

Sierra Valley GSP: Multiple Comment Responses (MCRs) by Category

MCR ID	Response to multiple comments on a similar topic (MCR = Multiple Comment Response)
Groundwater Dependent Ecosystems (GDE)	<p>We provide here a summary of all the main comments received about GDE. Our conclusions regarding GDE (and ISW) relies heavily on groundwater elevation data. We agree that shallow groundwater is a data gap due to the sparse distribution of wells in the shallowest western side of the basin and due to the significant uncertainty on well screening and actual well depth. The groundwater level data used for the GDE analysis is the same groundwater level data used in all other analyses in the GSP and the data is provided in Appendix 3-1. It contains the Representative Monitoring Points (RMPs) and additional data that were not selected for the RMP monitoring network. Section 3.3.1.4 now provides additional detail on the monitoring wells used, their depth (less than 300 feet), and how only the shallow groundwater levels from multi-completion wells were used in the interpolation.</p> <p>Given the lack of shallow groundwater data and uncertainty in the vegetation map, all of the GDEs are best described as potential GDEs. This has been clarified in Chapter 2 of the GSP.</p> <p>To start providing the needed information, four additional wells will be installed near the GDEs in the western half of the basin. This will help to better assess shallow groundwater and help to calibrate the groundwater model to assess the effects of groundwater management on GDEs. Regarding GDEs, the 30 ft threshold will be reexamined after GSP submittal to reflect variation in groundwater elevation and uncertainty due to the lack of shallow groundwater. The special status species list will be refined after GSP submittal to include GDE units based on location within the basin and hydrology. Finally, the Normalized Difference Vegetative Index (NDVI) analysis will be clarified to account for localized changes as well as larger-scale changes near monitoring points and within the large GDE complex in the western half of the basin. The Sustainable Management Criteria (SMC) triggers can be adjusted if GDE health declines. SMCs were set above thresholds.</p> <p>We used the best available data to compile the list of special status species and acknowledged that Sierra Valley is an important bird area. Our sources for sensitive species included: the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Manual of California Vegetation (2021), Harnach (2016), eBird (2021), TNC freshwater species lists generated from the California Freshwater Species Database (CAFSD) (TNC, 2021), USFWS's Information for Planning and Consultation (IPaC) portal (USFWS, 2021), Feather River Land Trust Sierra Valley Birder's Guidebook (Feather River Land Trust n.d.), Vestra (2005), and CDFW's BIOS database. We will happily add information from additional reports after the GSP is submitted if they are made available to us.</p> <p>As part of the GSP, the health of GDEs will be tracked using NDVI coupled with measurements of shallow groundwater elevations near GDEs. If the interconnected surface water flows and the health of GDEs (as measured by NDVI) decline around the monitoring points and the change is due to groundwater management, the minimum thresholds (MTs) and measurable objectives (MOs) will be reevaluated.</p>

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Interconnected Surface Water (ISW)	<p>Quantification of ISW depletion is a difficult task considering the novelty of the model and lack of surface water data to perform calibration. Besides the streamflow gage on the Middle Fork Feather River there has been no continuous monitoring of streamflow within the groundwater basin in the last ~40 years. Consequently, this is considered a data gap and will be addressed by recommendations in the monitoring plan. As this data gap is addressed, we will be better able to assess how groundwater management is affecting interconnected surface water and groundwater elevations and the GSAs can target areas where ISW depletion is occurring. Assessing the effect on beneficial users will require more information on groundwater elevations and ISW to target areas that might require data linking flow and groundwater changes to habitat response. Recommendations in the monitoring plan look to fill these data gaps, but the number of new RMPs must strike a balance of filling data gaps and the cost of monitoring to the SVGMD . Additional description of the proposed monitoring network for GDEs has been included in Section 3.4.4, Monitoring Networks Summary. Interconnected surface waters were mapped by Balance Hydrologics using whatever well data were available and things like hydraulic gradients. To map ISW, we conservatively chose a wetter than average period by using groundwater elevation for springs of 2017-2020 which represented the highest groundwater elevations since 2006. Figure 2.2.2-12 will be modified to show depth to groundwater contours and wells used in the analysis. Additional monitoring required to better understand both groundwater dynamics and interconnected surface flow is described in section 3.4.4. This monitoring plan will be expanded in upcoming drafts of the GSP. The streams classified as a data gap in Figure 2.2.2-12 are retained as potential ISW. MTs of RMPs in these areas were set with this in mind by limiting decline of groundwater levels near ISW to the historical low groundwater elevation.</p>
Water Budget	<p>The hydrologic model description has been added to Section 2.2.1 and the water budget has been added to Section 2.2.3</p>
Climate Change	<p>Projected climate change impacts using the four climate change scenarios provided by DWR are included in the updated version of Section 2.2.3. In addition, climate change has been considered in the uplands management and restoration PMA, groundwater recharge PMA and fuels reduction PMA.</p> <p>The GSAs also acknowledges data gaps and existing uncertainty in its SV integrated hydrological model, as outlined in Appendix 2-5. While the model was developed based on the best available science and data and provided a sufficient understanding of Basin conditions, further improvements are needed to conduct climate change studies and simulate future scenarios. GSAs has sought to coordinate with local and regional stakeholders in generating and conducting climate change scenarios to include the largest spectrum of expected changes possible. This will help the GSAs include the changes to reservoir operation and surface water availability in the Basin. Surface water availability can have significant impacts on the Basin and need to be incorporated into future scenarios. There are several other climate factors in addition to temperature that influence recharge processes (e.g., timing of precipitation, precipitation volume, storm intensity). Changes in these could enhance, negate, or diminish any temperature change effects on recharge processes.</p>
Demand Management	<p>Developing a groundwater allocation system is discussed in Chapter 4, Section 4.3.7 Groundwater Trading and Allocations System. The section stated "Because this water management approach [pumping allocations] would have direct economic impact through reduced irrigation water volumes, and would require additional administration actions by the SVGMD, it is not identified in the GSP as a primary management action. Due to numerous comments/request, the text was changed to list pumping allocations as a potential management action IF other PMAs fail to address overdraft. Text was also added to say that pumping can also be redistributed vertically and spatially. For example, deep ag wells can be limited to pumping from deep aquifer layers while GDEs and domestic users can extract from the upper aquifer layer.</p>

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<p>Outreach</p>	<p>Outreach and engagement strategies are described in detail in the Communication and Engagement Plan and in Chapter 2 of the GSP. We will note that traditional community outreach activities were restricted by COVID as in-person events were not always possible. However, online monthly TAC and Board meetings were publicized through the SVGMD website and through emails to interested parties. In addition all meeting materials and meeting recordings are posted on the SVGMD website. Other approaches to publicizing events are listed below. Moving forward, comments on the outreach and engagement process are being taken into consideration and the approach during GSP implementation is provided in a new section on outreach and engagement for Implementation that has been added to the Communication and Engagement Plan (Appendix 2-3).As described in Chapter 2, substantial efforts to engage the public in development of the GSP have been underway since 2018 with public workshops being conducted in October 2018, December 2019, May 2021 and October 2021. These workshops were publicized through:          • Print and on-line media/newspaper announcements: Mountain Messenger; Plumas News; Sierra Booster and www.sierraville.org          • Outreach partners' newsletters, websites, and social media accounts          • GSA websites, with posting of TAC meeting minutes, materials and recordings on the SVGMD website          • Interested parties email lists          • Posting of public workshop flyers at local establishments          • Distributing surveys using multiple formats: hard copies at workshops, posted as PDFs, and links to online versions          In addition TAC meetings have been held monthly since November 2020 and GSP updates have been provided at the monthly SVGMD Board meetings. The Board meetings are open to the public and, as noted above, all meeting materials are posted on the SVGMD website.</p>
<p>Identification of Disadvantaged Communities and Tribes</p>	<p>To assist in DAC identification, DAC spatial layers have been added to the Data Management System (DMS). Inclusion of a specific figure within the GSP was deemed unnecessary as the boundaries can easily be obtained through other sources and do not affect SMCs developed for the basin. No federally recognized tribal lands are present in Sierra Valley.</p> <p>We believe that our sustainable management criteria protect domestic wells from impacts. Therefore, such an analysis would not substantively change the fact that projected groundwater management is not expected to impact domestic wells in the basin. To our knowledge, all domestic and municipal users in the basin are solely reliant on groundwater.</p> <p>However, the number and locations of domestic wells have been identified as a data gap that will be addressed during GSP implementation. This was discussed extensively at the TAC meeting on December 6th. SMCs, Chapter 3, will be modified to describe undesirable results according to decisions made at the December 6th meeting. Domestic well SMC has been removed until a more complete well inventory and assessment has been completed. Well inventory will be done within ~2 years and SMC can be re-evaluated for the 5-year GSP update.</p>
<p>Monitoring</p>	<p>New information has been discussed with the GSAs and more details on the monitoring network and on the commitment about future data collection are presented in chapter 3 and chapter 5. Section 3.4.4 provides a summary of existing monitoring networks and planned additions to address data gaps for groundwater elevation, water quality, ISW and subsidence. Potential funding and schedule for addressing data gaps and expanding monitoring networks are discussed in Section 4.2.2 (Monitoring and Reporting PMA) and in Chapter 5.</p>
<p>Data Gaps and GSP Implementation</p>	<p>Concern has been expressed that the plan identifies many data gaps and we agree that these must be filled in order to better ensure sustainable groundwater management in the SV basin. Nonetheless, the plan uses the best available information, and suggests the avoidance of significant and unreasonable impacts to beneficial users. Reducing MTs as suggested would likely lead to significant and unreasonable impacts to growers, ranchers, and municipal systems - only in the proximity of these users are groundwater levels allowed to decline beyond historical lows. As noted in the comment response to the Design and Implementation of Monitoring Networks, additional information on existing monitoring networks and planned enhancements has been provided in Section 3.4.4. There are a limited number of existing shallow groundwater wells in the Basin and of those even fewer have existing groundwater data or are suitable for collecting groundwater data. RMPs for ISW and GDEs represent those existing shallow groundwater wells suitable for monitoring and several new wells. The number of new wells is intended to strike a balance of filling data gaps and the cost of those wells to the SVGMD. If data gaps continue to exist the Plan can be modified at the 5-year update to include additional RMPs.</p>

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<p>Projects and Management Actions</p>	<p>Reoperation of Surface Water Supplies is a PMA included in Potential Projects and Management Actions in Chapter 4 that received multiple comments. There are other PMAs also being considered and evaluated with respect to potential effectiveness and technical and economic feasibility. Input on which PMAs are most feasible will continue to be sought during the GSP p process. The GSAs will evaluate timelines for demand management once preliminary results from PMAs in Tier I will be evaluated. This will provide a better understanding on the actual needs for the basin.</p>
<p>Subsidence</p>	<p>Inelastic (permanent) subsidence is a physical process where the arrangement of fine-grained materials (typically clays and silts) is altered such that compaction occurs. While this compaction does result in some loss of storage in these fine sediments, the majority of useable groundwater is stored and transmitted in coarse-grained which are unaffected by subsidence. Therefore, subsidence is a concern because differential deformation of the land surface can have adverse effects on engineered structures and conveyance systems (bridges, railroads, canals, etc.) on the land surface, not because of reduced subsurface storage capacity. The known extent and vertical displacement of subsidence in Sierra Valley is discussed in Section 2.2.2.5 of the GSP.</p> <p>Subsidence was discussed extensively by the TAC on December 6 in response to this and other public comments. It was decided to revise the subsidence discussion to indicate it needs closer monitoring. Monuments will be installed in the area mentioned and InSAR data will initially be used to monitor subsidence. Additional surveys will be conducted if InSAR subsidence increases by 50% of the average annual subsidence from baseline period (2015-2021). The GSAs may at their discretion elect to survey monuments more frequently, pending available funds.</p>
<p>GSA Rate Structure</p>	<p>The questions regarding cost allocation in funding GSP implementation are valid concerns in groundwater management in California. The Sierra Valley Basin has an established revenue structure that splits costs between property owners and well owners, through parcel fees and meter fees. Property owners of parcels that have large-capacity wells pay both fees, while property owners of parcels without large-capacity wells pay the parcel fee only. This revenue structure does spread costs out among both well owners and property owners in general, though it provides additional consideration to wells by imposing the meter fee. At this point a variety of options are being considered. One option presented in the Funding Options Technical Memorandum, a parcel tax, would allocate cost widely to all property owners. This mechanism would not charge based on groundwater extraction. While the advantage of this method is a lower rate for each property, it is true that it would not take usage into account. Several fee models presented in the Memorandum do take usage into account. These models project that any additional costs associated with GSP implementation will be borne by the well owners, through the implementation of either a regulatory fee or property related fee on wells. This would mean that whether GSP implementation costs end up closer to the low estimate or the high estimate, large-capacity well owners will bear any additional cost burden. The options of structuring of these fees are presented in the Funding Options Technical Memorandum as either an estimated usage fee, which would charge based on an estimated usage rate, or actual usage fee, which would require the use of meters on all non-de minimis wells. There are advantages to each of these methodologies, and both attempt to take usage into account. The question of cost allocation will continue to be evaluated and will consider these comments as the GSAs develop the final funding plan during the first year of GSP implementation.</p>