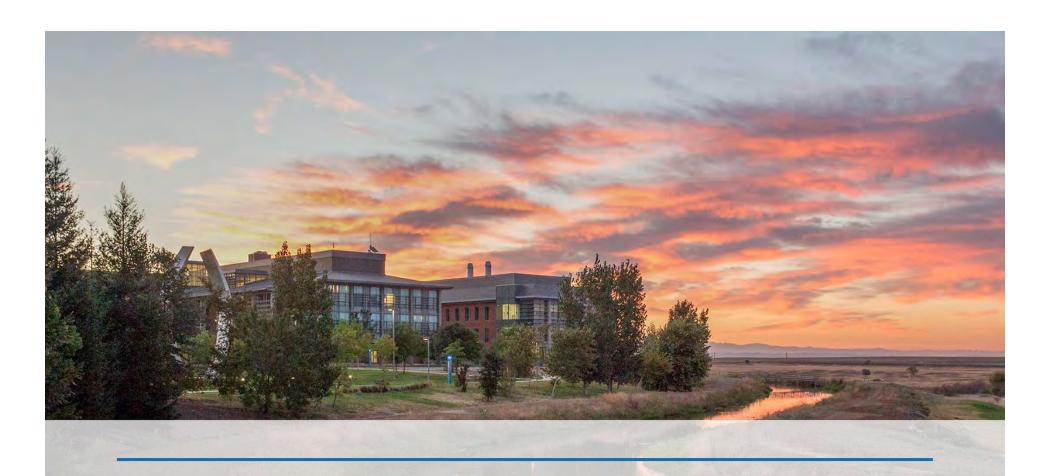
Projects (shortlist)

11 near term projects scheduled to begin in first five years

roject Name	Start	Finish	Funding Secured
Project 1: Planada Groundwater Recharge Basin Pilot Project	1/20	12/23	Υ
Project 2: El Nido Groundwater Monitoring Wells	9/19	12/19	Υ
Project 3: Meadowbrook Water System Intertie Feasibility Study	8/19	6/20	Υ
Project 4: Merquin County Water District Recharge Basin	8/18	12/21	N
Project 5: Merced Irrigation District to Lone Tree Mutual Water Company Conveyance Canal	5/19	11/20	N
Project 6: Merced IRWM Region Climate Change Modeling	6/19	4/21	N
Project 7: Merced Region Water Use Efficiency Program	6/19	12/20	N
Project 8: Merced Groundwater Subbasin LIDAR	8/19	12/20	N
Project 9: Study for Potential Water System Intertie Facilities from MID to LGAWD and CWD	6/19	6/20	N
Project 10: Vander Woude Dairy Offstream Temporary Storage	5/18	5/20	Partially
Project 11: Mini-Big Conveyance Project	6/22	6/26	N
Project 12: Streamlining Permitting for Replacing Sub-Corcoran Wells	8/19	1/20	Υ

Management Actions

- Primary means of achieving sustainability in basin is through implementation of pumping reduction through management actions.
 - Basin-wide Allocation Framework Public draft states that GSAs intend to allocate water to each GSA but have not yet reached agreement on allocations or how they will be implemented
 - Merced Subbasin GSA Allocation Management Action text provided by MSGSA that described their plans for pumping reduction in their GSA area



Plan Implementation



Plan Implementation : 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)

Implementation Elements to Include:

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

GSP Implementation Timeline (full schedule detail in GSP)

2020	2025	2030	2035 2040
Monitoring and Reporting	 Preparation for Allocations and Low Capital Outlay Projects 	Prepare for Sustainability	 Implement Sustainable Operations
 Establish Monitoring Network Install New Groundwater Wells Reduce/Fill Data Gaps 	 GSAs conduct 5-year evaluation/update Monitoring and reporting continue 	 GSAs conduct 5-year evaluation/update Monitoring and reporting continue 	 GSAs conduct 5-year evaluation/update Monitoring and reporting continue
 GSAs allocated initial allocation GSAs establish their allocation procedures and demand reduction efforts Develop Metering Program 	 As-needed demand reduction to reach Sustainable Yield allocation Metering program continues 	As-needed demand reduction to reach Sustainable Yield allocation	Full implementation demand reduction as needed to reach Sustainable Yield allocation by 2040
Funded and smaller projects implemented	 Planning/ Design/ Construction for small to medium sized projects 	 Planning/ Design/ Construction for larger projects begins 	 Project implementation completed
 Extensive public outreach regarding GSP and allocations 	 Outreach regarding GSP and allocations continues 	Outreach continues	Outreach continues

Key Implementation Tasks in First 5 Years

- Finalize allocation framework
- Establish metering program
- Create a data gaps plan
- Develop methodology for establishing minimum thresholds at new wells
- Refine MercedWRM model calibration
- Refine climate change analysis for local surface water operations
- Identify possible mitigation for future domestic well dewatering
- Pursue funding opportunities



Plan Implementation - GSP Governance

- Coordinating Committee is responsible for steering the Merced GSP Implementation Program
 - Quarterly meetings
- Stakeholder Committee continues, with intent to provide input and exchange amongst broad range of stakeholder perspectives
 - Meetings held 2 to 4 weeks before CC
 - Liaison/reporting role to the CC may be created among the members of the SC
- Roadmap of key issues and decisions will guide CC process and SC input





- Implementation of the GSP projected to run between \$1.2M
 and \$1.6M per year
- Costs for projects and management actions estimated at additional \$22.9M in total
 - Costs for individual projects or management actions range between \$75K to \$8M
 - Most of these projects will be implemented within the first five years
- Development of this GSP was substantially funded through a Proposition 1 Sustainable Groundwater Planning Grant
- GSAs to seek funding through pumping fees, assessments, grants, and loans
 - MSGSA has initiated a Prop 218 process for an acreage assessment



Activity	Estimated Cost ¹	Assumptions	
GSP Implementation and Manageme		Assumptions	
GSA Administration	Approx. \$1M annually for all GSAs combined ³	Costs for MIUGSA and MSGSA estimated at \$400K per year each, TIWD estimated at \$140K per year. These include general GSA operating costs, professional services, and costs for coordination of GSA Board meetings.	
GSP Implementation Program Management	\$120,000 annually	Assumes annual costs of grant administration for regional projects or programs, or potential Plan updates. Also includes professional services to support the joint activities of the three GSAs such as costs for coordination & facilitation of SC & CC meetings.	
Public Outreach	\$75,000 annually	Assumes costs for creating communication materials, website updates (incl. maintenance and hosting), and conducting 2 public workshops per year.	
Monitoring Program	\$85,000 annually for fiscal years \$175,000 for first year due to one-time cost items for initial set up.	Assumes costs for GW levels, evaluation of existing water level wells for additional construction information and/or permission for access to wells to collection data, coordination with existing programs ⁴ , obtaining additional construction information for PWS wells, and data management. Does not include costs for new well installation.	
Developing Annual Reports	\$50,000 annually (FY23-FY40) Additional costs during initial years (\$50,000-\$75,000 for FY20 – FY22)	Includes data compiling and reporting on 1) General Information, 2) Basin Conditions, and 3) Plan Implementation Progress.	
Developing Five-Year Evaluation Reports	\$800,000 every 5 years (across 2 fiscal years)	Includes data compiling and reporting on progress for each relevant sustainability indicator, plan implementation progress and updates, monitoring network updates and progress in addressing data gaps, description of new information, amendments, and coordination.	

Funding Authority

Extraction fee

Water Code §10730:

- A GSA may impose fees, including extraction fees, to fund the cost of a groundwater sustainability program, including:
 - Preparation, adoption, and amendment of a GSP; and
 - Inspections, compliance assistance, enforcement, and program administration.

Existing authority

Water Code §10730.8:

 A GSA may impose any tax, assessment, charge, or toll as otherwise provided by law.

Note

 When seeking to impose a tax, assessment, charge or toll <u>not</u> established under SGMA, a GSA must adhere to the process and requirements provided within the authorizing code.

OPTIONS AND Process

Extraction Fee

In order to impose an extraction fee, a GSA must:

- 1) Hold a public meeting;
- Publish data supporting the proposed extraction fee 20 days before the scheduled public meeting; and
- Pass an ordinance/resolution establishing the fee.

Acreage-Based

In order to impose an acreagebased fee or assessment, a GSA must comply with Prop 218:

- Assessments must be approved by majority of ballots cast, with votes weighted according to financial obligation;.
- Fees are subject to majority protest of all affected parcels.

Hybrid

Hybrid options could include a combination of an acreage based assessment or fee, plus an extraction fee based on the volume of groundwater pumped.

Examples

Extraction Fee

Indian Wells Valley Groundwater Authority

- \$30.00 per AF
- \$3.00 per one-tenth AF
- Authority: §10730 & Prop 26: (regulatory fee)

Kings River East GSA

- \$1.45 per AF
- \$3,250.00 flat fee for members with no significant impact
- Authority: §10730 & Prop 26 (regulatory fee)

Acreage-Based

North Fork Kings GSA

- \$10.00 per acre assessment
- Authority: Prop. 218; land-based assessment

McMullin Area GSA

- \$19.00 per acre **fee**
- Authority: Prop 218; property-related fee/water service charge

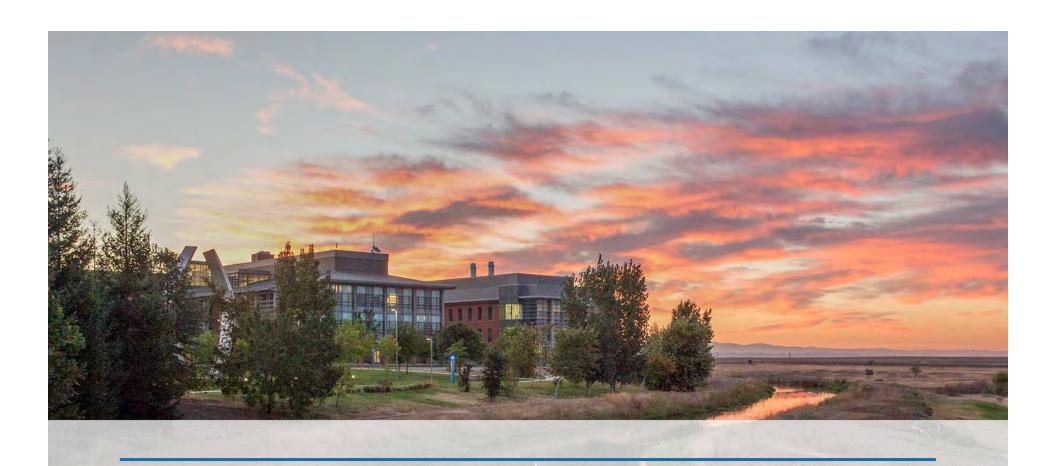
Merced Subbasin GSA

- \$0.50 per acre fee; plus
- \$3.50 per acre **fee** for irrigated lands
- Authority: Prop 218; landowner fee

Proposition 68 Sustainable Groundwater Management Grant Program Opportunity

- Round 3 allows applicants previously awarded funding for Prop 1 (Round 2) funds to apply for development of GSPs and projects that help implement GSPs
- \$46.25M in total will be awarded
- Funding for Merced = \$2M Funding from Prop 1 (Round 2)
 - Awaiting response from DWR on if DAC funding is counted
- Local cost share % requirement depends on DACs
- Solicitation period open for 5 weeks in summer, closes fall
- Project types, preference given to:
 - Efficient use and conservation of water
 - Use of recycled water
 - Capture of stormwater

 Water efficiencies, stormwater capture for infiltration or reuse, or carbon sequestration



Water Allocation Framework



Water Allocation Framework – How we got here

October 2018	November 2018	December 2018	January 2019	February 2019
Legal presentation at SC and CC mtgs providing overview of GW rights law and allocation options	CC and SC discuss potential allocation frameworks	Additional CC and SC discussions – not ready to make recommendation to GSA Boards	Review and revision of estimate of developed supply from seepage More CC/SC discussion	Revised Water Budget Memo prepared with SY estimate More CC/SC discussion of framework

March 2019	April 2019	May 2019	June 2019	July 2019
Continued SC/CC discussion on allocation framework with focus on method for allocation to overlying acres	CC approved allocation framework recommendation to Boards	Administrative draft Management Action text that includes allocation framework. GSA comments to text highlight areas of disagreement on framework	Special CC Session to discuss definition of developed supply used in GSP and allocation framework. Identified areas needing additional discussion.	Finalize text for public draft GSP Continue CC discussions of details of allocation framework



Here's what is in document

- Explanation that GSAs intend to allocate water to each GSA but have not yet reached agreement on allocations or how they will be implemented
- Estimates of basin-wide sustainable yield and developed supply for illustrative purposes

Here's what is in document

- List of next steps needed in first five years of GSP to reach agreement and begin implementation of allocations:
 - Agreeing upon details of how allocations to each GSA will be established
 - Developing, refining, and documenting estimates of developed supply and determining rights to confirmed estimates of developed supply
 - Determining how pumping will be measured through metering program or equivalent
 - Establishing sustainable allocation trading and crediting rules
 - Implementation schedule and timing
 - Conducting outreach and communications



Water Allocation Framework – moving forward

- Approach for moving forward:
 - Confirm areas of agreement
 - Key issues for discussion?
 - Can we develop a roadmap to reach agreement?



Water Allocation Framework – moving forward

Confirm Areas of Agreement: are we in agreement on the following?

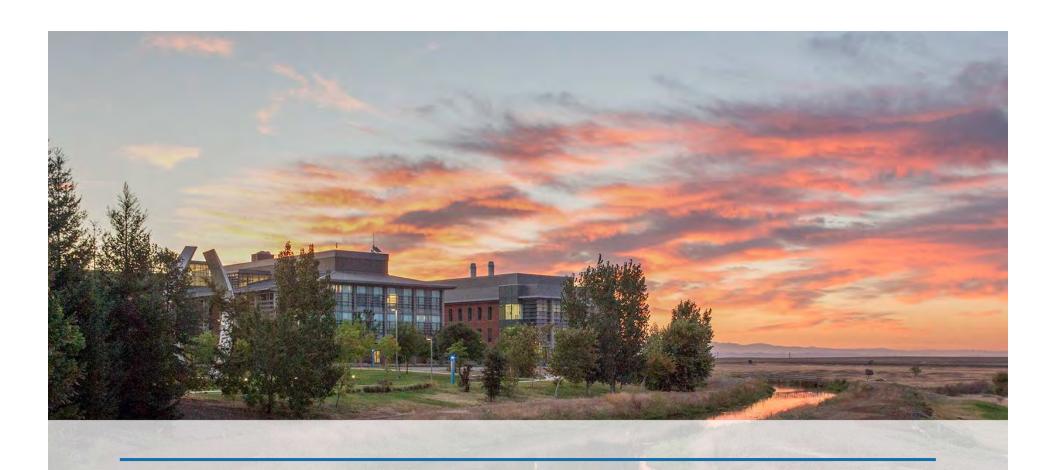
- Historical period for appropriative use (2006-2015)
- That water rights concepts should be considered
- That appropriators should be allocated based on their historical use
- That allocation to overliers should be based on acreage (AF/acre), not historical use
- That each GSA will get an allocation

Water Allocation Framework – moving forward

Are these the right questions that need to be resolved?

(based on discussion during SC/CC meetings and section comments)

- Is allocation by GSA based on proportional land area?
 - Agree to subtract federal lands?
 - Would land area of Cities be subtracted since they get appropriative share?
- Can GSAs reallocate from undeveloped to developed within their GSA once they get their allocation?
- How will GSAs ensure over-pumping not occurring if the numbers are wrong (modeling estimates)?
- Is demand reduction needed shared equally by overliers and prescriptive
- How will prior conservation efforts by Cities be accounted for?
- What will be process for bringing new pumpers on board?
- How do GSAs ensure their implementation of allocations within GSA don't harm the other two GSAs?



Public Outreach Update



Public Outreach Update

- Notice of Intent to adopt GSP issued
- Will have 30-day public comment period from release of Draft GSP
- Public can provide comments also via Merced SGMA email address (see Contact Us page on Merced SGMA website)
- Joint GSA Board Public meeting to take place in September to review comments received
- Adoption hearings to be held in Fall2019



Merced Subbasin Notification, July 19, 2019

Draft of Groundwater Sustainability Plan for Merced Subbasin Available for Public Review and Comment

Over the past 18 months, the three Groundwater Sustainability Agencies (GSAs) in the Merced Subbasin have worked together to develop a Draft Groundwater Sustainability Plan (GSP) that is now available for public review and comment. The three GSAs are as follows:

- 1. Merced Subbasin Groundwater Sustainability Agency (MSGSA)
- 2. Merced Irrigation-Urban Groundwater Sustainability Agency (MIUGSA)
- 3. Turner Island Groundwater Sustainability Agency (TIWDGSA-1)

The Draft GSP is available for public review and comment for a 30-day public comment period, from July 19 through August 19.

Where to Review the Draft GSP

The full document will be available as follows

- 1. Online at www.mercedigma.org
- 2. Hardcopies are available at the following locations

Public Locations

- Merced Public Library, 2100 O St, Merced, CA 95340
- Le Grand Branch Library, 12949 Le Grand Rd, Le Grand, CA 95333
- Atwater Branch Library, 1600 Third St, Atwater, CA 95301
 Winton Branch Library, 7057 Walnut Ave, Winton, CA 95388
- Winton Branch Library, 7057 Wainut Ave, Winton, CA 95336
 Livingston Public Library, 1212 Main St, Livingston, CA 95334
- Planada Community Services District, 103 Live Oak St, Planada, CA 95365

Three GSA Main Offices

MSGSA - Merced County Community and Economic Development, Front Counter, 260 E. 15th Street, Merced, CA 95341

MIUGSA - Merced Irrigation District, 744 W. 20th Street, Merced, CA 95340 TIWDGSA-1 - 1269 West I Street, Los Banos, CA 93635

Ways to Submit Public Comments by August 19, 2019

Comments on the Draft GSP can be submitted by mail or email to:

Email: mercedsgma@woodardcurran.com

U.S. Mail: Hicham Eltal, Merced GSP Contact, Merced Irrigation District, 744 W 20th St., Merced, CA 95340

×



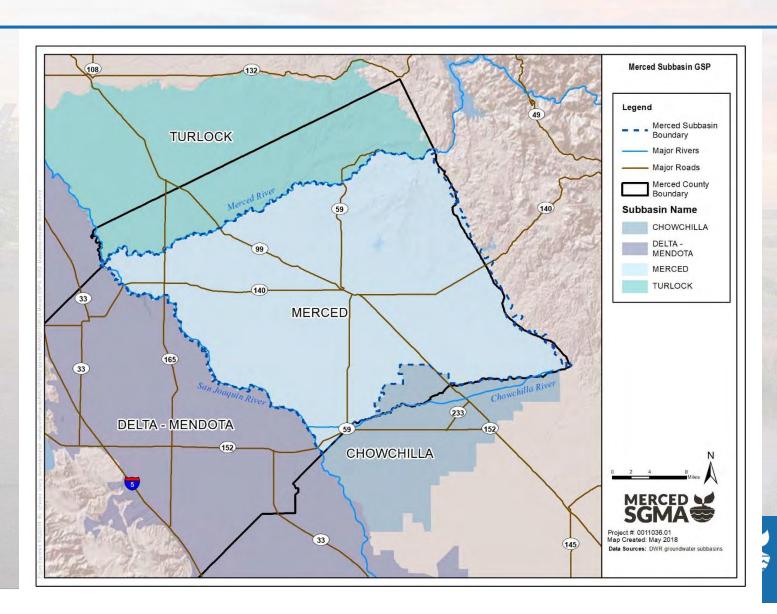
Coordination With Neighboring Basins Update



Coordination With Neighboring Basins Update

- Meeting set up with Delta Mendota team to review overview
 of Draft GSP contents with focus on interbasin flows
- Delta Mendota has indicated they would like to consider and start developing an inerbasin coordination agreement
- Goal: continue interbasin coordination and identify any upcoming issues of differences in technical approach

Coordination with Neighboring Basins





Questions/Comments from Public





Next Steps



What's coming up next?

- Joint GSA Boards Meeting in early September (currently finalizing schedule)
 - Review and discuss public comments on draft GSP
- Adjourn to next meeting: not currently scheduled



