

Merced GSP Response to Public Comments

The Merced GSP Public Draft was published July 19, 2019 and written comments were collected for a 30-day period ending August 19, 2019. Additional comments were also received at a joint meeting of the three GSA Boards held on September 18, 2019. Comments from the joint boards meeting are documented in the meeting minutes which are included with the comment letters in this Appendix. Individual comments from all letters and the public were reviewed, categorized, and addressed in one of three ways:

Response Type	Response Approach
Minor Corrections/Clarifications	Direct edits to text in GSP
Substantive comments on Draft GSP	Categorized by topic, master response developed for each topic
Comments on future considerations for GSP Implementation	Categorized and compiled for GSA Board consideration and future Coordinating Committee meeting discussion.

For comments that were substantive (not considered “Minor Corrections/Clarifications” or “Comments on future considerations for GSP Implementation”), master responses have been developed and are presented below the summary table below.

Commenter	Corresponding Master Responses
Amsterdam Water District	Demand Management
Audubon California	Stakeholder Outreach, GDEs, Water Budget Development, Allocation Framework, New Project Recommendations, Project-specific recommendations, Project prioritization criteria
Billy Grissom	Management Area, Allocation Framework, Demand Management
California Department of Fish and Wildlife	GDEs, Water Budget Development, GWQ MT/MO Methodology, Justification for using GWLs as proxy for depletion of interconnected surface waters, Allocation Framework
California Poultry Federation	Allocation Framework, Demand Management
Clayton Water District	GWQ MT/MO Methodology
East Turlock Subbasin and West Turlock Subbasin GSA Joint Technical Advisory Committee	(no comments)
Joint Letter from Environmental Organizations: Union of Concerned Scientists, Audubon California, American Rivers, Clean Water Action/Clean Water Fund, The Nature Conservancy	Stakeholder Outreach, Basin Settings, GDEs, Water Budget Development, Water Budget Documentation, Climate Change, Management Area, GWL MT/MO Methodology, GWQ MT/MO Methodology, Depletions of Interconnected Surface Waters, Justification for using GWLs as proxy for depletion of interconnected surface waters, Project prioritization criteria
Joint Self-Help Enterprises and Leadership Counsel Focused Technical Review	Water Budget Development, Water Budget Documentation, GWL MT/MO Methodology, GWQ MT/MO Methodology, New Project Recommendations
Lanny E Seliger	New Project Recommendations

Leadership Counsel for Justice and Accountability	Stakeholder Outreach, Water Budget Development, Water Budget Documentation, GWL MT/MO Methodology, Groundwater storage MT/MO Methodology, GWQ MT/MO Methodology, Subsidence, Depletions of Interconnected Surface Waters, Allocation Framework, New Project Recommendations
Marsha Burch (Valley Land Alliance)	Climate Change, Subsidence, Allocation Framework, New Project Recommendations
Merquin County Water District	Management Area
Nickel Family LLC	Subsidence
Olam Edible Nuts	Allocation Framework, Demand Management
San Joaquin River Exchange Contractors GSA	Water Budget Development, GWL MT/MO Methodology, Groundwater storage MT/MO Methodology, Subsidence
Sandy Mush Mutual Water Co.	Demand Management, Project-specific recommendations
Self-Help Enterprises	Stakeholder Outreach, Basin Settings, Water Budget Documentation, Sustainability Goal, Management Area, GWL MT/MO Methodology, GWQ MT/MO Methodology, Subsidence, Allocation Framework, Demand Management, New Project Recommendations, Project-specific recommendations
The Nature Conservancy	Stakeholder Outreach, Basin Settings, GDEs, Water Budget Documentation, Justification for using GWLs as proxy for depletion of interconnected surface waters, Project-specific recommendations,
US Fish and Wildlife Service	Project-specific recommendations

DRAFT

STAKEHOLDER OUTREACH

Several comments asserted that the outreach efforts for developing the GSP were not sufficient, particularly to environmental interests and disadvantaged communities. Outreach to stakeholders was a priority for the GSAs and was guided by a Stakeholder Engagement Strategy (see Appendix N) developed early in the GSP process and reviewed by the Coordinating and Stakeholder Committees.

Stakeholder and community outreach was conducted throughout the GSP development, primarily through a Stakeholder Committee and community workshops. The Stakeholder Committee consisted of 21 (initially 23) community members representing the diverse groundwater users in the basin including urban, agricultural, and community water systems, disadvantaged communities, individual users, and environmental organizations (see sidebar). The Stakeholder Committee met 16 times, beginning in May 2018, to review the analysis and content of each section of the GSP and provide recommendations to the Coordinating Committee.

Several comments raised concerns about the balance of the Stakeholder Committee representation and inclusion of small communities, drinking water users, and environmental interests.

The composition of the stakeholder committee was determined by the Coordinating Committee with approval of the GSA governing boards. The GSAs conducted a public application process in early 2018 during initiation of the GSP development process. The GSAs sought participants to represent local knowledge of the broad interests and geography of the basin. Specifically the application stated the GSAs were seeking:

- Groundwater Users
- Community / Neighborhood Interests
- Flood Management Interests
- Agricultural Interests
- Other Business Interests (non-agriculture)
- Environmental Interests
- Other Institutional Interests (e.g. UC Merced, Board of Education)
- Disadvantaged Community and Environmental Justice Interests

Stakeholder Committee

1. Arlan Thomas, MIDAC
2. Ben Migliazzo, Live Oak Farms
3. Bill Spriggs, resident (formal mayor, City of Merced)
4. Bob Salles, Leap Carpenter Kemps Insurance
5. Brad Robson, Buchanan Hollow Nut Co. and Le Grand-Athlone Water District
6. Breanne Ramos, Merced County Farm Bureau
7. Brian Carter, D&S Farms
8. Carol Bonin, Winton M.A.C.
9. Daniel Machado, Machado Backhoe Inc.
10. Darren Olgwin, McSwain MAC
11. Frenchie Meissonnier, Rice Farmer
12. Galen Miyamoto, Miyamoto Farms
13. Gino Pedretti III, Sandy Mush Mutual Water Company
14. Jean Okuye, East Merced Resource Conservation District
15. Joe Scoto, Scoto Bros Farms / McSwain Union School District
16. Maria Herrera, Self-Help Enterprises
17. Mark Maxwell, UC Merced
18. Maxwell Norton, Retired agricultural researcher
19. Parry Klassen, East San Joaquin Water Quality Coalition
20. Rick Drayer, Drayer Ranch
21. Simon Vander Woude, Sandy Mush Mutual

The Coordinating Committee reviewed applications and selected a 23-member committee intended to include:

- A majority of full and part-time residents in the Merced Subbasin.
- Representation the geographic regions of the Merced Subbasin.
- Representation of the diverse demographics of the Merced Subbasin including both urban and rural groundwater users, varied farming and ranching interests, disadvantaged community representatives, environmental interests, and other representatives of the diversity of the beneficial uses and users of groundwater in the Subbasin.

Self Help Enterprises (SHE) was included on the Stakeholder Committee to represent underrepresented small communities and to identify additional representatives from small, underrepresented communities. To date, no additional representatives have been identified. The community representatives for Atwater and Livingston resigned during GSP development and replacements have not been identified. Atwater is represented on the Coordinating Committee and both cities are parties to the MIUGSA Memorandum of Understanding (as is the City of Merced). Environmental interests were represented through the East Merced RCD. Note that some stakeholders represent multiple interests given their roles in the community. The Stakeholder Committee operated on a consensus basis for discussion and recommendations. This process is appropriate for a committee where some participants may feel they could be out voted by other members. The GSAs will review Stakeholder Committee participation and fill vacancies for the implementation phase.

The GSAs hosted five community workshops through GSP development. These workshops were conducted in communities across the basin in the evening to maximize accessibility for community members (Merced, Planada, Franklin, Livingston, and Atwater). Workshop locations and content were planned in partnership with SHE and Leadership Counsel for Justice and Accountability (LC), both of which have contracts with DWR to assist with outreach for disadvantaged communities. Simultaneous Spanish translation was provided at each workshop by Woodard & Curran or SHE. Each workshop provided background on SGMA, the GSAs, and GSP timeline, as well as specific content on water budget, sustainability criteria, projects and management actions, and implementation, as it was available. In addition, SHE and LC conducted additional workshops in several disadvantaged communities to provide background on SGMA, how to engage with the GSAs, and the GSP issues as they were identified.

Community workshop notices in English and Spanish and news items were distributed to the project contact list, posted on the GSP website, distributed through local government (e.g., City of Livingston and Planada Community Services District) and local organizations (e.g., Merced County Farm Bureau, Chamber of Commerce, and East Merced RCD). In addition, SHE and LC posted and distributed flyers by hand in the communities before workshops. Newspaper ads and press releases also announced community workshops and opportunities to comment on the draft GSP. All information about community workshops and Stakeholder Committee and Coordinating Committee meetings is posted on the GSP website, www.mercedsgma.org. The Stakeholder Engagement Plan provides additional detail on the outreach and communications strategies (see Appendix N).

Several comments suggested continued community outreach during implementation, revisions to the Stakeholder Committee process, and additional representation on the Stakeholder Committee and GSA Boards. The Stakeholder Committee has expressed an explicit interest to continue its review and advice on critical GSP implementation issues. The GSAs are considering Stakeholder Committee representation, timing, and relationship to Coordinating Committee and GSA board decision-making. The GSAs are also considering the outreach activities to be conducted during implementation and are committed to continued stakeholder engagement.

BASIN SETTINGS

Comments on Basin Settings requested more description of shallow groundwater conditions including groundwater level conditions in and around disadvantaged communities and severely disadvantaged communities

(DACs/SDACs). The GSP reflects the information the GSAs currently have on water quality in DAC/SDAC areas. The GSAs understand that a DAC water needs assessment is being conducted under the Integrated Regional Water Management (IRWM) program. The San Joaquin River Funding Area Disadvantaged Community Needs Assessment Report is in draft and the GSAs will incorporate information from the report in their GSP update when it is publicly available.

Comments also included requests for more information about conditions during the drought and the County's tanked water program. The GSP has been revised to include additional information provided by the County on the tanked water program.

Additional information was also requested describing water quality conditions for uranium, a naturally occurring constituent in the Subbasin. The GSP reflects the available data on uranium. The reason spatial and temporal analyses of uranium are not included in the GSP is due to data limitations – there are not enough data points to meaningfully characterize current or historical conditions. While commenters noted that uranium is listed as present in the Data Management System (DMS), there are only 2 data points at 2 locations for uranium. These data were collected by the United States Geological Survey as part of California's Groundwater Ambient Monitoring and Assessment (GAMA) Program, a program created by the State Water Resources Control Board in 2000. The uranium data were collected as part a one-time USGS sampling effort to characterize water quality in California basins. Uranium is not a regularly monitored constituent in the Subbasin.

Additional information was also requested describing the water quality analysis conducted for arsenic. Like all other water quality constituents presented in the Current and Historical Conditions (with the exception of nitrate and salinity), available data through 2012 was analyzed in detail as part of the 2013 Salt and Nutrient Study compiled as part of the Merced Integrated Regional Water Management Plan (IRWMP). Additional information about the source of data and the analysis methodology has been added to the GSP. Data limitations, particularly with respect to depth, are identified as part of the GSP and additional water quality monitoring will be developed to inform the understanding of current water quality conditions, particularly as they pertain to depth and the characterization of the three Principal Aquifers.

The information in Basin Settings reflects the available information for these constituents. Plans for addressing water quality data gaps moving forward are discussed in more detail in the Monitoring and Implementation sections of the GSP. The GSAs plan to request additional state grant funding to address data gaps.

There was also a general comment that applies to a few GSP chapters, requesting that maps be overlaid with the location of DACs, domestic wells, community water system boundaries, city boundaries, and/or other sensitive beneficial users. This comment was considered and it was decided that the additional detail would obscure the information presented. For example, the publicly available locations for domestic wells published by DWR are aligned by township and range and end up creating a matrix of what appear to be evenly spaced dots. This would potentially obscure the information presented in many of the maps. In response to the comment, additional detail was added to Figures 1-8 and 1-9 Non-Domestic and Domestic Wells to show city and community boundaries to provide more context to the reader.

GROUNDWATER DEPENDENT ECOSYSTEMS

Comments on groundwater dependent ecosystems (GDEs) expressed concern that further declines in water level could negatively impact GDEs in the basin. The letters included lengthy comments critical of the methodology used to identify areas likely to be GDEs and suggested changing the methodology to increase the extent of areas assumed to be GDEs and stating that this would make the GSP more protective of GDEs. Specifically, some commenters

proposed assuming all Natural Communities Commonly Associated with Groundwater (NCCAGs) are likely GDEs until the GSAs have collected data to prove otherwise.

DWR provides guidance on use of the NCCAG dataset in GSP development, stating that “[t]he Natural Communities dataset is provided by DWR as a reference dataset and potential starting point for the identification of GDEs in groundwater basins. The Natural Communities dataset and its source data can be reviewed by GSAs, stakeholders, and their consultants using local information and experience related to the validity of mapped features and understanding of local surface water hydrology, groundwater conditions, and geology...”¹

This DWR guidance resulted in the methodology used for this GSP which was to identify likely GDEs in the subbasin by combining the NCCAG database with additional local data and knowledge. The database was a starting point to identify areas dependent on groundwater.

The GSAs considered all beneficial uses in establishing sustainable management criteria including the beneficial use of water for the environment. The relationship between groundwater level, particularly in shallower aquifers, and groundwater dependent ecosystems, is not well understood in the basin. The GDEs in the Subbasin are located within the area of the Corcoran Clay. The Corcoran Clay provides a significant barrier to vertical flow, resulting in pumping below the Corcoran Clay having a limited impact to the open aquifer above the Corcoran Clay including shallow or perched groundwater, and thus a limited impact on GDEs. There is limited information on the relationship between pumping above the Corcoran Clay and groundwater conditions at depth ranges accessed by GDEs. However, the two primary areas where likely GDEs were identified in the basin are areas near surface water where most groundwater is pumped from a deeper aquifer. The vertical separation between the portion of the aquifer being pumped and the shallow groundwater accessed by GDEs limits the impact of pumping on the GDEs. In contrast, many domestic wells are screened at depths similar to, or somewhat shallower than, nearby domestic, agricultural, or municipal wells. Thus, shallow domestic well users were considered the beneficial use most sensitive to groundwater level changes caused by overpumping and were the basis for setting minimum thresholds for groundwater levels. The GSP Implementation chapter identifies additional monitoring of very shallow groundwater conditions near both GDEs and deeper monitoring wells to improve the ability to evaluate these conditions in GSP updates.

Commenters suggested using the GDE Pulse Tool to identify likely GDEs in the basin. The GDE Pulse Tool is a new, free online tool developed by The Nature Conservancy that is designed to enable GSAs to assess changes in GDE health using satellite (35 years of Landsat data), rainfall, and groundwater data. This tool was released in mid-2019 and SGMA deadlines did not allow for the tool to be considered for incorporation into the Merced GSP. The GSP Implementation chapter has been revised to identify the GDE Pulse Tool as a tool to be evaluated for use in the GSP updates.

Shallow groundwater monitoring, particularly in the El Nido area and near the San Joaquin River, is identified as a critical data gap in the GSP. The GSP implementation section has been revised to indicate that new monitoring well sites in areas near likely GDEs should include a very shallow well at the same location, to the extent funding and logistics allow. The GSAs are also requesting additional funding from the state to aid in addressing data gaps through a grant program established by the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018 (Proposition 68). A multi-level monitoring well is already planned for installation at the fire station in

¹ DWR, 2018, *Summary of the “Natural Communities Commonly Associated with Groundwater” Dataset and Online Web Viewer*. accessed online at <https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf>.

El Nido as a result of Sustainable Groundwater Planning Grant Program Round 2 funding by the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1).

Commenters also suggested that the new monitoring well being constructed in El Nido be included as a representative well in the GSP. This is the intent of the GSAs. As additional wells are added to the monitoring network, they will be considered for inclusion as representative monitoring wells based on their ability to contribute to characterization and management of groundwater conditions in the Subbasin. The GSAs are planning to develop a methodology for establishing sustainable management criteria for new wells with no data available for pre-2015 groundwater levels.

WATER BUDGET DEVELOPMENT

Several comments requested clarification of how wetlands/habitat areas were classified and how water demands were developed. Clarifying information has been added to the GSP section on water budgets to describe how applied surface water and applied groundwater, as well as deep percolation, in wetland/habitat areas are aggregated into the other categories already shown in summary tables. It is difficult to disaggregate it because information for demands from private wetlands/habitat areas were not readily available. However, the model was calibrated and validated for consumptive use using remote sensing of evapotranspiration data (METRIC) which is expected to result in a net accurate model result for these aggregated categories, even if the individual wetland components couldn't be tabulated separately. Clarifying information has also been added to the same section describing that the water budget values for urban water demands are based on the best information available provided by water agencies serving the regions. In the three city regions (Atwater, Merced, and Livingston), water demands for all scenarios were based on their respective most recent (2015) Urban Water Management Plans (UWMPs). Water demands for the remaining areas were based on population data (by census tract) multiplied by a per capita usage averaged from the UWMP regions. The projected population growth for non-city regions was also based on an average population growth projected in the UWMPs. It is anticipated that the projected water budget will be refined and updated in future GSPs.

To address model uncertainty, additional information has been added to the water budget section and has been summarized here. All groundwater models contain assumptions and some level of uncertainty. They are decision support tools used to better understand complex interactive systems. Sources of model uncertainty include heterogeneity in hydrogeologic properties and stratigraphy, quality of historical data, projections of future land use, hydrology, and climate. The MercedWRM model has been calibrated and validated. Inputs for GSP related modeling runs used the best available data and science. Projections of future land use and water demands were based on the most recent planning documents prepared by agencies in the basin. The model in its current form represents the best available representation of the basin. As additional information is collected during GSP implementation, the model will be updated to reflect the newly available data. Efforts to address basin data gaps will improve information available for the model. Specific assumptions implemented when modeling future conditions are discussed in Section 2.3.3.3 - Projected Water Budget.

WATER BUDGET DOCUMENTATION

Several commenters noted that MercedWRM (model) documentation was not completed in time for publishing with the Draft GSP. The model documentation was uploaded to the MercedSGMA website on September 17, 2019. The MercedWRM model has been developed for use in the basin over the last five years (since 2014), with additional coordination occurring well beforehand, through an open and transparent process consisting of frequent workshops with Merced Area Groundwater Pool Interests (MAGPI) members and a Technical Workgroup consisting of representatives of the Department of Water Resources, the US Geological Survey, and local agencies.

The model was thoroughly reviewed and calibrated prior to initiating the process of developing the GSP. Additionally, model assumptions and inputs were discussed in the Coordinating Committee and Stakeholder Committee meetings in summer 2018, and stakeholders were able to provide input at that time. In addition, as modeling results were used

to inform sustainable management criteria during the development of the GSP, uncertainties in model results were discussed in multiple committee meetings. The GSAs would have preferred to have the full model documentation available, but did not want to delay publishing the draft GSP document while the documentation was being finalized, and believe that the information provided in the GSP itself is sufficient for reviewing the water budgets and the GSP as a whole.

The GSP section on Water Budgets summarizes the major assumptions and data sources for the inputs to each scenario (under historical, current, and projected conditions). The appendix for model documentation largely provides additional technical information used to develop the model (such as aquifer layer definition and boundary conditions) as well as model calibration procedures and results. The majority of the underlying geology and aquifer layer definition is already included in the hydrogeologic conceptual model (HCM) section of the GSP.

Commenters requested additional detail on how urban demands were calculated in general and also how they were reduced for the sustainable yield analysis. To address these requests, additional information has been added to the water budgets section to describe the methodology by which urban demands were calculated, with some example water use rates (in GPCD) added in the list of baseline assumptions. Clarifying text has also been added to explain how urban demands were reduced in conjunction with agricultural demands for the sustainable yield scenario. The methodology for reducing basinwide pumping to estimate sustainable yield was developed solely for the purpose of estimating basinwide sustainable yield and is not intended to prescribe or describe how pumping would actually be reduced in the basin during GSP implementation to achieve sustainability. The implementation of pumping reductions to achieve sustainability will be done by the GSAs and take into account multiple considerations including water right and beneficial uses including the human right to water. The status of plans for implementing management actions related to pumping reductions is further discussed in Projects and Management Actions.

A comment suggested that acres of each land use type should be presented, particularly how historical land use varies over the historical water budget period. This information is presented for historical conditions in the Merced WRM Model Documentation (Appendix D to the GSP) in Figures 13 & 14.

A comment requested time series graphs of water budget results by year. In response to this comment, graphs were added to the GSP section for Water Budgets.

CLIMATE CHANGE

Comments on climate change requested more information on how climate change affects specific elements of the water budget and also expressed support for accounting for climate change in the planning process. As described in Section 2.4 of the GSP, the climate change sensitivity analysis was conducted (per DWR guidance) for 2070 conditions, versus the GSP planning horizon goal of 2040. The results of the climate change sensitivity analysis were used to better understand expected climate change trends and to inform planning. However, the Projected Conditions 2040 baseline was deemed most appropriate for use in analyzing the GSP implementation time period.

In addition to figures already in the GSP that show the results of the climate change water budget, several tables have been added to Section 2.4 in a format similar to the presentation of other water budget results. These tables provide additional detail on how climate change may affect elements of the water budget.

SUSTAINABILITY GOAL

One commenter suggested that degradation of groundwater quality specifically be called out in the text of the sustainability goal and that stakeholder feedback and vision be integrated into an expanded sustainability goal. The Merced Subbasin Sustainability Goal was developed with direction from the Coordinating Committee and succinctly states a goal of “sustainable groundwater management on a long-term average basis” while “avoiding undesirable

results”, which are defined more specifically in the subsections of the Sustainable Management Criteria chapter for each of the sustainability indicators, including water quality. The Coordinating Committee chose to develop a sustainability goal that was brief and inclusive, rather than to prioritize specific sustainability indicators. The GSAs reviewed the goal as part of considering the public comments and have decided to keep the goal as written and agreed upon by the Coordinating Committee.

MANAGEMENT AREAS

Some comments expressed a desire to create management areas for various regions of the Subbasin, such as the Stevinson area or area near the Bear Creek confluence with San Joaquin River (due to higher groundwater elevations and/or lack of subsidence concerns) or for drinking water systems and communities relying on private wells (e.g. more protective thresholds due to potential community vulnerability).

The GSAs have considered management areas and have concluded that management areas *as defined by SGMA* are not needed in the Merced Subbasin at this time. A management area is defined in SGMA 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*” [CCR Title 23, Division 2, §351(r)]. The GSAs recognize that the implementation of management actions for the basin may entail identifying different regions with different implementation requirements, but do not believe that formal management areas, as defined by SGMA, with different sustainable management criteria and additional reporting requirements are needed at this time. The GSAs can consider establishing management areas in the future if during the course of GSP implementation it becomes apparent that some areas require a significantly different management approach.

GROUNDWATER LEVEL SUSTAINABLE MANAGEMENT CRITERIA

Comments on the sustainable management criteria for groundwater levels raised several concerns which are addressed in the paragraphs below.

First, several comments assert that the existing groundwater level minimum thresholds are not adequately protective of drinking water for disadvantaged communities and that there was inadequate consideration of all beneficial uses (such as small community water systems serving DACs or GDEs). Additionally, it was suggested that a single well going dry should be considered significant and unreasonable.

Under the proposed GSP, the basin will be managed to a measurable objective which is based on the groundwater levels needed to achieve the long-term sustainability goal. The minimum threshold is used to define undesirable results and is also the threshold at which state intervention may be triggered if the basin is unable to correct the issue causing undesirable results. The GSAs intend to manage the Subbasin to the measurable objective by monitoring conditions and taking actions if progress toward the measurable objectives is not occurring.

In setting sustainable management criteria for water levels, the GSAs sought to be protective of the most sensitive beneficial users. Because domestic wells are often more shallow than agricultural, industrial, or municipal wells, domestic well users were considered the beneficial use most sensitive to changes in groundwater levels caused by pumping. The minimum threshold for groundwater levels was based on shallowest domestic well depths.

Comments from Self-Help Enterprises and Leadership Counsel incorrectly assert that nearly one-third of all domestic wells in the subbasin were not considered in the establishment of a minimum threshold for chronic lowering of groundwater levels. This appears to be a misinterpretation of the methodology used to set the minimum threshold. The

GSA's intend for the sustainable management criteria for groundwater levels to be protective of all beneficial users in the basin. The first step in setting sustainable management criteria for groundwater levels was to establish a representative well network based on existing wells in the basin that meet the SGMA-defined requirements to be used for monitoring wells (CASGEM status, screening information, etc.). As noted in comments, the well density of the groundwater level monitoring network is within DWR's recommended range and could be improved. The GSA's share a desire to increase basin monitoring (see additional discussion of Monitoring Network in GSP and in master response). The representative network selected for groundwater levels in this GSP is intended to be representative of water level conditions in the basin. The purpose of the monitoring network is not to monitor every unique use or user, but instead to identify a number of representative sites that assist in evaluating the effects and effectiveness of Plan implementation. Therefore, the GSA's do not plan to identify specific users associated with each representative monitoring well, but will continue to work on filling data gaps to make sure the monitoring network achieves its objectives.

Once the representative wells were selected, the elevation of the minimum threshold was determined at each well based on the shallowest depth of nearby domestic wells (nearby defined as a two-mile radius). This two-mile radius was used to set the elevation of the minimum threshold at each representative well. It is not an indication of the limits of which wells are "protected" within the basin. The representative wells are intended to represent groundwater level conditions beyond the two-mile radius. The GSA's believe the sustainable management criteria selected for groundwater levels are protective of beneficial uses, including domestic use, throughout the basin based on available information and existing wells, and acknowledge that additional monitoring wells are desirable. The GSA's are pursuing funding to address data gaps and will develop a methodology to establish sustainable management criteria at new monitoring wells that lack historical data.

In response to comments about presentation of domestic well data used for establishing the minimum threshold, the depth and location of individual domestic wells contained within the Merced County well database are confidential and cannot be published in detail in the GSP.

In response to comments about increasing the elevation of the minimum threshold from the bottom of total construction depth to a value related to the screened interval: there is limited information available on the depths of screened intervals and pump placement within wells. While it is recognized that there may be impacts on pumping if groundwater levels were to approach the bottom of the shallowest well, the impacts are not expected to be significant and unreasonable. Using the constructed depth of the shallowest domestic well for this analysis is considered the best source of data for setting the minimum threshold.

Commenters suggested that any well going dry should be considered an undesirable result. Other comments suggested that the sustainable management criteria for water level should not exclude dry and critically dry years in its definition of undesirable results. DWR guidance states:

"Undesirable results are one or more of the following effects: Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods...."^[1]

^[1] *Best Management Practices for the Sustainable Management of Groundwater, DWR, 2017, page 4.*

The GSAs do not consider a single well going dry an undesirable result that should trigger state intervention in the subbasin. A domestic well going dry would trigger further investigation and efforts to provide drinking water. The GSAs are open to developing a mitigation program for domestic wells that go dry due to lowering groundwater levels during implementation. The GSP states that the GSAs will evaluate development of a mitigation program within the first five years of implementation.

Some commenters questioned the definition of undesirable result requiring a hydrological condition of two consecutive wet, above normal, or below normal years. DWR's guidance states that overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels. Extended dry periods are not reflective of long term average basin conditions and thus the water year type condition was included in the definition of undesirable result. The GSAs intend to manage the Subbasin to the measurable objective by monitoring conditions and taking actions if progress toward the measurable objectives is not occurring. The GSAs reviewed the definition of undesirable result and, based on the State guidance, no changes were made to the definition of undesirable results.

Some commenters questioned whether the sustainable management criteria were protective of environmental beneficial uses. The GSAs intend the measurable objective and minimum threshold to be protective of all beneficial uses, including environmental uses. Areas deemed likely groundwater dependent ecosystems (GDEs) in the basin are in areas of relatively high groundwater levels. More information is needed to develop a comprehensive understanding of the relationship between groundwater levels, deep aquifer pumping, and GDEs in the Subbasin (see more explanation in master response for Groundwater Dependent Ecosystems).

GROUNDWATER STORAGE SUSTAINABLE MANAGEMENT CRITERIA

Comments were received about the lack of a sustainable management criteria for groundwater storage. The GSAs maintain that due to the volume of water available in storage and the relatively small changes in storage under historical pumping in comparison to the total stored volume, there are no significant and unreasonable effects due to reduced groundwater storage. There are other basins where groundwater storage is a concern separate and distinct from groundwater level. For example, this would include shallow basins where groundwater wells are typically screened to the bottom of the aquifer. In such shallow basins, managing for storage is important as extraction facilities are sensitive to the presence of water, not the depth of water.

This is not the case for the Merced Subbasin. The significant and unreasonable effects in the Merced Subbasin have been related to changes in groundwater level. Concerns about *accessing* groundwater are most appropriately addressed by the groundwater level sustainability indicator.

Further, minimum thresholds and measurable objectives for groundwater storage would need to be measured by groundwater levels as a proxy and would not change the GSP approach because ability to access groundwater and meeting measurable objectives for groundwater levels will still drive basin management. For these reasons, the GSAs find that there is not a need to set separate sustainable management criteria for the groundwater storage sustainability indicator.

GROUNDWATER QUALITY SUSTAINABLE MANAGEMENT CRITERIA

Comments asserted that the existing sustainable management criteria do not adequately protect drinking water quality, additional minimum thresholds should be established for constituents in addition to salinity, and that there are not enough representative or general water quality monitoring wells.

Salinity was selected by the GSAs based on stakeholder input and the recommendation of the Merced County Division of Environmental Health as the only constituent for which to develop a minimum threshold in the GSP because the causal nexus between salinity concentrations and groundwater management activities has been established. Relatively high salinity groundwater in the basin has been shown to migrate due to groundwater extraction activities. Groundwater management is the only mechanism available to GSAs to implement SGMA, including water quality. Establishing minimum thresholds for constituents that cannot be managed by changing pumping or recharge was deemed inappropriate by the GSAs.

This does not mean that there are not important water quality concerns for the Subbasin. The GSAs recognize importance of protecting drinking water quality. The GSAs also recognize that water quality in the Merced Subbasin is being addressed through various water quality programs (e.g., CV-SALTS and ILRP) and agencies (e.g., RWQCB, EPA) that have the authority and responsibility to address them. The GSAs desire to coordinate with these agencies and their ongoing efforts to avoid duplication of efforts and efficiently use limited resources. The GSAs will abide by any future local restrictions that may be implemented by the agencies or coalitions managing these programs.

The monitoring of water quality constituents is included in ongoing monitoring efforts listed below and will be summarized in future GSP updates. The GSAs have laid out several activities that will be used to coordinate on water quality, including:

- Monthly review of data submitted to the Department of Pesticide Regulation (DPR), Division of Drinking Water (DDW), Department of Toxic Substances Control (EnviroStor), and GeoTracker as part of the Groundwater Ambient Monitoring and Assessment (GAMA) database.
- Quarterly check-ins with existing monitoring programs, such as CV-SALTS and ESJWQC GQTM.
- Annual review of annual monitoring reports prepared by other programs (such as CV-SALTS and ILRP)
- GSAs will invite representative(s) from the Regional Water Quality Control Board, Merced County Division of Environmental Health, and ESJWQC to attend an annual meeting of the GSAs to discuss constituent trends and concerns in the Subbasin in relation to groundwater pumping.
- GSAs will consider potential beneficial and adverse effects on groundwater quality in siting groundwater recharge projects and other management actions.

The purpose of these reviews will be to monitor and summarize the status of constituent concentrations throughout the Subbasin with respect to typical indicators such as applicable MCLs or SMCLs. The Merced Subbasin GSP Annual Report and 5-Year Update will include a summary of the coordination and associated analyses of conditions. The GSP 5-year updates can include evaluation of whether minimum thresholds for additional constituents are needed.

Some comments specifically requested additional monitoring in the communities of Planada, El Nido, and Le Grand. Planada and Le Grand are served by Community Services Districts (CSDs) that conduct regular monitoring of their wells. In fact, when comparing existing monitoring throughout the Merced Groundwater Subbasin, there is disproportionate representation in the DAC areas compared to the surrounding “White” areas. Increased monitoring within the “White” areas could provide a larger benefit to DACs in forecasting water quality trends than installing additional wells directly in a DAC area. This will be evaluated as part of the Data Gap Plan that will be developed in the first year of GSP implementation.

The Planada and Le Grand CSDs conduct routine testing of their groundwater wells as required by state and federal regulations. The 2018 Consumer Confidence Report for the Planada Community Services District indicated the water met state and federal standards for drinking water.

One comment suggested setting a higher salinity minimum threshold for agricultural wells, particularly in the El Nido area where some shallow groundwater exceeds 1,000 mg/l TDS. The GSAs have set minimum thresholds at representative wells in the basin, all of which at this time are domestic wells. Therefore, the GSAs did not make changes to the sustainable management criteria for water quality, but will re-assess sustainable management criteria for water quality in future GSP updates.

The GSAs have identified data gaps in water quality monitoring, specifically with relatively few monitoring wells closer to the San Joaquin River and Mariposa County, as well as many wells used for monitoring not having construction information (for distinguishing below or above the Corcoran Clay).

The plan to fill this data gap includes coordination with Eastern San Joaquin Water Quality Coalition on existing plans to add new wells to the Groundwater Quality Trend Monitoring Plan, as well as a separate effort to obtain additional construction information for at least 20 public water system wells. In addition to the coordination efforts outlined above, the GSAs intend to fill all data gaps and will start by requesting funding to address water quality data gaps through Prop 68.

The GSAs understand that a DAC water needs assessment is being conducted under the IRWM program. The San Joaquin River Funding Area Disadvantaged Community Needs Assessment Report is in draft and the GSAs will incorporate information from the report in their GSP update when it is publicly available.

The GSP's Plan Implementation chapter has been revised to state that projects considered for implementation will be evaluated for potential water quality impacts during the selection and implementation process.

SUBSIDENCE SUSTAINABLE MANAGEMENT CRITERIA

Comments expressed concern that historical and ongoing subsidence is significant and there have been adverse impacts on infrastructure. Some comments called for defining a measurable objective of zero subsidence, while others called for reducing pumping below the Corcoran Clay or otherwise implementing a more aggressive approach to reducing land subsidence.

The GSAs recognize that subsidence is an area of concern. However, subsidence is a gradual process that takes time to develop and time to halt. Even despite wetter conditions, subsidence in the Merced Subbasin between December 2017 and December 2018 was approximately -0.17 ft/yr and -0.32 ft/yr, depending on the location. Due to the thickness and low permeability of clayey units responsible for subsidence, subsidence may take years or decades to be fully realized after groundwater levels decline. As a result, some level of future subsidence, likely at rates similar to those currently experienced, is likely to be underway already and will not be able to be prevented.

Further, the GSAs recognize the importance of managing pumping volumes below the Corcoran Clay, as this is the depth range believed to be causing subsidence. The Projects and Management Actions section includes a project designed to study the potential impacts of moving pumping from below the Corcoran Clay to above the Corcoran Clay. This analysis is intended to facilitate moving pumping within the requirements of Merced County's Groundwater Ordinance. The Projects and Management Actions section also discusses installation of ground surface monitoring stations to better characterize the depth at which subsidence is occurring and the relationship of subsidence to groundwater pumping activities. The Merced GSP will continue to coordinate efforts with surrounding subbasins to develop regional or local solutions to subsidence occurring in the Merced, Chowchilla, and Delta-Mendota Subbasins.

The GSAs reviewed the proposed sustainable management criteria for subsidence in response to these comments and are not revising them at this time. The GSAs will reevaluate the sustainable management criteria for subsidence

within the next five years. In the meantime, the GSAs intend to continue coordination with neighboring basins on subsidence. Interferometric Synthetic Aperture Radar (InSAR) data was recently (May 2019) published as part of DWR's SGMA technical assistance program. This satellite data provides high resolution subsidence information for the whole Subbasin. This data will be potentially useful in Annual Reporting in conjunction with existing USBR control points and will be evaluated more thoroughly as part of the GSP 5-year update.

Additionally, one comment requested considering adding El Nido community infrastructure as an example of infrastructure that has the potential to be damaged due to subsidence. This was added to the GSP.

DEPLETIONS OF INTERCONNECTED SURFACE WATERS SUSTAINABLE MANAGEMENT CRITERIA

Commenters requested documenting the methodology used to determine gaining/losing streams in more detail and also stated that the GSP does not go far enough in considering avoiding or minimizing harm to public resources (e.g. where there is a hydrologic connection between groundwater and a navigable surface water body).

The methodology for determining gaining/losing streams is contained within Section 2.1.3.5.2 – Natural Groundwater Recharge and Discharge. It describes how a MercedWRM historical simulation was used to identify median monthly stream gains and losses to designate gaining or losing streams. Additional text has been added to further clarify the methodology.

As described in the GSP and acknowledged in the GSP regulations, there are significant challenges associated with directly measuring streamflow depletions. Additionally, managing depletions is difficult without direct measurements. The MercedWRM is a fully integrated surface and groundwater flow model developed and calibrated specifically for the Subbasin. The MercedWRM is a necessary and valuable tool for quantifying stream depletions. The GSAs have identified information on depletions of interconnected surface waters as a data gap that can be substantially filled by additional depth-discrete groundwater elevation data near selected rivers and streams. Data from these locations will be used to refine the MercedWRM in the future, resulting in improved estimates of depletions.

USING GROUNDWATER LEVELS AS PROXY FOR DEPLETION OF INTERCONNECTED SURFACE WATERS

Some commenters expressed concern that the justification for using groundwater levels as a proxy for depletion of interconnected surface waters was inadequate. The GSP section on the justification has been updated with additional results from the analysis used to support the justification. Additional information has been added on the level of data certainties related to smaller creeks which are primarily used for conveyance of irrigation water. There are significant challenges associated with directly measuring streamflow depletions. Based on the best information currently available through the use of the MercedWRM, the GSAs have determined that depletions occurring under groundwater level conditions that would cause undesirable results for groundwater levels would not be considered undesirable. Thus, the existing minimum thresholds for groundwater levels can be considered a protective proxy for depletions of interconnected surface waters. This represents the best available information. The GSAs have identified information on depletions of interconnected surface waters as a data gap that can be substantially filled by additional depth-discrete groundwater elevation data near selected rivers and streams.

MONITORING NETWORKS

Several comments raised the issue that there are not enough monitoring locations for any of the sustainability indicators, particularly near vulnerable communities and other groundwater stakeholders. Additional comments suggested considering identification of beneficial users that are associated with each of the existing monitoring wells.

The GSAs agree that the basin would benefit from additional monitoring data. The GSP identifies key data gaps and the GSAs are seeking funding to begin addressing them.

In Chapter 4 (Monitoring Networks), the subsections for each sustainability indicator contain information on Data Gaps and Plan to Fill Data Gaps. These gaps and plans have been summarized below:

- Groundwater Levels
 - Three specific data gaps identified from previous CASGEM planning efforts, plus acknowledgement of general data gap along western edge of Subbasin.
 - The plan to fill data gaps includes adding representative wells in the Above & Below Corcoran Clay Principal Aquifers in the southwesterly portion of the Subbasin, as well as along the northwestern portion of the Subbasin.
- Groundwater Quality
 - Two significant data gaps identified for (1) near San Joaquin River and close to Mariposa County and (2) limited or no well construction information.
 - The plan to fill data gaps includes coordinating with ESJWQC on existing specific plans to add additional wells and obtaining construction information for other wells.
- Subsidence
 - Data gaps include understanding the depth at which subsidence is occurring which will help characterize the relationship between subsidence and groundwater pumping activities.
 - The GSAs will develop a plan to fill identified data gaps through interbasin coordination on installation of extensometers.

Regarding identification of beneficial users per monitoring location: the intent of the SGMA-compliant monitoring network is to demonstrate short-term, seasonal, and long-term trends of the Subbasin as a whole. The intent of the monitoring network is not to monitor every unique use or user, but instead to select a number of representative sites that evaluate the effects and effectiveness of Plan implementation. Therefore, the GSAs do not plan to identify specific users associated with each representative monitoring well, and will continue to work on filling data gaps to make sure the monitoring network achieves its objectives.

ALLOCATION FRAMEWORK

The allocation framework refers to the way in which the sustainable yield of the basin will be shared among users. The GSAs have agreed on some elements of a framework and are continuing to discuss other important aspects of the allocation and how it would be implemented. The allocation framework has been a topic of discussion at the monthly Coordinating Committee and Stakeholder Committee meetings since October 2018. This is one of the most important and challenging aspects of the GSP and it is taking time to develop and reach agreement.

There were numerous comments received on the allocation framework. Comments included the need to consider allocation to non-irrigated lands, fairness of allocation, economics, adaptive management of the allocation in response to undesirable results and droughts, and incentives. There were comments highlighting the need to consider all beneficial users in the basin including managed habitats and environmental uses, domestic users in disadvantaged areas, de minimus users, and range lands. Comments expressed a desire for more information and the opportunity to engage and comment.

The GSP states that the GSAs intend to allocate water to each GSA but have not yet reached agreement on allocations or how they will be implemented. The GSP includes estimates of basin-wide sustainable yield and developed supply for illustrative purposes. The GSP also identifies the following steps in the first five years of the GSP to develop 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
- Implementation schedule and timing
- Conducting outreach and communications
- Establishing sustainable allocation trading and crediting rules

The GSP reflects the current state of understanding and agreement between the GSAs. This topic is the subject of ongoing discussions among the GSAs through the Coordinating Committee. The GSAs intend to continue discussion and reach agreement on an allocation framework for the Basin with public input and transparency.

DEMAND MANAGEMENT

Because the basin is in overdraft, there is a recognition that pumping in the basin must be reduced. The GSP includes a specific management action that the Merced Subbasin GSA is planning to implement to reduce pumping within its area. Many of the comments received on demand management were about managing pumping reductions in general and not necessarily specific to Merced's proposed action. Comments included recommendations on timing of implementation – including multiple commenters recommending using the full 20 year implementation period and a commenter recommending implementation be accelerated in the first 10 years. Some comments suggested considerations regarding fee and demand reductions excluding some users (e.g. DAC and SDAC community water systems, de minimus users, etc.) There were comments seeking information about how demand reduction would be implemented during droughts. There were comments encouraging public participation in demand management decisions.

Demand reduction and the allocation framework are related and both are areas of active development for the GSPs. The specifics of demand management are the subject of ongoing discussions by the Coordinating Committee. The information in the GSP reflects the current state of information about the GSAs' plans. The GSAs intend to continue discussion and refinement of each GSA's program with public input and transparency.

NEW PROJECT RECOMMENDATIONS

Several comments recommended new projects for consideration. The projects on the existing list in the GSP were identified through a several month process involving Stakeholder and Coordinating Committees and the general public. This included a public project solicitation. A template for project submission was posted online for the public in September 2018 and provided to the Stakeholder and Coordinating Committees. This project submission template was also advertised during several committee meetings and remains online for public download on the Merced SGMA website. Project information was received from committee members and interested members of the public. This list was discussed and presented during the January and February 2019 committee meetings. Input received from committee members and members of the public was integrated and used to refine the project list into a shortlist of projects for inclusion in the GSP. This shortlist was created based on priorities identified by the public and committee members (see Section 6.3 of the GSP for a detailed list).

Implementation of projects will be an ongoing and live aspect of the GSP and the GSAs are committed to working with both urban and agricultural communities to pursue various tools to achieve sustainability through projects and management actions. The recommended new projects have been documented and will be taken into future

consideration during the implementation phase. The GSAs will also continue to work with interested parties and agencies to pursue funding for projects.

PROJECT-SPECIFIC RECOMMENDATIONS

Comments were received on a several specific projects outlined in Chapter 6 of the GSP (Projects and Management Actions). The comments and response to comments are summarized in the table below. In general, the shortlisted projects (coming out of the project prioritization process described in the GSP) are still in the planning phase, with much more work needed to better define them and evaluate potential benefits, costs, and impacts.

Comment	Response
USFWS: Projects 5 and 9 will contribute to increase in groundwater withdrawal at Merced NWR and loss of wetlands in Central Valley	The GSP does not relieve any agency of its commitments. MID responded to USFWS' comment letter specifically regarding these projects with a written response dated 9/4/2019.
Sandy Mush Mutual Water Co: El Nido Improvement Canal project should be reinstated; Merced Subbasin GSA should cost-share with MID on improvements to increase peak capacity downstream of Mariposa Creek	While MID is a member of MIUGSA, MID has discretion over funding and projects allocated for its facilities. GSAs will re-evaluate this project during GSP implementation
Audubon: Evaluate Project 1: Planada Groundwater Recharge Basin Pilot Project, Project 4: Merquin County Water District Recharge Basin, and Project 10: Vander Woude Dairy Offstream Temporary Storage for "water for habitat" benefits	See master response for "Project Prioritization" below.
Self-Help Enterprises: Comments and recommendations pertaining to water quality for recharge and storage projects 4 & 10	These projects are in the planning phase. The GSP Plan Implementation chapter has been updated to state that projects selected for implementation will be evaluated for water quality impacts. CEQA compliance for most projects would also include analysis of water quality and water supply benefits/impacts
Self-Help Enterprises: Confirm that wells associated with Planada GW Recharge Basin Pilot Project and El Nido GW Monitoring Well will be established as representative monitoring wells for GWL and GWQ MTs	This is the intent of the GSAs and part of why funding was sought for these wells. As additional wells are added to the monitoring network, they will be considered for inclusion as representative monitoring wells based on their ability to contribute to characterization and management of groundwater conditions in the Subbasin. The GSAs will be developing a methodology for establishing minimum thresholds at new wells which lack pre-2015 historical data.

PROJECT PRIORITIZATION

One commenter suggested expanding criteria for "project addresses and or prioritizes water for habitat" to read "project addresses and or prioritizes water for habitat and or creates new or sustains existing managed habitat benefits". The existing prioritization criteria was intended to encompass and is consistent with the suggested revision of prioritization description. This change to the text would not alter the results of current or future project prioritization.

A second commenter requested explaining how groundwater recharge projects (#1, #4, and #10) could benefit GDEs and how they will be evaluated. There is limited information at this time to be able to evaluate how those projects could

benefit GDEs. As described in the GSP and in earlier comment responses regarding GDEs and depletions of interconnected surface waters, there is uncertainty about identifying and confirming GDEs in the Subbasin. Shallow groundwater monitoring, particularly in the El Nido area and near the San Joaquin River, is identified as a critical data gap in the GSP. It is expected that as more information becomes available and depletions of interconnected surface waters are more understood, then GDEs will be more thoroughly evaluated as part of project prioritization and evaluation. Further, the Projects and Management Actions include evaluation of the GDE Pulse application as a method of assessing GDE or NCCAG health. Future GSP updates may consider this tool or other available information to evaluate project benefits.

PLAN IMPLEMENTATION

Leadership Counsel and Self-Help Enterprises provided comments on the Plan Implementation section of the GSP. The comments requested that the GSP consider using adaptive management to reconsider GSP elements as-needed and not necessarily be tied to the five-year update as required by DWR. The GSAs plan to utilize adaptive management. A full GSP update is a significant undertaking and not something that the GSAs plan to conduct on a rolling or as-needed basis. However, the GSP does envision that water levels, water quality, and subsidence will be monitored and evaluated regularly. The values reported by monitoring do not need to reach minimum thresholds in order to for the GSAs to act. The GSAs will be actively managing to reach the measurable objectives that have been set based on sustainable conditions and drinking water standards. Additionally, the GSAs will have outreach activities and meetings during the implementation phase at which there will be opportunities for seeking and incorporating feedback from the public on an ongoing basis.

Attachments:

1. Comment letters received *Note - #1 is included separately on MercedSGMA.org and will be appended in final version of Appendix O.*
2. Meeting Minutes from September 18, 2019 joint board meeting of the three GSA Boards

MEETING NOTES

Joint Meeting of the Boards of Directors of the Merced Groundwater Subbasin Groundwater Sustainability Agencies:

Merced Subbasin Groundwater Sustainability Agency (MSGSA), Merced Irrigation-Urban Groundwater Sustainability Agency (MIUGSA), and Turner Island Water District Groundwater Sustainability Agency #1 (TIWD-1)

DATE/TIME: September 18, 2019 at 6:00 PM

LOCATION: Sam Pipes Room, Merced Civic Center, 678 West 18th Street Merced, CA 95340

GSA Board Members In Attendance:

Board Members Attending	GSA
Hicham Eltal	Merced Irrigation-Urban GSA
Justin Vinson	Merced Irrigation-Urban GSA
Daniel Chavez	Merced Irrigation-Urban GSA
Leah Brown (as alternate for Ken Elwin)	Merced Irrigation-Urban GSA
Brenda Wey	Merced Irrigation-Urban GSA
Carlos Gudino	Merced Irrigation-Urban GSA
Cynthia Benavidez	Merced Irrigation-Urban GSA
Dave Nervino (as alternate for Bob Kelley)	Merced Subbasin GSA
Mike Gallo	Merced Subbasin GSA
Nic Marchini	Merced Subbasin GSA
George Park	Merced Subbasin GSA
Kole Upton	Merced Subbasin GSA
Lloyd Pareira	Merced Subbasin GSA
Lawrence S. Skinner	Turner Island Water District GSA #1
Donald C. Skinner	Turner Island Water District GSA #1
Thomas C. Skinner	Turner Island Water District GSA #1

Meeting Notes

1. Call to order
 - a. Alyson Watson (Woodard & Curran) invited the chair of each board to call their meeting to order.
 - b. Each board member introduced themselves.
 - c. Each chair confirmed they had a quorum.
 - d. Alyson (W&C) reviewed the agenda.

2. Report Items

a. Overview of GSP Development to Date

- i. Alyson Watson (W&C) reviewed GSP development to date. This included a brief review of the 6 sustainability indicators. She described two objectives: bringing the basin into balance and doing this in a way that prevent Undesirable Results.
- ii. She also reviewed the overall GSP Development timeline and highlighted the technical foundation items including the groundwater model, hydrogeologic analysis, historical current and projected water budget, and the data management system (creating a database for existing data and to store and manage data collected in the future). She explained the process of understanding undesirable results and establishing sustainable management criteria (e.g. establishing a minimum threshold to prevent domestic wells going dry), as well as establishing a monitoring network. Projects and Management Actions are used to get us to where we need to go, and we are looking into how to fund these actions.
- iii. Question: Is this information (what is presented at the meeting) available online? A: Yes. All information including the written comments received on the draft GSP are available online at www.mercedsgma.org

b. Public Engagement Process

- i. Charles Gardiner (Catalyst) reviewed the Public Engagement Process. Outreach was guided by a Stakeholder Engagement Strategy developed early in the GSP process. Public workshops addressed elements of the plan and were conducted around the basin in different locations. Public meetings included 19 Coordinating Committee meetings, 15 Stakeholder Committee meetings, and 5 Public Workshops coordinated with Self-Help Enterprises (SHE) and Leadership Counsel. Spanish translation was made available for the public workshops and for tonight's meeting in coordination with SHE.
- ii. Charles explained that the regulatory timeline drives the plan. The plan is due by 2020, the deadline for implementation is 2040. This GSP should be considered a first effort at what is needed for sustainable groundwater management in this basin and there will be regular updates. All of this is subject to update as we understand how the basin responds to actions that are taken.
- iii. Charles explained the purpose of the Joint Board Meeting, and that the meeting provides the opportunity for the public to provide additional, supplemental comments. The consultant team will provide an overview of the comments received on major topics, provide an opportunity for additional public comments on the GSP, and provide an opportunity for a joint Board discussion and input to GSA staff who will guide the consultant team in revising the GSP for adoption. The meeting also includes a status update on the Prop 1 funded SDAC projects and consideration of authorization of funds for preparation of a Prop 68 grant application on behalf of the basin.

c. Summary of Public Comments Received (Opportunity for public comment following each topic)

- i. Samantha Salvia (Woodard & Curran) provided a summary of the public comment process. She noted that SGMA does not require that GSAs hold a public comment period on the draft GSP, in part because DWR will hold a 60-day public comment period during their review process. However, the coordinating and stakeholder committees felt this was important and so time was built into the schedule for a 30-day review. She described how the public draft GSA was made available. She reviewed the list of NGOs, water agencies, State and Federal Agencies, and other entities who provided public comment to the draft GSP. All comments are available on the mercedsgma.org website. All comments were provided to each Board member in advance of tonight's meeting. She explained the

approach to responding to comments will involve placing the comments into 3 groups:: minor corrections/clarifications will be addressed directly by edits within the GSP), substantive comments will be responded to with a master responses and edits to GSP under direction from GSAs, and comments on future considerations for GSP implementation will be noted for GSA Board consideration and future Coordinating Committee meeting discussions).

- ii. Comments were received on many parts of GSP. Given time constraints, for tonight's meeting, discussion will be focused on the following seven areas of comments: water level, subsidence, demand management, water allocation, water quality, groundwater dependent ecosystems, and stakeholder outreach. Samantha described the meeting format for the review of public comments: she will describe the relevant GSP section, background on the approach taken in the GSP, who commented, key concerns raised, and the potential response. Readers are encouraged to see presentation slides available on the mercedsgma.org website for full summary details (link to Meetings page: <http://www.mercedsgma.org/meetings>). After each comment the public will be invited to comment, with a limit of 3 minutes per person, per topic. This will be followed by an opportunity for Board discussion and/or comment.
 - iii. Water Level: Samantha (W&C) explained the approach in the GSP. The GSP took the approach of setting sustainable management criteria to be protective of the most sensitive beneficial use – shallow domestic wells. The GSAs will manage the basin to measurable objectives. The minimum thresholds are not the threshold for action, they are used to define undesirable conditions and they are the trigger for state intervention. Samantha reported that the GSP team has heard both from stakeholders and the coordinating committee a strong desire to manage groundwater locally and avoid state intervention. The representative monitoring network was developed based on previous CASGEM (California Statewide Groundwater Elevation Monitoring) monitoring. (Since 2009, the CASGEM Program has tracked seasonal and long-term groundwater elevation trends in groundwater basins statewide.) Included in the implementation plan is action to develop a Data Gaps Plan in first year. Data gaps are largely within southwestern portion of basin and to lesser degree in Northeastern area.
- Written comments were received from environmental organizations and organizations representing disadvantaged areas.

1. Public Comments:

- a. **Keith Ensminger (Merced resident, small business owner):** Keith is glad we have finally come to the point where we are starting to regulate our aquifers. We are the last western state to do this. Keith attended a farm show and folks there were surprised that it took until now for CA to regulate groundwater. Keith has been involved in the technical committee late in the process, used to be a farmer, had teaching as second career, translation now as the third (he and his wife have a local translation business). Explained that surface water (SW) has been a strong influence on groundwater (GW), a strong approach with will need to be taken with SW/GW interaction. The folks using irrigation systems with SW should use the SW first before pumping the GW. Keith also stated that Prop 68 funding should be used to bring SW into areas that are fallow or would have to go out of operation. He has talked to a few folks in the irrigation districts but there needs to be money to do this activity. Keith thinks it's important that those in the irrigation districts should use all of the SW

rights first before using GW. He stated all the pumps today need to be regulated whether that's through GSP, meters, or other means.

- b. **Nataly Garcia (Leadership Counsel):** Nataly asked that the groundwater level comments provided by Leadership Counsel in their letter be considered, as they do not see this on the summary. They want to make sure that this has been documented and considered.

2. Board Comments:

- a. **Dave Nervino (MSGSA):** In response to the comments, Dave stated that with the Minimum Thresholds (MTs) there was a comment that the MTs should be based on the best water quality and not just the level. Dave agrees with this comment and commented: what's the point if the water quality is not good.
- iv. **Subsidence:** Samantha (W&C) explained the approach for subsidence. The measurable objectives for subsidence were based on recent measured subsidence levels. The coordinating committee considered using groundwater level as a proxy and decided it was most appropriate to set targets based on direct measurements of subsidence. She reiterated that the minimum thresholds are not where the basin wants to be. The GSP acknowledges that there has been subsidence and some loss of flood capacity, but the CC did not consider those significant and unreasonable. The objectives were set with the objectives of balancing the desire to reduce subsidence, avoid state intervention, and focus on ways to reduce stress on the deep aquifer while allowing some economic activity and beneficial use to continue.
- v. Samantha identified who submitted written comments and summarized them: concerns raised on whether adequate protection is provided, acknowledgement of undesirable results related to subsidence, and request for immediate reduction in sub-Corcoran pumping. A potential response including clarifying and adding information for the El Nido area and continued coordination with neighboring basins was described.

1. Public Comments:

- a. **Keith Ensminger (Merced resident, small business owner):** Keith stated the key issue to discuss is the water trading. There are essentially three key aquifers in the basin, and sometimes these flow in different directions. First, our water should not be traded outside of this district at all. When it comes to trading, this should be done and limited to trade amongst adjacent properties as much as possible. It does not make sense for folks in Stevinson to be trading with folks in Planada because they are in a different environment. This relates to subsidence. This could create problems for the irrigation districts, the canals and different entities. Mr. Ensminger stated that water trading is an important part of managing the aquifers

2. Board Comments:

- a. **Kole Upton (MSGSA):** SW is the key to GW sustainability. There needs to be trade, but like Keith said, this needs to be done with one land next to another.
- b. **Dave Nervino (MSGSA):** Stated we should not waste time trading outside the basin or discussing this.

vi. **Demand Management:** Samantha explained that because the basin is in overdraft, there is a recognition that pumping in the basin must be reduced. Demand management is discussed in the Projects and Management Actions section of the GSP both generally and as a specific action proposed by Merced Subbasin GSA. Many of the comments were about managing pumping reductions in general and not necessarily specific to Merced's proposed action. Comments were provided by water districts, NGOs, individuals, and businesses and the CA Poultry Federation. Conflicting comments on timing of implementation were submitted. Concerns also included encouraging public participation in decisions potentially excluding some users from reductions. This topic is still a work in progress with GSAs, more detail and refinement may be added prior to adoption as information becomes available.

1. Question from SHE: Is this (the potential response) what is going to be put forward? Answer (W&C): The potential response is a starting point. The consultant team will be working with the Board and the GSA staff on in developing the responses to comments.

2. Public Comments:

a. **David Hobbs (Merquin County Water District):** Appreciates the work that has gone into creating the GSP. He was surprised that at the first stakeholder meeting residents of areas of subsidence said they recognized they were responsible for the issue. Merquin County Water District is asking for consideration that the resolution be equitable. If the decision upon implementation is that every pumper gets the same reduction, this is not equitable. That is subsidizing sustainability. Merquin is located in the Stevinson area. Stevinson has historically had high GW in part because they are the bathtub of basin and in part because of surface water they import. Merquin brings in over 14,000 AF annually, and asks that when the implementation decisions be made that this be taken into account. They also want to look into enacting management zones and not have a one-size-fits-all approach to the basin. There is a joke in Stevinson that there are some parts of year that you can't dig a posthole. It is not equitable or fair to cut pumping back the same for everyone in the basin as someone who has overpumped.

b. **Keith Ensminger (Merced resident, small business owner):** Keith stated that we are overdrafting over 175K AF/yr and we need to deal with this. As far as land use goes, we need to cut back on the amount of farm land that's there and one way to do that is to fallow land, and another way to do that is to pay farmers to fallow land from time to time and make this part of their rotational schedule with their crops. Perhaps with Prop 68 and other legal structures we have we can support this and also help the irrigation districts to run water through their canals on those fallow lands in order to recharge those basins. There are differences in places like Stevinson and Planada. Pasture land on the east side of the Santa Fe railroad should probably remain pasture land and once orchards that are out there have reached end of useful life, they should go back to pasture land. The key is to create a water storage program that helps everyone.

3. Board Comments:

- a. **George Park (MSGSA):** General discussions have been in the MSGSA that we would like to see some form of demand management and that this will be the subject of some of the next meetings.
 - b. **Dave Nervino (MSGSA):** In implementing demand management, we need to have an adequate time considered how to implement infrastructure needed for this.
- vii. **Allocation Framework:** Samantha (W&C) explained that the allocation framework refers to the way that the GSAs are going to determine how much water to allocate throughout the basin. The coordinating and stakeholder committees have been discussing this topic since last October. This is one of the most challenging part of the GSP and it is understandable that it is taking time to develop. The draft document includes estimates of sustainable yield and developed supply for illustrative purposes. Comments received included the need to consider non-irrigated lands, economics, equity, and incentives. There was a comment to include habitats in the framework and a request to have more information in the GSP and opportunity to comment. More specifics may be added to the GSP prior to adoption. It is likely the full details of the allocation will be finalized after the GSP is submitted to DWR.
1. **Public Comments:**
 - a. **Eric Swenson (Shannon Pump, on behalf of Merquin Water District):** Requested and strongly encouraged that the MSGSA area establish a minimum of 3 management zones for the 2020-2025 update. Believes that there are risks faced by DACs, natural habitats, and others. The first zone could be a subsidence zone centered around El Nido. The second zone, which would be east of subsidence zone, is significantly different than the other two zones. Natural GW recharge rates appear to be significantly different in this area. There is greater potential for domestic and small water wells to go dry, and not adequate water for nut production. The third zone has different habitats with significantly greater recharge occurring in this area. He would like to also request that GW recharge from canals be included in the model developed by W&C. Mr. Swenson stated that he has maps of the three zones that can and has provided those to officials in the past.
 2. **Board Comments:**
 - a. **Nic Marchini (MSGSA):** Agrees with comments from Eric. The zones will inevitably and likely be more than 3, but generally agrees with the comments.
 - b. **Dave Nervino (MSGSA):** Stated we could also consider that these are priority zones and could move resources from wet areas to where this they are needed.
- viii. **Water Quality:** Samantha (W&C) provided a summary of the GSP approach, reiterating that drinking water is an important issue and has been the subject of discussions during Stakeholder and Coordinating Committee meetings. The GSP developed sustainable management criteria for water quality constituents where there is a clear causal nexus between groundwater activities and water quality - salinity. The GSAs sought input from the Merced County Environmental Health Division and set management criteria for salinity based on drinking water standards. The other key part of the GSP approach is coordination with agencies already tasked with monitoring water quality. Board members strongly agreed that the GSAs should avoid duplicating efforts with programs already underway by agencies tasked with protecting drinking water quality. Comments were

received from SHE, LC, and environmental organizations with main concerns including: MTs do not adequately address drinking water quality, need more regulation and monitoring of wider range of constituents, and not enough monitoring wells. The potential response includes clarifying and better defining coordination with other monitoring programs, ensuring GSP related projects evaluate water quality impacts, and incorporating the under development IRWM DAC Water Needs Assessment when available.

1. Public Comments:

- a. **Nataly Garcia (LC):** Believes the responses do not address what Leadership Counsel provided in the comment letters.
- b. **Maria Herrera (SHE and SC member):** Wants to encourage the board to consider the comments they have submitted because the current plan does not address drinking water for communities. She is concerned that there is not enough content connected to constituents with the MTs section and is concerned that the plan is at risk of not being deemed adequate by DWR. She also reminded Board members that SGMA requires input and participation from stakeholders in this region. States that the GSP as written would not respect the human right to drinking water.
- c. **Keith Ensminger (Merced resident, small business owner):** Used to live in Southeastern Montana, where lot of wells were non-potable. His wells were not potable, and neither were his neighbors' wells. Nearest potable well was 5 miles away. Maybe one way to find a solution is to provide potable water to folks now to ensure that they have what they need if they currently do not have potable water from their wells. This could be a potential solution.

2. Board Comments:

- a. **Kole Upton (MSGSA):** Is also concerned with water quality and testing and thinks we could expand coordination with the existing agencies and make use of the data that is out there.
 - b. **Lloyd Pareira (MSGSA):** We should coordinate with existing agencies.
 - c. **Hicham Eital (MIUGSA):** This is our first cut of the GSP, a lot is not known. His concern is unless you have information that leads the way, effort is made in vain. There are pumpers where there are no monitoring wells. It is difficult to know what the implications will be in making things stricter or not stricter for pumping. He does not disagree with anything that has been said, but states that the Subbasin will need to proceed with caution. All of these things have to be vetted, especially when there is missing data.
- ix. **Groundwater Dependent Ecosystems:** Samantha (W&C) explained that the approach assessed Natural Communities Commonly Associated with Groundwater (NCCAG) dataset against groundwater depth, supplemental water, irrigated fields, losing streams, and vernal pools to identify potential GDEs in subbasin. GDEs were considered as beneficial users of groundwater. She noted that the relationship between groundwater levels and GDEs is not well understood. Most of the areas that were identified as potential GDEs are near the San Joaquin River and in areas with clay layers – how, if at all, deep aquifer pumping affects them is not well understood. All comments received were from environmental organizations. Concerns raised were expanding areas considered GDEs and making the GSP more protective of GDEs. Potential responses include considering

GDE locations in developing plan to fill data gaps for shallow groundwater monitoring and evaluating incorporation of The Nature Conservancy's GDE Pulse Tool into GSP annual report process.

1. **Public Comments:** None.
 2. **Board Comments:** None.
- x. **Stakeholder Outreach:** Samantha (W&C) explained the consulting team believes the approach made good use of time and resources available. Because Charles Gardiner (Catalyst) described the outreach approach in detail earlier in the meeting, she focused on plans for future outreach. The implementation plan describes the current plan for ongoing outreach and involvement. Comments were received from environmental orgs, LC, and SHE. Concerns included inadequate outreach to disadvantaged communities and environmental interests and a lack of balance on SC of all stakeholders especially for environmental representation. Potential response includes adding SC membership and who they represent in GSP and including the Stakeholder Engagement Strategy in appendix, as well as updating the Stakeholder Engagement Strategy for the implementation phase.
1. **Public Comments:**
 - a. **Maria Herrera (SHE and SC member):** Maria thanked the Boards members and said that the letter of support from the GSAs enabled her organization to access state funding to cover translation services at this and other key meetings. It also paid for SHE in translating documents and conducting outreach in the basin. The State funding for their services is coming to an end early next year. She encouraged the boards to consider including funding in their operating budgets for translation services. She also encouraged using consultants with connection to local communities and providing adequate time for comments (30 days was not enough).
 - b. **Nataly Garcia (LC):** Nataly states that it is great that there is a joint meeting, but there should have been a public workshop where the GSP was walked through with the public. This should have taken place prior to this meeting.
 2. **Board Comments:**
 - a. **Dave Nervino (MSGSA):** In getting the public involved, we also have the farm bureaus and other groups who will and have circulated information.
- d. Next Steps in GSP Adoption Process
- i. Alyson Watson (W&C) described the next steps and timeline for review & submission of the GSP to DWR. W&C will be working with GSA staff on revising the GSP in response to comments, including those received this evening. The earliest the GSP can be adopted is late October, because the adoption hearings cannot begin until 90 days after filing a Notice of Intent to adopt (filed in July). Hearings are anticipated to take place Nov./Dec. Submission in January 2020 to DWR.
- e. Update on progress of the Severely Disadvantaged Community grant projects.
- i. Hicham Eltal (MIUGSA) described the funding source for the DAC projects and provided an overview of the locations of the projects (see slides for map of projects). The updates were as follows:

1. Planada Groundwater Recharge Pilot Basin & Monitoring Well: We have secured a parcel of land and are moving forward with experimenting with certain soils in this area. We are honing in on the best soils. The location is not far from Mariposa Creek.
 2. El Nido Groundwater Monitoring Wells: The other project is supposed to have two wells, the first well we are still working on. We are still working with the owner of the land. The other monitoring well likely be at the fire station. The County has given the approval to install the well.
 3. Meadowbrook Intertie Feasibility Study: This project looks into providing a connection to the Franklin-Beechwood area. We are hoping in the next few months to have the results of the study.
 4. Questions from Dave Nervino (MSGSA): How deep are the monitoring wells. Answer (Hicham): each of these are deep wells. They will be multiple completion wells. They will go to almost 600 ft.
3. Action Item
- a. Prop 68 Funding Opportunity – Consider authorization of funding of \$50,000 for consultant support to prepare Prop 68 Grant Application
 - i. Alyson (W&C) explained that the funding used for the SDAC projects and the GSP development were under Proposition 1. There is a new Proposition 68 and the basin is eligible for up to \$500K and should qualify for a DAC waiver meaning no local match. The application is due on November 1, 2019. The Planning Grants Proposal Solicitation Package (PSP) and final guidelines have now been released by DWR. The updated timeline was also provided by DWR. The final review and funding award are anticipated in the March 2020 timeframe.
 - ii. In their last meeting the CC recommended that the Boards authorize up to \$50K for W&C to prepare the application for Prop 68 funding.
 - iii. MSGSA motions and approves of the action.
 - iv. TIWD GSA-1 makes a motion, the motion is seconded, and approved.
 - v. MIUGSA makes a motion, the motion is seconded, and approved.
4. Public Comments
- a. Question from Maria Herrera (SHE and SC member): Has the working group for Prop 68 content started? When are those meetings? Answer (W&C): They are just starting this process. We understand SHE (Maria) has expressed interest in this and she will be included in working group.
 - b. Nataly Garcia (LC): Will the updated GSP also be provided to the public? Answer (Catalyst): Yes, it will go to each GSA board and they will do their own public process. It will also be available on the website.
5. Meeting Adjournment
- a. Meeting is adjourned by the GSA chairs in accordance with their boards' protocols.